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Knowledge sharing and competitiveness of professional service firms: A case study

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Abstract

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by

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M.A., National University, 2005

M.B.A., University of Phoenix, 2002

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Abstract

The problem addressed in this study is that little action is taken to create the social aspects and social value of knowledge-sharing culture within organizations. There is a need for increased understanding of the behavioral side of knowledge management. The purpose of this study was to focus on knowledge sharing from a behavioral perspective. Knowledge management is defined as the accumulation, protection, and leverage of knowledge. This research study investigated the relationship between knowledge sharing and competitiveness and approached the field of knowledge management from the organizational, cultural, and behavioral perspectives. The research questions examined how knowledge workers described the parameters and conditions of knowledge sharing, as well as the relationship between knowledge sharing and competitiveness of professional service firms. The overall research design employed three focus groups and individual interviews of a selected professional service firm. Similarity and commonalities of data from interviews were color coded and labeled. Field notes, handouts, and a qualitative research computer program were used to triangulate data. Results of the study generated and established five specific categories. The categories of spiritual essence of business, believability and openness, and ethical responsibility present the mind and spiritual connection to enhance the value of knowledge sharing as a factor for competitiveness. In addition, the categories of whole brain learning and connectivity are context for creating a learning organization. The implications for social change include a clearer understanding of knowledge sharing which can increase organizational competitiveness. The effect of the added competitiveness of professional service firms can result in enhancing economic and social value of their key stakeholders.

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Dedication

This dissertation is dedicated to the lost Oiseau-Lyre I found after seeking for nearly two score years.

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My academic endeavor started 12 years ago when I reentered college. Throughout this epoch, I have been privileged to receive help and encouragement from numerous extraordinary people. In addition, my undertaking has been greatly alleviated by the moral support of my family, relatives, friends, and colleagues.

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Chapter 1: Introduction to the Study

This research study investigated knowledge management (KM) and knowledge sharing (KS) from a behavioral perspective. Jones (2006) defined KM as: "the process of acquiring knowledge from the organization or another source and turning it into explicit information that the employees can use to transform into their own knowledge allowing them to create and increase organizational knowledge" (p. 117). KS is defined as the exchange of the knowledge between two people (McNeish & Mann, 2010). Previous research on KM addressed organizational KS in general from a technological viewpoint. Thus, there is limited research on KS behavior within organizations. This chapter discusses the background of organizational information and knowledge, as well as assesses the cultural and organizational side of KM. Leveraging organizational knowledge for competitive advantage will also be examined. The problem statement, the purpose of the study, and the nature of the study will be addressed. Additionally, the research questions, significance of the study, definition of terms, assumptions, limitations, and delimitations are explained in this chapter.

Background of the Study

In today's economy, knowledge has become an important factor of organizational competitiveness (Dalkir, 2005). Knowledge about knowledge is critical to business success (T. H. Davenport & Prusak, 2000). Current development of information technology (IT) has heightened the awareness and the powers of managing knowledge, but KM "is not a technology, although technology should be exploited as an enabler" (Frappaolo, 2006, p. 8) of knowledge management systems (KMS). IT and KMS are not

the universal solution, but merely tools. Gilmour (2003) stated that the publishing model—collecting information and advertising its availability—was not an effective means for organizations to manage knowledge. Organizations must align their KM planning with organizational activities and strategic objectives before considering technology solutions (Hedgebeth, 2007).

KM strategic objectives consist of managing organizational intangible assets, one of which is the knowledge of their workers (Drucker & Maciariello, 2008). Knowledge workers are considered the most valuable human resource (Wickramasinghe & von Lubitz, 2007). Thus, finding, attracting, and motivating knowledge workers is the key to success of most organizations (Cross & Prusak, 2003). Organizational knowledge cannot be managed effectively when employees—especially knowledge workers—do not know they do not know (Dalkir, 2005), do not know who knows, do not know why they should share knowledge, and are not aware of the value of sharing knowledge (Garfield, 2006).

This research study approached KM from the organizational, cultural, and behavioral perspectives. Human behavior is the controlling factor behind KM implementation success because human interactions and the resulting creation of objective knowledge is the key to progress (Nonaka & Peltokorpi, 2006). The majority of the contemporary research on KM has centered around (a) essentials of KM, (b) knowledge-based theory on organization and innovation, and (c) organization learning and strategy of KM (Ma & Yu, 2010). Most KM literature lacks focus on KS and has commonly adopted a technical approach (Wang & Noe, 2010).

The obstacle to KS is a cultural issue, which includes leadership, trust, and incentives (Dalkir, 2005). Due to these issues, the focal point for a successful implementation of KM in organizations should be behavioral instead of technological. Implementing KMS to extract and make knowledge available without considering cultural issues may not be an effective way of managing organizational knowledge.

The three components to KS are people, process, and technology (Garfield, 2006). The action or activity of sharing knowledge is a behavioral one. The role of people in sharing knowledge is being widely acknowledged (Asimakou, 2009). Literature on KS is predominantly centered around the concepts, process, and trend identified at the organizational level (Foss, Husted, & Michailova, 2010). The goals of this research study are to partially fill the gap of the behavioral facet of KM research and to establish whether promoting KS among knowledge workers is a significant contributor to the successful implementation of KM.

Problem Statement

Organizations generally do not manage knowledge well and they behave "much like individuals because they too know more than they put to use" (Wellman, 2009, p. 1). Most organizations in the service industry recognize the importance of organizational knowledge as a valuable, intangible, corporate asset (Dalkir, 2005). The problem addressed in this research study is that "little emphasis was placed on the social aspects" (Cross & Prusak, 2003, p. 36) of the KM culture within organizations. Although enhancing KM significantly strengthens the competitiveness of an organization (Jones, 2006; Wellman, 2009), few organizations have succeeded in creating a knowledge-based

competence (Ichijo & Nonaka, 2007a). Consequently, there is a need for increased understanding of the behavioral side of KM. The lack of focus on the individual behavior of KS is the gap in the current literature on KM (Foss et al., 2010).

Purpose of the Study

The purpose of this research study was to examine how knowledge is shared among knowledge workers within the service industry, as well as whether creating an environment that encourages and supports KS among knowledge workers provides an organization with competitive advantage. When a firm "is able to create more economic value than rival firms" (Barney, 2007, p. 17), it has competitive advantage over its rivals. Competitive advantage can also simply mean "firm-specific advantage" (Kogut, 1985, p. 15) such as a brand name. Porter (1985) presented organizations with the concepts of competitive advantage through cost and product differentiation. For organizations, such as professional service firms (PSFs), their "product" is the expertise of their knowledge workers. Clients of PSFs generally associate the firm's name, performance, and reputation with the expected quality of service provided by the firm's knowledge workers (Greenwood, Li, Prakash, & Deephouse, 2005).

This research study investigated how managers and knowledge workers of one PSF perceive the relationship between KS and the effectiveness of KM, as well as their perspective on whether KS may lead to organizational competitive advantage. This research study also explored whether sharing organizational knowledge would produce an overall effectiveness to the PSF and enhance the firm's quality of service. The

relationship between KS and competitive advantage through quality of service differentiation was also examined.

Sharing knowledge is a behavior. This research study partially fills the gap of the relatively limited literature in the KS aspect of KM within the service industry. The goal of the study was to present PSFs with practical implication of KS and competitiveness. According to Stringer (2007), "the knowledge emerging from positivistic science continues to have the potential to dramatically enhance peoples' lives" (p. 16). Thus, the findings of this study serve as a contribution to positive social change.

Nature of the Study

This study used a qualitative method, the case study of a selected management consulting firm (an example of a PSF), to understand how knowledge workers view KS in their work environment. The case study was selected because, according to Leedy and Ormond (2010), its purpose is to understand one person or situation in depth within a natural setting. The case study allows the researcher a deeper understanding of how knowledge is shared among knowledge workers.

Data were collected from both manager and knowledge worker focus groups, and from in-depth interviews of all participants. The research method of interviewing was used because the "interview offers a powerful point of entry into a world from another's perspective" (Mears, 2009, p. 13). Such a point of entry is needed because it helps the researcher understand the interviewees' perspective in order to study their behavior. A more detailed discussion of the method appears in chapter 3.

Research Questions

This study focused on two general research questions.

Research Question 1: How do knowledge workers describe the parameters and conditions of KS?

Research Question 2: What is the relationship between knowledge sharing and competitiveness of PSFs?

In order to address the general research questions, the following interview questions were presented to both focus groups:

(i) What are the circumstances that present opportunities for work-related knowledge sharing?

(ii) What are the reasons and circumstances that result in impediments for employees seeking to share their working knowledge?

Questions that emerged from the discussions were presented to the combined focus group for further discussion.

Conceptual Framework

As a component of KM, leveraging organizational knowledge for competitive advantage is important. KS and PSFs are an integral part of this research study. This conceptual framework includes the case study research method because it helps reveal the power of the individual's mind through the dialog process of sharing one's perspective.

Knowledge Management

Knowledge can be viewed from multiple perspectives and various concepts of knowledge have generated different definitions. Thus, the conceptual framework of KM

covers a broad subject matter area. KM is a multidisciplinary field of study that encompasses the business perspective, the cognitive science perspective, and the process/technology perspective (Dalkir, 2005). Chakravarthy, McEvily, Doz, and Rau (2003) defined KM as "the accumulation, protection, and leverage of knowledge" (p. 305), while Frappaolo (2006) defined KM as "leveraging wisdom to increase responsiveness and innovation" (p. 8). Jennex, Smolnik, and Croasdell (2009) defined KM success as "capturing the right knowledge, getting the right knowledge to the right user, and using this knowledge to improve organizational and/or individual performance" (p. 183). To provide a holistic understanding of how organizational context influences KM effectiveness, Conley and Zheng (2009) proposed a framework of factors that is critical to KM success. The authors categorized this framework of factors as (a) top management and leadership support, (b) organizational culture, (c) organizational structure, (d) technology infrastructure, (e) strategy, (f) processes, (g) KM team, (h) training and education, (i) measurement, and (j) incentives. Culture has a profound effect on KM, while KM approaches can be applied to influence culture (Liebowitz, 2008). In the global economy, KM is, in fact, a form of intercultural management (Albescu, Pugna, & Paraschiv, 2009).

The core objective of KM is the creation of value for an organization (Bonifacio, Franz, & Staab, 2008). However, organizations should avoid a one-size-fits-all approach to their KM efforts (Iyer & Ravindran, 2009). In order to maximize the efficiency of KM, the intrinsic differences of employees need to be taken into consideration due to the knowledge diversity in the workplace (Magnier-Watanabe & Senoo, 2009). Despite

advancements in IT and its contributions to organizational efficiency, human beings hold the key to KM (Hatten, 2002).

Leveraging Organizational Knowledge for Competitive Advantage

The conceptual framework of KM also covers leveraging organizational knowledge for competitive advantage. Organizational knowledge can be leveraged through human capital development. Human capital is a component of KM. Lawler (2008) described organizations that optimize talent attraction, retention, and performance as human-capital-centric (HC-centric); "HC-centric approach is to gain a competitive advantage by having superior competencies and capabilities" (p. 41). In addition to human capital, intellectual capital is a component of KM as well. Lytras and Ordóñez de Pablos (2009, p. 213) discussed three subconstructs of intellectual capital (a) human capital, which reflects the set of knowledge, abilities, skills, and experience of the employees of an organization; (b) relational capital, which reflects the value of an organization's relationships with its customers, suppliers, shareholders, and the administrations; and (c) structural capital, which includes technological capital, as well as organizational capital, represents knowledge embedded in organizational structures, such as organizational culture, routines, policies, or procedures. According to Lytras and Ordóñez de Pablos, these three subconstructs of intellectual capital contribute to the creation of a long-term competitive advantage of an organization. The ability to manage knowledge strategically is a significant source of organizational competitive advantage (Grant, 1996).

Knowledge Sharing

The conceptual framework of KM includes KS. King (2006) defined KS as "the exchange of knowledge between and among individuals, and within and among teams, organizational units, and organizations" (p. 498). According to McNeish and Mann (2010), knowledge transfer is about the ability to take action based on knowledge. McNeish and Mann suggested that sharing and combining knowledge would come before knowledge transfer.

KS among employees is crucial for businesses, which operate in an uncertain knowledge environment (Herremans & Isaac, 2007). KS depends on the social relationships between individuals and the culture of the work environment; more knowledge is shared informally within the organizations (Ipe, 2003). Sharing or reluctance to share is a human behavior. When people feel good about sharing knowledge in an effort to help others, they tend to be more motivated to carry out the sharing behavior (Yu, Lu, & Liu, 2010). Reychav and Weisberg (2009) found that employees perceived KS to be a rewarding behavior; whereby sharing knowledge improves their performance and decreases their intention to leave.

In order to facilitate KS and transfer, Handzic and Zhou (2005) recommended that organizations must nurture a supportive environment and establish a technical infrastructure that includes making knowledge visible, developing knowledge networks, and providing organizational support. Yet, it is difficult for an organization to enforce the sharing of knowledge because the organization does not know what any person knows (T. H. Davenport, 2005).

Professional Service Firms

The conceptual framework of KM includes knowledge workers of professional service firms (PSFs) such as accounting, law, management consulting firms, or engineering consulting firms. PSFs are organized by practical specialties (for example, corporate law or intellectual property) or service lines (corporate finance or audit) instead of functional specialties, such as sales or production (T. J. DeLong, Gabarro, & Lees, 2007). The value of PSFs is enhanced mainly by the services of their expert knowledge workers. According to Suddaby, Greenwood and Wilderom (2008), PSFs are sometimes referred to as the firms of the future because they are exemplars of knowledge-intensive firms (KIFs). The viability of KIFs require employees to have and use knowledge, skills, and qualifications, which Ritter and Gemünden (2004) described as competencies. In order to attain a sustainable competitive advantage, the PSF needs to develop its core competences all the time (Awuah, 2007).

Case Study Research Method

The conceptual framework includes case study research which is one of the categories of field research. Events, situations, programs, and activities have been studied using case study research (Hancock & Algozzine, 2006). Case study has a long and interesting history in its dominant role in anthropology, sociology, archaeology, history, political science, education, medicine, psychology, social work, and business (Gerring, 2007). The objectives of researchers doing case study is to gain in-depth understanding of situations and meaning for those involved (Hancock & Algozzine, 2006). When case study is adequate to the problem it is intended to solve and is

implemented at high standards; its methodology is very rigorous, comparable with any other research method (David, 2007).

Case study research involves extensive observations of a single group or a person (Graziano & Raulin, 2007); it is intended to focus on a particular issue (Noor, 2008). There are three types of case study (a) exploratory—seeks to define questions of a subsequent study, (b) descriptive—attempts to present a complete description of a phenomenon within its context, and (c) explanatory—seeks to establish cause-and-effect relationships (Hancock & Algozzine, 2006; Yin, 2009). Yin (2009, p. 8) recommended using case study when (a) the focus of the study is to answer how and why questions, (b) the behavior of those involved in the study cannot be manipulated, (c) contextual conditions need to be covered because they are believed to be relevant to the phenomenon under study, and (d) boundaries between phenomenon and context are not clear.

This research study adopted the investigative approach of evaluation research using case study methodology, the goal of which was to examine the relationship between KS and competitiveness in PSFs. Investigative approach offers an in-depth understanding of the experience of the participants. Interviewing, in particular, provides the researcher direct access to human perception and memory (Mears, 2009).

Definition of Terms

The following are definition of key operational terms used in this dissertation:

Action orientation: a person's general tendency to approach or avoid things in a dynamic fashion (Kuhl, 1994).

Benevolence-based trust: trustworthiness on the basis of sentiments, genuine care, honesty, and personal attachments (Ko, 2010).

Centrality: "a person's relationship with other employees in the organization, and the extent to which other employees approach that person for help" (Subramanian & Soh, 2009, p. 49).

Communities of practice (CoPs): groups of people informally assemble to share experience and passion (Wenger & Snyder, 2000).

Competence-based trust: trustworthiness on the basis of ability, reliability and competence (Ko, 2010).

Competitive advantage: when firms create more economic value (the difference between revenue and cost) than their competitors (Barney, 2007).

Exchange ideology: the relationship between what individuals give to and receive from an organization (Witt & Wilson, 1990).

Infoculture: the power, agendas, and fights/flights that concern organizational information (Travica, 2005).

Information culture: "the socially shared patterns of behaviors, norms, and values that define the significance and use of information" (Choo, Bergeron, Detlor, & Heaton, 2008, p. 792).

Infopolitics: the stable beliefs and behaviors that refer to organizational information and information technology (Travica, 2005).

Intangibility of knowledge: Knowledge is intangible. The level of intangibility of knowledge can be classified as low (explicit knowledge, such as data), medium (tacit knowledge that is expressible), and high (tacit knowledge that is inexpressible) (Nan, 2008).

Knowledge applications: the KM applications that connect people, knowledge, query, and process (Frappaolo, 2006).

Knowledge as currency: knowledge is used as the key medium of exchange (Jue, Marr, & Kassotakis, 2010).

Knowledge complexity: a characteristic of KM, which includes explicit and tacit knowledge, grapevines, CoPs, the informal knowledge network, and knowledge chain (Frappaolo, 2006).

Knowledge ecology model: a proposed KM model (modified from bio-ecological behavior) composed of four segments: knowledge, communities, organizational resources, and external environment (Chen, Liang, & Lin, 2010).

Knowledge hoarding: the desire to hold on to knowledge (Khairah & Singh, 2008).

Knowledge- intensive firms: organizations whose competitive advantage is in forms of knowledge rather than in forms of capital and labor (Starbuck, 1992).

Knowledge market: similar to markets for goods and services, knowledge market has buyers (receivers of knowledge) and sellers (givers of knowledge) who exchange

knowledge through negotiating a mutually satisfactory price (benefit). It has brokers who bring buyers and sellers together (Cross & Prusak, 2003; T. H. Davenport & Prusak, 2000).

KS mechanism: the method, procedure, or process involved in knowledge sharing within organizations (Chai, Gregory, & Yongjian, 2003).

KM mindset: the distinctive viewpoints, needs, and agendas that determine how an organization engages knowledge (Culbert, 1996).

Power: "the status and respect that an employee enjoys within the organization" (Subramanian & Soh, 2009, p. 49).

Practitioner knowledge: knowledge created by practitioner "that is valuable for conducting everyday lives" (p. 17) in everyday practices (McNiff & Whitehead, 2006).

Self-efficacy: one's own perception of one's capabilities to cope with the situations (Bandura, 1986).

Signal of competence: indication of the firm's technical expertise, knowledge, and work quality of its workers (Haas & Hansen, 2007).

Stickiness of knowledge: the difficulty of separating knowledge from its source (Ichijo & Nonaka, 2007a).

Uncertain knowledge: knowledge that has not been determined.

Zero-sum game: A game in which the sum of the payoffs for the outcome add to zero (Straffin, 1993). For ordinary recreational two-person zero-sum games, one person's gain is the other person's loss (Morris, 1994).

Assumptions

This research is a case study, the key assumption is that the management of the selected PSF provides full support and cooperation, and the participants are outspoken in their responses. This research study is based on the assumption that knowledge is shared within service-providing organizations (which include KIFs and PSFs) and such organizations "offer to the market the use of fairly sophisticated knowledge or knowledge-based products" (Alvesson, 2004, p. 17) as their main activity. In addition, such organizations recognize what KM is, and have a basic understanding of the concept of KS. This research study is also based on the assumption that knowledge is a key asset of the service industry, and knowledge resides in knowledge workers, who are using knowledge and their expertise to perform practical applications in their work.

Limitations

The limitations of this research study include the parameters set by the characteristics of the case study as a research design, and the constraints on generalizability of data collected from interviewing as a research method. Purposeful sampling was used for data collection and analysis of this research study. The weakness of which is that the samples might be biased. The numbers of selected participants were six. Therefore, the data collected were limited by the professionalism and viewpoint of the selected participants (Morse, 2000). Furthermore, the outcome of the findings was limited by the responses of the participants.

Delimitations

This research study focused on a single, selected PSF, management consulting firm. Knowledge workers of management consulting firms may have different KS issues and challenges than those of other PSFs, such as architecture, law, or accounting firms. The scope of this research study was limited to the personal interaction dimension of KS behavior. This dimension includes sharing knowledge informally or formally. Two dimensions of KS behaviors, person-to-document and person-to-group, were not pursued because the focus of the study was on personal interactions.

Significance of the Study

The findings from this study serve as a contribution to the scholarly literature in the area of the behavioral facet of KM. The significance of this research study is that it improves the economic and social value of PSFs. Gewritz and Cribb (2006) argued that paying attention to values should be a component of methodological rigor of social research.

As important and necessary social change agents, businesses have the power to exert positive social change in society by engaging in corporate social responsibility (CSR) initiatives (Aguilera, Rupp, Williams, & Ganapathi, 2007). Davis (1973) defined CSR as "the firm's consideration of, and response to, issues beyond the narrow economic, technical, and legal requirements of the firm" (p. 312). The objective is to "accomplish social benefits along with the traditional economic gains, which the firm seeks" (p. 313). CSR is important for a firm's survival in the current, ever-increasingly competitive environment (Samy, Odemilin, & Bampton, 2010). Businesses are made up of

organizations and their employees. Creating what is good for the businesses also generates what is good for the individuals in the organizations. The improvement of combined individual values eventually enhances social value (Auerswald, 2009). Thus, the social value of this research study is its recommendations of enhancing managing organizational knowledge through effective KS. Advancement in KM has a positive impact to an organization. Success of an organization directly creates value to the well-being of people and of society.

Summary of Chapter 1

This chapter establishes the background, the problem, the purpose, and the nature of this research study, as well as a description of the research questions. This chapter discusses the importance of KS to the service industry and to the PSFs, in particular. The discussions are followed by specifying the need to understand the concept of KM and KS from a behavioral perspective. Since the field of KM has been more technology focused due to the rapid advancement of IT, it is worthy to partially fill the gap of establishing KS as a crucial contributor to KM. This chapter acknowledges the use of case study of a selected PSF as a research design because of the necessity to interview participants consisting of knowledge workers and managers. This chapter also acknowledges interviewing as a research method for the researcher to gain an in-depth understanding of the relationship between KS and competitiveness of PSFs. Due to the reason that this case study includes a specific PSF and the research involves an investigation of the behavioral side of KM, it is imperative that the concepts in this chapter relate to how behavior is essential to understanding other aspects of KM. This research study is based

on the assumption that the management of the selected PSF provides full support and the participants are outspoken in their responses. The weakness of this research study is the possible bias resulting from small sample size. The significance of this research study is its contribution to the improvement of the economic and social value of PSFs, which leads to the well-being of society.

Chapter 2 is the review of literature of the field of KM, which includes the following topics: information versus knowledge, knowledge creation, and knowledge workers. In addition, the topics on KIFs, PSFs, KM, and organizational culture are also reviewed. The literature addresses KS and competitive advantage. Chapter 3 describes the process of recruitment of participants, as well as collection and analysis of data using case study research method. Protection of human participants and dissemination of findings are also covered. Chapter 4 summarizes the findings from the focus groups and individual interviews. Chapter 5 includes the summary of the research, a discussion of the findings related to the literature, and implications for future research.

Chapter 2: Literature Review

The purpose of this research study was to find out the relationship between knowledge sharing (KS) and competitiveness of professional service firms (PSFs). In order to accomplish this purpose, a thorough understanding of the concepts and theories related to knowledge management (KM) is necessary. The purpose of this chapter was to investigate these concepts and theories through literature review.

According to Frappaolo (2006), *knowledge complexity* and *knowledge applications* are two basic characteristics of KM. Knowledge complexity includes explicit and tacit knowledge, grapevines, *communities of practice* (CoPs), the informal knowledge network, and knowledge chain. Knowledge applications are based on a model that regards sharing of knowledge throughout the organization as the key role of KM. The four applications of KM (Frappaolo, 2006) are (a) intermediation—the connection between knowledge and people, (b) externalization—the connection of knowledge to knowledge, (c) internalization—the connection of knowledge to query, and (d) cognition—the linking of knowledge to process. This research study focused on the connection between knowledge and people—specifically, the behavior of employees sharing knowledge within the organization.

The review of literature of this research study will begin with exploring the fundamentals of knowledge, which includes the difference between information and knowledge, types of knowledge, knowledge creation, KS, and KS behavior. Also reviewed are the unique characteristics of KS such as: KS and trust; KS and personal relationships; barriers to KS; motivation and KS; and organizational KS culture. In order

to establish a foundation for this research study, literature on knowledge workers, knowledge-intensive firms (KIFs), and PSFs will be reviewed. The implementation of IT and knowledge management systems (KMS) as enhancements to organizational KM will also be included. In addition, literature on intellectual property rights, KS and organizational competitiveness will be reviewed to find out what and how much should be shared between organizations. This chapter will conclude with a discussion of current literature gap and how this research study will partially fill this gap.

Literature Search Strategy

The search for articles from major journals that investigate and discuss the concepts of *knowledge sharing*, *competitive advantage*, and *professional service firms* was conducted from the following databases: Academic Search Premier, Business Source Premier, Academic OneFile, SocINDEX, PsycARTICLES, SAGE, and PsycINFO. Papers published and posted at *Electronic Journal of Knowledge Management* (http://www.ejkm.com) were reviewed as additional resources for KM-specific issues and trends. Because KM is a relatively new discipline and new concepts are evolving, initial searches were limited to articles published between 2006 and 2011. Articles published earlier than 2006 were considered if the initial search failed to locate extensive materials on the topic.

Articles were located by using the key words *competitive, focus group, incentive, innovation, interview, intellectual property, knowledge capital, knowledge creation, knowledge sharing, knowledge work, knowledge-intensive firm, knowledge management, knowledge management systems, networking, organizational culture, phronesis,*

professional service firm, social value, and *trust*. As a supplement to journal articles, books on knowledge, KM, organizational culture, human behavior, and action research were reviewed for definitions, terms, and theories. References in articles were also reviewed.

Information versus Knowledge

Before going into the subject areas of KM and KS, it is essential to explore the diverse aspects of knowledge, and to differentiate between the terms information and knowledge, even though these two terms have been used interchangeably by many researchers (Wang & Noe, 2010).

Information

Information is different from data. According to T. H. Davenport and Prusak (2000),"data is a set of discrete, objective facts about events" (p. 2); data become information when they are contextualized, categorized, calculated, corrected, or condensed (T. H. Davenport & Prusak, 2000). Information is data put in context forming the basis for knowledge (Nonaka & Toyama, 2007). Unless the things learned are put into action, they will remain information and never become knowledge (Drucker & Maciariello, 2008). Information is meaningful and processed data (Handzic & Zhou, 2005). Within an organization, information is needed on an operational level and is normally not the subject of further intellectual investigation (Frank, 2002). Cortada (1998) argued that, throughout history, people recognized the value of collecting and using information; the collections of information normally led to the creation of

knowledge. When information is used to address novel situations with no direct precedent, it becomes knowledge (Frappaolo, 2006).

Knowledge

Knowledge is different from information. Nonaka (1994) defined knowledge as justified true belief, while Tiwana (2002) defined knowledge as "a fluid mix of framed experience, values, contextual information, expert insight, and intuition that provides an environment and framework for evaluating and incorporating new experiences and information" (p. 4). Knowledge is information that is actionable (Handzic & Zhou, 2005). Information is transformed into knowledge by humans through (a) how information compares between one situation with other known situations, (b) what decisions and actions does the information lead to, (c) how this bit of knowledge relates to others, and (d) what other people think about this information (T. H. Davenport & Prusak, 2000). Knowledge and decision are strongly linked, according to Jones (2006), "not only is knowledge a requirement for making a decision, but the decision itself then becomes a piece of knowledge" (p. 116). Knowledge emerges from decision. Knowledge also emerges from the application, analysis, and productive use of data and information (Hislop, 2005).

Nonaka, Toyama, and Hirata (2008) argued that knowledge is created by human beings; therefore knowledge is subjective, process-related, aesthetic, and created through practice. Gilbert (2007) observed that knowledge is constructed by the learner to maintain an equilibrium with prior knowledge and experience. Knowledge is affected by one's values and beliefs, according to T. H. Davenport and Prusak (2000), because

"people with different value 'see' different things in the same situation and organize their knowledge by their values" (p. 12). The authors labeled the higher-order concepts of knowledge as insight and wisdom.

In contrast to knowledge, wisdom is concerned with enduring universal truths, as well as apprehends "how the various aspects of reality are related to each other" (Csikszentmihalyi & Rathunde, 1990, p. 28). Thierauf and Hoctor (2006) defined wisdom as "the ability to judge soundly" (p. ix), and stated that "wisdom requires an intuitive ability, born of experience, to look beyond the apparent situation in order to recognize exceptional factors and anticipate unusual outcomes" (p. 5). Two words are frequently used by scholars to describe the relationship between knowledge and wisdom: episteme and phronesis. Episteme is the discovery of truth and certain knowledge (Eisner, 2002). Phronesis is an Aristotelian concept of practical wisdom, which could also relate to prudence, and intelligence; practical wisdom is acquired with experience (Breier & Ralphs, 2009).

Knowledge is considered an individual's power and privilege and the desire to hold on to power hinders the sharing of knowledge (Khairah & Singh, 2008). Knowledge is commodity, and ownership is very important (Dalkir, 2005). Spender (2007) presented three types of knowledge: knowledge-as-data, knowledge-as-meaning, and knowledge-as-practice. Knowledge is often viewed from different perspectives. For example, scholars "have drawn on philosophy to define knowledge, economics to discuss the role of knowledge in organizations, and psychology to explain human motivation/interaction patterns" (Nonaka & Peltokorpi, 2006, p. 18). Alvesson (2004) argued that "knowledge

is better understood as a social process than as a functional resource" (p. 233). Thus, "knowledge is usually associated with a higher level of abstraction" (Frank, 2002, p. 99). The unique feature of knowledge is that "use of knowledge does not consume it" (Dalkir, 2005, p. 2); for that reason, knowledge does not diminish when shared.

D. W. DeLong and Fahey (2000) classified organizational knowledge into three distinct types (a) human knowledge—what individuals know or know how to do, (b) social knowledge—knowledge exists only in relationships between individuals or within groups, and (c) structured knowledge—knowledge embedded in an organization's systems, processes, tools, and routines. Christensen (2007) identified four types of organizational knowledge (a) professional knowledge—knowledge that enables an employee to perform the job of an operation supporter; (b) coordinating knowledge—knowledge stipulated in rules, standards, and routines for how tasks are to be performed; (c) object-based knowledge—knowledge related to a certain object (such as a patient, a machine, or a customer) passing through the production line; and (d) know-who—knowledge about who might know. Organizational knowledge can be stored, embedded, or represented as knowledge-resource components, which consist of participants' knowledge, culture, infrastructure, knowledge artifacts, purpose, and strategy (Holsapple & Joshi, 2002).

Explicit and Tacit Knowledge

Knowledge is of two forms: explicit—codified knowledge, documented knowledge, content that has been captured; and tacit—private knowledge, resides only within individuals (Dalkir, 2005; Frappaolo, 2006; Khairah & Singh, 2008). Explicit

knowledge (also known as declarative knowledge) is objective and formal knowledge, is tangible information, is capable of being codified, is consciously accessible, can be easily networked, and can be easily communicated (Sallis & Jones, 2002). Tacit knowledge, a term coined by Polanyi (1967), is personal knowledge that relates "to hunches, insights, intuitions, feelings, imaginary and emotions" (p. 13), and is deeply rooted in an individual's experience and consciousness (Sallis & Jones, 2002). Tacit knowledge can be described as "complex knowledge, developed and internalized by the knower over a long time" (T. H. Davenport & Prusak, 2000, p. 70); and tacit knowledge "is almost impossible to reproduce" (p. 70), hence its abstract characteristics.

Alvesson (2004) argued that no knowledge is entirely explicit or entirely tacit. It is tacit knowledge that puts explicit knowledge to work (Maznevski & Athanassiou, 2007). Knowledge in an organization is both explicit and tacit. Due to the tacit aspects, sharing knowledge within an organization is not so easy (Ichijo, 2007). "The effective management of tacit knowledge–the unwritten memory of the firm–is essential to the success of modern firms" (Holste & Fields, 2010, p. 135). In addition to tacit and explicit knowledge, Frappaolo (2008) discussed an additional category: implicit knowledge. In contrast to tacit knowledge, which is knowledge impossible to codify, implicit knowledge is knowledge not yet transformed into explicit. The author proposed organizations to position implicit KM within the KM framework by employing tools and methodologies to capture and transform implicit knowledge because when knowledge is explicit, technology can make it more accessible.

Nonaka and Takeuchi (1995) presented four modes of knowledge conversion to illustrate the interaction between explicit and tacit knowledge (a) *socialization* is a process of sharing experiences resulting in tacit knowledge created from tacit knowledge, (b) *externalization* is a process of articulating tacit knowledge into explicit concepts, (c) *combination* is a process of systemizing concepts into a knowledge system by combing different bodies of explicit knowledge, and (d) *internalization* is a process of embodying explicit knowledge into tact knowledge. Magnier-Watanabe and Senoo (2009) found that *combination* appeared as an important source of competitive advantage related to technical knowledge, and *socialization* contributed to a competitive advantage related to affective knowledge. In addition to categorizing knowledge types as tacit, explicit, individual, and social, Alavi proposed the following knowledge taxonomies: (a) declarative—know-about, (b) procedural—know-how, (c) causal—know-why, (d) conditional—know-when, (e) relational—know-with, and (f) pragmatic—useful knowledge for an organization.

Knowledge Creation

Graziano and Raulin (2007) used six words to define knowledge acquisition (a) tenacity is accepting ideas as valid because they have been accepted for so long that they seem true, (b) intuition is accepting ideas without intellectual effort, (c) authority is accepting ideas because some respected authority claims that the ideas are valid, (d) rationalism is developing valid ideas using existing principles of logics, (e) empiricism is gaining knowledge through observation, (f) science is a process that combines the principles of rationalism with the process of empiricism, using rationalism to develop

theories and empiricism to test the theories. It is universally recognized that knowledge is created by human because "knowledge-creating activities take place within and between humans" (T. H. Davenport & Prusak, 2000, p. 6). Similarly, organizational knowledge is created by employees.

According to von Krogh (1998), effective knowledge creation is influenced by how employees care for each other. The author argued that care gives rise to trust, active empathy, lenient judgment among employees, and the courage that employees exhibit toward each other. Care also translates to real help among employees. When there is care in organizational relationships, "organization member will *bestow* knowledge on others, as well as, receive active help from others" (von Krogh, 1998, p. 141, emphasis in original) resulting in greater amount of knowledge creation.

Any theory of the knowledge-based organization has to address the reality of human beings as individuals because knowledge is created by human beings (Nonaka et al., 2008). Thus, KS behavior is the focus of this research study. Practitioners in many occupations are undertaking more of their own research, in and from their practice, creating practical knowledge; practical knowledge is always pragmatic for the practitioner (Jarvis, 1999). McNiff and Whitehead (2006) argued that "*practitioner knowledge* is central to practical and theoretical sustainability" (p. 18, emphasis added). Practical sustainability is the interdependent creation of renewable practitioners' personal theories while theoretical sustainability is development of new theory and creation of new knowledge.

Knowledge Sharing

KS is different from knowledge creation because KS is "the process intended at exploiting existing knowledge" (Christensen, 2007, p. 37), and KS is one of the processes in overall KM framework (Alavi & Leidner, 2001). Bartol and Srivastava (2002) identified four *KS mechanisms* (a) knowledge contributions to databases, (b) KS in formal interactions, (c) KS in informal interactions, and (d) CoPs. KS involves an aspect of unselfishness (von Krogh, 1998). Matsuo and Easterby-Smith (2008) presented the following five main factors that facilitate or inhibit KS or knowledge transfer within and between organizations: (a) the motivation of the sender and the recipient, (b) the relationship that exists between the sender and the recipient, (c) the technical ease of transfer, (d) the absorptive capacity of the recipient, and (e) the characteristics of knowledge. Employees' self-efficacy has a positive influence on KS mechanism (Cho, Li, & Su, 2007; Endres, Endres, Chowdhury, & Alam, 2007) because employees of high self-efficacy and an *action orientation* are more likely to overcome the impediment in KS (Kuo & Young, 2008). For example, from an empirical study in a software firm (one type of KIF), Bryant (2005) found that KS can be enhanced by increasing employees' beliefs about their capability through peer mentor training. Similarly, employees are highly motivated to share their knowledge if they are confident in their ability to contribute knowledge that will enhance the success of their organization (Cho et al., 2007). To enhance the knowledge-culture within the organizations, H.-F. Lin (2007) proposed that organizations can establish a highly self-efficacious staff by recruiting and

selecting employees who (a) are proactive, (b) have high cognitive aptitude and self-esteem, and (c) are intrinsically motivated.

The *stickiness* of knowledge is the difficulty of separating knowledge from its source (Ichijo & Nonaka, 2007b). The transfer of knowledge that requires more efforts are said to be stickier; thus stickiness is often thought to slow down the movement of knowledge (Szulanski & Cappetta, 2003). Gupta and Govindarajan (2000) recommended that the best ways to maximize KS are (a) to ban knowledge hoarding and turn knowledge giver into champions, (b) rely on group-based incentives by reinforcing KS as a cultural norm, (c) invest in codifying tacit knowledge, and (d) match knowledge transfer mechanisms (such as the exchange of conversations, training, and documents; and relocate teams and people) to types of knowledge in order to ensure the receiver actually receives what the sender has sent, as well as to lower the cost and enhance the speed of the transmission channels.

For organizations to master KS, Widén-Wulff and Suomi (2007) recommended organizations to (a) allocate resources to sustain adequate people and time to conduct KS, (b) exploit such resources efficiently, (c) install the metaphor of organizational learning into the organization, (d) create an organizational atmosphere that supports and awards KS, (e) include information sharing in the process of business re-engineering, and (f) value KS as one important component in business success. Wang and Noe (2010) argued that the success of KM and KS initiatives depend on organizations (a) sustaining a culture that emphasizes trust and innovation, (b) requiring and rewarding managers to provide the support needed for encouraging KS among employees, (c) shaping and facilitating

employee perceptions of knowledge ownership, (d) paying close attention to cultural characteristics in developing human resource practices that will facilitate KS.

One of the obstacles that hinder KS within an organization is the belief that knowledge is property (Dalkir, 2005). However, sharing knowledge is different from the common perceptions of sharing property. According to game theory (Morris, 1994; Straffin, 1993), the outcome of sharing tangibles is *zero-sum* (where one's gain is the other's loss). That is, by giving away a tangible item (*i*), the summation of the person receiving the item (+ *i*) and the person giving the item (− *i*) equals to zero (+ *i* − *i* = 0). Contrasting to sharing tangibles, the outcome of sharing knowledge (an intangible item) is positive *non-zero-sum* because when one shares knowledge with others, there is no loss of one's knowledge. Together, the sum of the knowledge retained equals to larger than zero. Consequently, "transferral of knowledge does not result in losing it" (Dalkir, 2005, p. 2). However, for those individuals who believe that sharing their knowledge would diminish their status or jeopardize their job security (Riege, 2005), then using *zero-sum* theory to substantiate their behavior would be more relevant.

C.-P. Lin (2007) conducted a study using exchange ideology as a moderator of KS. The author found that the influence of co-worker congruence (interpersonal similarities) on KS is stronger for individuals with low exchange ideology because they are less concerned about the effects of sharing knowledge. Individuals with high exchange ideology are more practical and sensitive to the received task interdependence (the interconnections between tasks) since they perceive it with extrinsic exchanges as

domains for sharing activities. Thus, the influence of received task interdependence on KS is stronger for individuals with high exchange ideology.

Knowledge-Sharing Behavior

KS and learning behaviors are practices essential to improvement in organizational performance (Earl, 2001). Sharing or not sharing is a behavior. When knowledge is shared in an effort of helping others, this behavior can be explained on the basis of altruism (Yu et al., 2010). Kim, Lee, and Olson (2006) described individual's behavior type as a cooperator, reciprocator, and free rider toward knowledge contribution. However, the behavior of KS is not a behavior that can be measured easily (Ford & Staples, 2008). The authors identified six types of KS behavior classifications: full-KS, partial-KS, discretionary-KS, knowledge hinting, active-knowledge hoarding, and disengaged.

KS behavior is one form of favor exchange between individuals or organizations. This behavior can be explained on the basis of social exchange theory (Thibaut & Kelley, 1959), which refers to the individual's expectation of maintaining exchange balance between parties (Blau, 1964). Muthusamy and White (2005) found that relational social exchanges, such as reciprocal commitment, ability-based trust, *benevolence-based trust*, integrity- or *competence-based trust*, and mutual power or influence are positively related to inter-organizational learning between alliance organizations. KS behavior can also be explained on the basis of reciprocity, which is the standard of behavior that characterizes the social interaction of normal adults (Bruni, Gilli, & Pelligra, 2008). Employees are more likely to share knowledge with other employees if they believe sharing will

improve mutual relationship (Cho et al., 2007). Reciprocal exchange plays an important role in shaping the social status and productivity of an employee (Flynn, 2003).

Yi (2009) proposed classifying KS behavior into four dimensions: written contributions (person-to-document), personal interactions (person-to-person, social informal), organizational communications (person-to-group, social formal), and *CoP* (person-to-group, social informal).

Written Contributions as Knowledge Sharing

This dimension includes employees contributing ideas, information, and expertise by posting documents to organizational database repositories (such as a knowledge transfer system) and by submitting reports to other employees and to the organization (Yi, 2009). According to Watson and Hewett (2006), the success of a knowledge transfer system depends on the willingness of individuals within the firm to contribute their valuable knowledge to the system. The knowledge shared through written means is more explicit (Yi, 2009).

Personal Interactions as Knowledge Sharing

This dimension includes employees sharing knowledge through informal person-to-person interactions among individuals, such as chatting (Yi, 2009). Oral storytelling is one example of KS through personal interactions. "Stories are usually faster comprehended, better kept in mind and easier transferred than abstract explanations" (Pannese, Hallmeier, Hetzner, & Confalonieri, 2009, p. 305). Thus, stories can be used by organizations as an effective means for sharing knowledge. Organizations can increase the level of personal interactions within the organizations by encouraging their

employees to work in teams, as well as by using job rotation to create opportunity for employees to interact with different groups of people and form informal networks (Han & Anantatmula, 2007). The knowledge shared through personal interactions is more tacit (Yi, 2009). Another example of KS through personal interactions is a semi-formal structured assembly, where employees across organizational levels discuss ideas and issues, known as town hall meeting (Mayfield, 2010).

Organizational Communications as Knowledge Sharing

This dimension includes employees sharing knowledge through formal interactions within or across work units (Yi, 2009). This form of communication commonly occurs at organizations' regular and unscheduled meetings or among individual employees. Appel-Meulenbroek (2010) found that an organizational layout that provides ample co-presence among employees increased KS. The knowledge shared through organizational communications is more tacit (Yi, 2009).

Communities of Practice as Knowledge Sharing

This dimension includes employees sharing knowledge within a group of individuals who share common experience or interest (Yi, 2009). CoPs are generally made up of groups of people who develop shared objectives and mutual trust where reciprocity is the norm (Alvesson, 2004). Zboralski (2009) found that knowledge workers in CoPs are motivated by intrinsic objectives; interactions among them are encouraged by a supportive leader and by an appropriate management support. If organizations are considering supporting CoPs, they should look at what those communities are for and how to create communities that would contribute to

organizational goals (Klein, 2008). The knowledge shared through CoPs is more tacit (Yi, 2009).

Knowledge Sharing and Trust

In organizations, KS is greatly influenced by trust because according to Deng (2008),"trust is a key enabler for knowledge sharing, and the success of building trusting relationships for knowledge sharing hinges upon management upholding KM principles" (p. 185). Shaw (1997) defined trust as a "belief that those on whom we depend will meet our expectations of them" (p. 21). From the definitions of trust offered by researchers from various disciplines, Houtari and Livonen (2004) summarized the following basic features: (a) trust is based on expectations and interactions, (b) trust is manifested in peoples' behavior pattern, and (c) trust makes a difference. Levin and Cross (2004) suggested that trusting a knowledge source to be benevolent and competent enhances KS, because benevolence- and competence-based trust positively influence greater knowledge exchange, as well as the perception of the knowledge seeker. Trust is a form of tacit knowledge that can be made explicit by means of KM techniques, such as codification and pattern matching (E. Davenport & McLaughlin, 2004).

Fineman (2003) argued that trust "is not something that is simply present or absent from a social relationship, but is negotiative and contextually/structurally specific" (p. 565). Consequently, trustworthiness generally reduces *stickiness* of knowledge (Szulanski & Cappetta, 2003). The increased complexity and uncertainty of the business environment cannot be handled without interpersonal and inter-organizational trust; thus,

in knowledge-intensive business especially, trust is a highly desirable property (Lane, 1998).

Wu, Lin, Hsu, and Yeh (2009) found that employees' perceived interpersonal trust, either of their colleagues or supervisor, was positively correlated with their KS behaviors in the workplace. Establishing KS culture should initiate from an environment of trust among employees. The interaction between trust and KS is particularly complex in an organizational setting (McNeish & Mann, 2010). Organizations with a higher level of trust are more successful in implementing KM than those organizations with a lower level of trust (Ribiere, 2005). Thus, organizational trust is a critical component of culture in effective KM (DeTienne et al., 2004). A trustworthy environment of the organization enhances the KS willingness of employees (Liao, 2008).

Lack of trust is a common barrier for an organization to change to a KS culture (Dalkir, 2005). T. H. Davenport and Prusak (2000) described three ways that lead the organization to establish trust in sharing knowledge (a) trust must be visible, (b) trust must be ubiquitous, and (c) trustworthiness must start at the top. The factors that influence employees' perceptions of managerial trustworthiness can be categorized as: behavioral consistency, behavioral integrity, sharing and delegation of control, communication, and demonstration of concern (Whitener, Brodt, Korsgaard, & Werner, 2006). Renzl (2008) conducted a study on the relationship between trust in management and KS. The author found that trust in management increases employees' KS and reduces the fear of losing their unique value in the KS process.

McAllister (1995) described two forms of trust which are foundation of interpersonal cooperation in organizations (a) affect-based trust, which is grounded in mutual care and concern between workers, and (b) cognition-based trust, which is grounded in co-worker reliability and competence. To find out the relationship between trust and sharing tacit knowledge within the organizations, Holste and Fields (2010) conducted a survey of 202 managerial and professional employees of an international organization. The authors found that affect-based trust has a significantly greater influence on the willingness of the employees to share tacit knowledge, while cognition-based trust plays a greater role in willingness for the employees to use tacit knowledge.

Knowledge Sharing and Relationships

KS is positively affected by relationships, because "knowledge is most readily shared by people who have relationships characterized by trust" (Cohen, 2007, p. 240). Personal relationships carry valuable knowledge, according to Maznevski and Athanassiou (2007), because (a) relationships facilitate locating the source of knowledge, (b) relationships are conduits of tacit knowledge, and (c) relationships provide access to explicit knowledge. Relationships are more than just business contacts. Personal connections make contacts more willing to help (T. H. Davenport, 2005). Dyer and Hatch (2006) studied the role of network knowledge resources in influencing firm performance, found that firms can create advantages by leveraging knowledge assets within networks of relationships.

Barriers to Knowledge Sharing

Riege (2005) gave examples of 36 KS barriers and categorized them into three groups (a) potential individual barriers such as differences in experience, poor communication skills, lack of trust in people, lack of trust in the accuracy and credibility of knowledge, and difference in culture; (b) potential organizational barriers such as lack of leadership, lack of support from corporate culture, knowledge retention is low priority, and size of business is not small enough; and (c) potential technology barriers, such as lack of integration of IT systems, lack of compatibility, reluctance to use IT systems, and lack of communicating advantages of new systems. T. H. Davenport and Prusak (2000) provided the following common frictions of knowledge transfer:

- Lack of trust
- Different cultures, vocabularies, and frames of reference
- Lack of time and meeting places; narrow idea of productive work
- Status and award go to knowledge owners
- Lack of absorptive capacity in recipients
- Belief that knowledge is prerogative of particular groups, not-invented-here syndrome
- Intolerance for mistakes or need for help (p. 97)

Jain, Sandu, and Sidu (2006) conducted a study of a year-long collection of survey responses from 265 participants who work in the business departments of universities and colleges. The authors identified lack of rewards and recognition, lack of time, and lack of formal and informal activities to cultivate KS as the strongest barriers to

KS. Han and Anantatmula (2007) conducted a case study of large IT organizations and found that the two prominent obstacles to KS were (a) employees feel they are underappreciated and their rewards were not comparable to their contribution, and (b) lack of training to make use of available technology. The authors also found that when employees shared their knowledge, there was little loss of personal and perceived threat to job security.

Szulanski (1996) suggested that the major barriers of knowledge transfer within the firm include (a) causal ambiguity due to the tacit nature and the complexity of knowledge, (b) lack of credibility of the source unit because the knowledge has not been proven, (c) lack of motivation on the source or recipient of knowledge, (d) knowledge not perceived as reliable, (e) lack of absorptive capacity on the part of the recipient of knowledge, (f) lack of retentive capacity, (g) barren organizational context, and (h) arduous relationship between the source and recipient. Barriers to KS within an organization can be due to the constraints on building trusting relationships, time constraints and deadline pressures, technology constraints, team leaders constraints, failure to develop a transactive memory system, and cultural constraint (Rosen, Furst, & Blackburn, 2007). Incompatibility between cultures can also be a major barrier to effective KS (Dulaimi, 2007). Hall and Goody (2007) argued that examining cultural constraint as a barrier to KS is insufficient; organizations should investigate the influence of social and political power within the organization when evaluating success and failure in efforts to motivate KS.

Motivation and Knowledge Sharing

Individuals are commonly rewarded for what they know, not what they share (Dalkir, 2005). KS is one form of knowledge exchange. Cross and Prusak (2003) described the exchange of knowledge in organizations as *knowledge market* because such activity is similar to markets for goods and services. Participants in knowledge market believe and expect the transactions will benefit them. According to the authors, for a knowledge market to work at all, KS must be rewarded more than knowledge hoarding. Alavi and Leidner (2002) referenced examples from a management consulting firm and a PSF suggested that an effective way to promote KS is through the reward and incentive mechanism of the organization.

KS is affected by individual motivation which is strongly affected by the social context of social norms and social identity (Kimmerle, Wodzicki, & Cress, 2008). The subjects of motivation, reward, and inventive have been studied by scholars of social and behavioral sciences resulting in the development of many motivational theories, such as hierarchy of need, motivation-hygiene theory, self-determination theory, and expectancy theory.

Motivation Theories

Vroom (1964) defined motivation as "a process governing choice made by persons . . . among alternative forms of voluntary activity" (p. 6). Motivation is the driving force behind individuals' choice to engage or disengage in different activities, and the driving force is built upon individuals' beliefs, values, and goals that relate to their achievement behaviors (Eccles & Wigfield, 2002).

Hierarchy of need. Several scholars observed that humans are motivated by unsatisfied needs. For instance, Maslow (1954) proposed five categories of human needs—physiological, safety and security, belongingness, esteem, and self-actualization—and argued that the satisfaction of higher need is contingent on the lower needs having been met. McGregor (1960) suggested that human needs are organized in a series of levels, from physiological needs to the needs for self-fulfillment, and when the lower level needs are satisfied, the next level of needs become important motivators of behavior. Alderfer (1969) proposed the ERG (existence, relatedness, growth) theory in reaction to Maslow. The author categorized human needs that influence workers' behavior into (a) existence needs—physiological and safety need, (b) relatedness needs—social and external esteem, and (c) growth needs—internal esteem and self-actualization and suggested that the order of the importance of these needs might be different for each individual. Therefore, the motivator for each individual is unique.

Motivation-hygiene theory. Herzberg (1966) classified factors that produce job satisfaction (achievement, recognition, work itself, responsibility, and advancement) as motivators; factors that produce no job satisfaction (company policy and administration, supervision, salary, interpersonal relations, and work conditions) are classified as hygiene. Herzberg argued that the presence of motivators would produce job satisfaction, but their absence would not produce job dissatisfaction. Conversely, the presence of hygiene factors would *not* produce job satisfaction, but their absence would produce job dissatisfaction. Hygiene factors, such as bonuses, status, or salary, may lead to an increase in the use of KS technologies in organizations, but those factors are unlikely to

result in an increased motivation for employees to share knowledge (Hendriks, 1999). According to the author, employees share knowledge because they anticipate recognition, appreciation, promotion, reciprocity, or because of a sense of responsibility, which are all motivators.

Self-determination theory. As a macro theory of human motivation and personality**,** "self-determination is the capacity to choose and to have those choices…be the determinations of one's action" (Deci & Ryan, 1985, p. 38). Similarly, McGregor's (1960) theory Y generalized that employees will exercise self-direction and self-control in the achievement of organizational objectives to which they are committed. Such a "commitment to objectives is a function of the rewards associated with their achievement" (p. 47). This commitment to objectives supports the theory of self-determination.

Expectancy theory. The occurrence of a future or expected event is always dependent on the choice and execution of the correct behavior (Tolman, 1959). Vroom (1964) proposed that expectancy is a person's estimation of the probability that effort will lead to successful outcome; "expectancy is an action-outcome association" (p. 18). Motivation is the product of valence (reward), expectancy (performance), and instrumentality (belief):

$$\text{Valence} \times \text{Expectancy} \times \text{Instrumentality} = \text{Motivation}$$

Vroom argued that employees tend to choose the behaviors they believe will lead to their most desired work-related outcomes. Sharing knowledge may be determined by an employee's perception of the rewards associated with such behavior. Thus, the more

positive outcomes are perceived by an employee to be associated with sharing knowledge, the more inclined an employee will share (Cabrera, Collins, & Salgado, 2006).

Incentives as Motivators

Organizations are more focused on managing knowledge than managing knowledgeable employees, and organizational incentives are often misaligned with the goals of KS (Prusak & Weiss, 2007). From a study on incentives and KS of accounting firms, Wolfe and Loraas (2008) established that firms should monitor their nonmonetary recognition-based incentives to encourage KS. The authors recommended firms to consider making KS an element in employee annual review, and promote a team-based culture.

Fey and Furu (2008), studied 164 foreign-owned subsidiaries located in Finland and China, and found that incentive pays lead to greater KS among different units of the multinational corporation and incentives produce better results of knowledge transfer than control. However, Nan (2008) argued that there is no one-size-fits-all incentive solution to encourage employees to share knowledge; optimization of incentives depends on the level of *intangibility* of the knowledge. From a study using a principal-agent model borrowed from economics, the author found that for (a) knowledge with low level of intangibility, "a target payment scheme is optimal" (p. 101); (b) knowledge with medium level of intangibility, "the optimal incentive solution is a function of management's ability to infer employees' effort from KS results" (p. 101); and (c) knowledge with high level of intangibility, "there is no payment scheme that can be

derived from the principal-agent model to encourage employees to share knowledge" (p. 101). The author recommended that in order to successfully apply any incentive scheme to encourage KS, it is critical to appropriately align the incentive scheme with the level of intangibility of the knowledge.

Subramanian and Soh (2009) found, from a survey of 180 engineers from a software company, that the desire to gain rewards was one of the important motivators for employees to share knowledge, and *centrality* and *power* were important social incentives for employees to increase their intensity of knowledge contribution. Cabrera, Collins, and Salgado (2006) proposed organizations to consider revising their performance appraisal instruments, job assignment, and career policies to align rewards and incentives with KS. Zhang et al. (2008) suggested that incentives to encourage KS should be a step-by-step process; excessive incentives would add to the organizational cost while moderate incentives would not inspire employees' enthusiasm.

Instead of highlighting recognitions and rewards as motivators, Strickler (2006) recommended organizations create conditions to motivate their employees by (a) becoming a values-driven organization where honesty and ethics are expected by co-workers and customers, (b) creating a safe environment for employees to share their ideas, (c) expecting employees to be responsible and accountable, and (d) encouraging employees to continuous improve through constant experimentation. Iyer and Ravindran (2009) argued that the perception of usefulness of the knowledge is more important than incentives in determining if individuals choose to use knowledge.

Knowledge Sharing and Organizational Culture

According to King (2007), culture is believed to affect the knowledge-related behaviors among individuals, teams, and organizational units because culture "influences the determination of which knowledge is appropriate to share, with whom, and when" (p. 226). Motivation, as it relates to changing employees' behavior, is difficult to deal with because it is closely influenced by the cultural norm of an organization (Handzic & Zhou, 2005). Organizational culture is shared basic assumptions emerging from a collection of individuals (who comprise themselves as an organization) and is created through the complex and continuous network of communication among them to satisfy a common goal defined (Keyton, 2005). Many definitions of organizational culture connect to some form of shared meaning, interpretations, values and norms (Alvesson & Sveningsson, 2008). According to Schein (1985), culture exists at three levels. Level 3, the deepest level, consists of the basic assumptions of "relationship to environment, nature of reality, time, and space, nature of human nature, nature of human activity, and nature of human relationships" (p. 22). These assumptions are taken for granted, invisible, and preconscious. Level 2, with a greater level of awareness, consists of values, which are testable in the physical environment and are testable only by social consensus. At Level 1, the most visible, but often not decipherable level, culture is manifested through artifacts and creations, such as technology, art, and visible and audible behavior patterns. Young (2010) suggested six cultural levels senior management can use to maintain or modify existing organizational culture: (1) strategy formulation, (2) authority and

influence, (3) motivation, (4) management control, (5) conflict management, and (6) customer management.

KS in organizations is influenced by organizational culture, according to DeTienne et al. (2004), because it "plays a vital role in the knowledge creation, sharing, and transfer process" (p. 41). Organizational culture can be shaped by two influencers (Wellman, 2009). Evolutionary influencers include (a) industry technology and complexity, (b) organization reaction to technology and complexity, (c) regulatory environment, (d) competition, (e) customers, (f) organization history, and (g) individuals. Whereas, revolutionary influencers consist of (a) technology disruption, (b) ownership change, (c) disasters, and (d) leaders. KS behavior is part of knowledge-related behavior. D. W. DeLong and Fahey (2000) proposed the following four frameworks as diagnostic tools for analyzing how organizational cultures (and subcultures) can influence an organization's knowledge-related behavior: (a) "culture shapes assumptions about which knowledge is important" (p. 116), (b) "culture mediates the relationships between organizational and individual knowledge" (p. 118), (c) "culture creates a context for social interaction" (p. 120), and (d) "culture shapes processes for the creation and adoption of new knowledge" (p.123). Thus, the behavior of KS is greatly affected by culture.

As a subset of organizational culture, the *information culture* of an organization is determined by its mission, history, leadership, employee traits, industry, and national culture and is "shaped by the cognitive and epistemic expectations embedded in the way that tasks are performed and decisions are made" (Choo et al., 2008, p. 802). Leaders of

organizations can foster a knowledge-friendly culture by acknowledging the existence and influence of culture and its role, by having a very clear, holistic, and persistent vision of the culture, and by consciously managing culture (Wellman, 2009). Oliver and Kandadi (2006) identified the following ten major factors affecting knowledge culture in organizations: (a) leadership, (b) organizational structure, (c) evangelization, (d) communities of practice, (e) reward systems, (f) time allocation, (g) business processes management, (h) recruitment, (i) infrastructure, and (j) physical environment.

Jayasingam, Ansari, and Jantan (2010) studied the relationship between top management's social power and KM practice; they found that leaders in knowledge-based organizations need to use more of expert power and less legitimate power in influencing knowledge workers. Organizational culture is recognized as important enablers or inhibitors of KM (Handzic & Zhou, 2005). From a case study, Eskerod and Skriver (2007, March) found that to promote knowledge transfer, organizations must focus on basic assumptions embedded in the organizational culture, and not only on direct knowledge transfer between employees. To optimize the chance of KS success, organizations have to take cultural differences in consideration because people from diverse cultures view motivation differently (Forstenlechner & Lettice, 2007). An unsupportive organizational culture is the biggest obstacle to effective KM (Frappaolo, 2006). Thus, organizational culture is important to successful KS in organizations (Cohen, 2007).

Knowledge-Sharing Culture

The practice of managing and motivating employees to share their knowledge is growing in importance in the existing knowledge-based economy (Wolfe & Loraas, 2008). A KS culture is believed to be beneficial to the organizations because the intellectual capital is vital to creating competitive advantage (Gupta & Govindarajan, 2000). From surveys conducted in three online communities, Yu et al. (2010) found that a KS culture did play a role as a motivator of formalized KS, and fairness and openness significantly affect the sharing culture.

According to Walczak (2005), "Knowledge management is not about managing knowledge, but rather managing and creating corporate culture that facilitates and encourages the sharing, appropriate utilization, and creation of knowledge that enables a corporate strategic competitive advantage" (p. 330). In order to initiate KS culture in an organization, a majority of individual members of the organization must accept and value the culture of KS (Keyton, 2005). However, the author argued, leaders do have the power to influence organizational culture because they control the resources; they can reinforce their assumptions and values, and influence organizational members to follow.

Travica (2005) introduced the concept of *infopolitics* (the power, agendas, and fights/flights that concern organizational information) and *infoculture* (the stable beliefs and behaviors that refer to organizational information and IT). Mixing the elements of information, politics, and trust further complicates the issues of KS culture. For instance, Barachini (2009) found that KS supports the trading process of the business transaction theory during which individuals regard KS as information exchange process and evaluate

information in an asymmetric way. Therefore, according to the author "trust, attitude, leadership or group support is not the sole drivers of successful KS cultures" (p. 108). There are many factors that drive KS in organizations.

Smith et al. (2010) argued that the *KM mindset* is an antecedent to a KS culture. The authors observed that the lack of a KM mindset is due to the absence of anyone within the organization who "can clearly articulate the role and mandate of KM" (p. 118); thus, "focusing KM more clearly is therefore a fundamental step to help others in the organization understand and accept what KM is all about" (p. 118). The authors believed that the KM mindset involves a number of interdependent beliefs and behaviors, such as *integrity*, *formality*, *control*, *transparency*, *sharing*, and *proactiveness*.

In addition to lead by example and to ensure training are provided, Goh and Hooper (2009) proposed that management proactively promote a KS culture by:

- ensuring that guidelines, policies and procedures surrounding knowledge and information sharing are firmly and formulated clearly and promoted proactively;
- changing the reward system to acknowledge knowledge sharing, both individually and in groups, so that the notion that knowledge is power is not seen as an ultimate strength;
- recognizing and judging all input, based on merit rather than personal source, and in doing so, making allowances for mistakes. However, this should be tempered with an emphasis on accuracy; and

- creating times and places for informal exchange of information and knowledge, for instance, mandatory weekly staff luncheons or social meetings after work. (p. 32)

Knowledge Workers

Knowledge workers, a term coined by Drucker (1959), are those who create information, ideas, and concepts that add value and link with occupations that require high-level skills and qualifications (Felstead, Fuller, Jewson, & Unwin, 2009). Due to the ambiguous character of knowledge-intensive work, rhetorical skills become highly significant for the knowledge workers (Alvesson, 2004). According to T. H. Davenport (2005), an organization can distinguish its knowledge workers by (a) judgment and collaboration, (b) knowledge activity, or (c) the types of ideas with which they deal. Furthermore, an organization can differentiate its knowledge workers on (a) cost and scale, (b) process attributes, (c) business criticality, or (d) mobility.

Knowledge work is often created by (a) the increase in the volume of information that "must be collected, applied, and built on for subsequent actions" (p. 12), (b) new knowledge-handling technology, (c) the growing complexity of work (Cortada, 1998). Knowledge work is invisible and based on trust; thus, the work of knowledge workers is difficult to measure (T. H. Davenport, 2005). Ramírez and Nembhard (2004) proposed a knowledge worker productivity measuring taxonomy using the dimensions that they collected from literature review (ordered by frequency of use in current methodologies) (a) quantity, (b) timeliness, (c) cost and/or profitability, (d) autonomy, (e) efficiency, (f) quality, (g) effectiveness, (h) customer satisfaction, (i) innovation/creativity, (j) project

success, (k) responsibility/importance of work, (l) knowledge workers' perception of productivity, and (m) absenteeism. For the benefits of establishing benchmarks to evaluate knowledge worker performance, the authors recommended using these dimensions to create models or methodologies for productivity measurement.

Schou (2007) categorized knowledge work into six roles (a) the inventor, (b) the detective, (c) the documentarist, (d) the consultant, (e) the learnmaster, and (f) the activist. Since different knowledge workers have different skills and preferences, each of them has different knowledge profile. For this reason, Ehin (2008) recommended that knowledge workers should be managed differently than regular workers. Different tasks demand different skills from knowledge workers, and different knowledge profiles demand different management; therefore, management should be trained to manage knowledge workers (Schou, 2007).

The key to knowledge workers' effectiveness and their ability to contribute is to develop extensive and diverse relationships because their most important asset is their relationships with others that support and use their knowledge (Tymon & Stumpf, 2003). Ensign and Hébert (2010) found that knowledge workers might be more innovative the more closely they are connected because proximity and organizational ties facilitate KS.

Knowledge workers value their knowledge; thus, it is natural for them to feel their jobs might be threatened if they relinquish or share their knowledge (T. H. Davenport, 2005). Jayasingam et al. (2010) found that management reward power have no significant influence on knowledge workers. Knowledge workers normally get involved in KM practices for their own interest and intrinsic satisfaction (Gal, 2004).

Knowledge-Intensive Firms

Economists have been labeling firms as capital-intensive or labor-intensive based on the relative importance of capital and labor as firm's production inputs. In a knowledge-intensive firm (KIF), knowledge has more importance than other inputs (Starbuck, 1992). The key features of KIFs are strong knowledge base and emphasis on competence development (Alvesson, 2004). The key driver of KIFs is reputation, which is built from defining and solving their clients' problems through the direct application of expert knowledge of their knowledge workers (Sheehan, 2002). Von Nordenflycht (2010) proposed a taxonomy of four types of KIFs whose diverge degrees of professional service concentration produce different organizational results: technology developers (biotech), neo-PSFs (advertising and management consulting), professional campuses (hospitals), and classic PSFs (law, public accounting, architecture). Professional service firms (PSFs) are one category of KIFs. However, not all KIFs deliver professional services. For example, software development organizations are knowledge intensive, but they do not deliver service directly to their customers.

Professional Service Firms

PSF is generally categorized from KIF based on whether the firm "belongs to the 'true' or acknowledged professions" (Alvesson, 2004, p. 38). The core of activities of PSFs is of an intellectual nature, whereby well-educated, experienced, and qualified employees constitute a very large proportion of the workforce (Alvesson, 2004). PSFs have "three distinctive characteristics—knowledge intensity, low capital intensity, and a professionalized workforce" (von Nordenflycht, 2010, p. 155). The characteristics of

PSFs include (a) more than 50% professional employees, (b) high priority for professional goals, (c) high degree of respect for professional norms, (d) emphasis on creation as well as application of knowledge, and (e) professionals in charge of key decisions and activities (Løwendahl, 2000). According to the author, the types of PSF can be differentiated between the dimensions of (a) repetitive versus ad hoc service delivery, (b) individual versus team-based service delivery, (c) personal or proposal-based sales, or (d) application of existing versus development of new solutions.

Boone, Ganeshan, and Hicks (2008) found that there was a significant association between experience-based knowledge and productivity increases in professional services and the rate of learning increases with increasing experience. Forstenlechner, Lettice, Bourne, and Webb (2007) conducted a study with lawyers (as knowledge workers) of several law firms (as PSFs), and found that interviewed participants "showed strong support for the value of KM to law firm success" (p. 146). The authors concluded that those series of interviews further confirmed the validity of the assumption that KM contributed value to the business. However, Maister (1993) argued that the knowledge and talents of employees may not be significant for some PSFs. The quality of service of some PSFs is mainly contingent upon the firm's ability to organize and run large and long-term projects, which require putting people to work quickly. Some clients see PSFs not only as "providers of competence, but also as resources in pushing" (p. 62) them to get things straight (Alvesson, 2004).

Ko (2010) conducted a study to examine the relationships between trust (specifically benevolence-based and competence-based trust) and KS involving

consultants. The author collected survey data from a total of 80 projects from 71 client organizations and 36 consulting firms, subsequently found that benevolence-based trust played a more important role in affecting KS among consultants than competence-based trust. As a result, the author recommended that consulting firms should consider the importance of developing benevolence-based trust among their consultants to improve the effectiveness of KS that would enhance the success of long-term project engagements.

Knowledge and Knowledge Processes Within Professional Service Firms

The key assets of PSFs are expertise, technical knowledge, and client relationships (T. J. DeLong et al., 2007). Fosstenløkken, Løwendahl, and Revang (2003) found that clients play a crucial role in the knowledge development process of PSFs, because knowledge development comes about as a by-product of PSFs' operational activities of interacting with clients. By learning from their clients, PSFs continually replenish their knowledge (Hsiao, 2008).

Empson (2001) suggested two main types of knowledge that knowledge workers in KIFs are required to utilize (a) technical knowledge, which includes technical knowledge commonly understood and shared by staff, organization-specific knowledge, and personal knowledge acquired through education and experience; and (b) client knowledge, which consists of knowledge of industry-level factors, knowledge of specific organizations, and having a knowledge of and acquaintance with key individuals in specific organizations. Hislop (2005) categorized the key knowledge processes within

KIFs into knowledge creation and application, KS and integration, and knowledge codification.

For PSFs to sustain quality and competitive services, knowledge must flow freely (Wolfe & Loraas, 2008). For knowledge to be of value to the PSFs, knowledge workers need to know where to access it. Criscuolo, Salter, and Sheehan (2007) proposed a solution to make knowledge more visible. Using expert yellow pages, the authors developed a new approach based on co-word analysis (identifying keywords from the body of texts) and proximity analysis (establishing a relationship between two words) to map the knowledge and skills of knowledge workers of PSFs.

Knowledge Management

Jones (2006) defined knowledge management (KM) as: "the process of acquiring knowledge from the organization or another source and turning it into explicit information that the employees can use to transform into their own knowledge allowing them to create and increase organizational knowledge" (p. 117). KM addresses business problems (Tiwana, 2002). KM is different from information management (IM). According to Frappaolo (2006), KM "consists of innovative responses to new opportunities and challenges" (p. 9) while IM "consists of predetermined responses to anticipated stimuli" (p. 9). The lack of clarity of what KM is and does for an organization posts challenges of (a) the uncertainty of the scope and mandate of KM, (b) the value of KM, (c) instilling a KS culture, (d) filling the knowing-doing gap, and (e) marketing KM (Smith et al., 2010). Asimakou (2009) argued that KM takes two distinct, but complementary roles. The first role is about organizing and classifying explicit

knowledge, and the second role is the study of how people communicate and interact in organizations. Thus, KM becomes aligned to the study of organizational culture (Asimakou, 2009).

KM can be employed as a business strategy. Earl (2001) proposed a taxonomy of seven strategies for KM. The first three consists of systems, cartographic, and engineering. They are labeled *technocratic* because those strategies are based on information or management technologies. The fourth strategy, commercial, is labeled *economic* because it is based on revenue creation from the exploitation of knowledge and intellectual capital. The last three—organizational, spatial, and strategic—are labeled *behavioral*. These strategies are based on creating, sharing, and using knowledge as a resource.

From a study on possible mediating the role of KM "in the relationship between organizational culture, structure, strategy, and organizational effectiveness" (p. 763), Zheng, Yang, and McLean (2010) found that (a) KM could be an intervening mechanism between organizational context and organizational effectiveness, (b) KM "can influence organizational effectiveness when it is in alignment with organizational culture, structure, and strategy" (p. 769), and (c) culture has the strongest positive influence on KM. The authors recommended managers to center KM practices "on incorporating culture-building activities to foster an environment that is knowledge-friendly" (p. 769) to accomplish KM success in the organization.

Ibrahim and Reid (2009), from the outcome of their study on how organizations value KM practices, suggested researcher to develop a theoretical framework that

includes both objective and subjective dimensions of KM measurement strategy. As KM is a relatively new field, new concepts and approaches are yet to be articulated and identified, Desouza (2006) recommended researchers to further study the role of KM in the eradication of poverty and the improvement of social welfare. Similarly, Edwards, Ababneh, Hall, and Shaw (2009) proposed taking the KM initiatives out of the business sector and bring them into other contexts where the priority is not profit, but a more social benefit. Chen, Liang, and Lin (2010) argued that "maintaining healthy knowledge ecology is important for the success of KM in an organization" (p. 11). The authors suggested organizations to look at organizational knowledge from an ecological perspective, and proposed a *knowledge ecology model* that examines the interactions among knowledge distribution, knowledge interaction, knowledge competition, and knowledge evolution.

Knowledge Management Systems

Knowledge management systems (KMS) are systems created to facilitate the capture, storage, reuse, and retrieval of knowledge (Jennex, 2007). KMS are multi-faceted, which in addition to technology, encompass broad cultural and organizational issues (Alavi & Leidner, 2002). A KMS provides support for many information functions (Dalkir, 2005), namely:

- Acquiring and indexing, capturing, and archiving.
- Finding and accessing.
- Creating and annotating; combining, coding, and modifying.
- Tracking. (p. 166).

A KMS is capable of making comparisons, analyzing trends, and presenting historical and current knowledge; such capability provides organizations a competitive advantage by giving decision-makers the necessary insight into patterns and trends that impact their domain (Stănescu, Chete, & Giurgiu, 2009). McCall, Arnold, and Sutton (2008) found that KMS users outperform users of traditional reference materials in solving structured problems. The perspective of knowledge and KM determines the focus of a KMS and its process (Prakasan, Sagar, Kumar, Kalyane, & Kumar, 2008). Heier (2004) proposed that KMS can be organizational change drivers. However, Ciganek, Mao, and Srite (2004) found that organizational culture significantly influenced the factors that lead to the acceptance of KMS.

Knowledge Sharing and Information Technology

KM strategy is incomplete without a technology component (Frappaolo, 2006). However, KM "is not directly tied to technology; rather, emerging technologies provide a means of enabling more effective KM" (Alavi & Leidner, 2002, p. 23), which requires a hybrid solution of people and technology (T. H. Davenport & Prusak, 2000). Coakes (2006) recommended organizations to approach KM from the social aspects of knowledge creation, storage, and sharing need in conjunction with technical and to consider people, task, process, and environment (both internal and external) when implementing technology into KM.

Organizations have traditionally used information technology (IT) to enhance the capture, storage, and retrieval of knowledge. However, IT cannot replace direct human interactions in knowledge transfer, but only facilitates knowledge transfer when it

supplements face-to-face interactions (Wellman, 2009). Having more IT does not necessarily mean that the state of information will be improved (T. H. Davenport & Prusak, 2000). Technology cannot make up for an organization whose culture does not support KS practices (Frappaolo, 2006). In addition, employees must make use of the technology, and the technology must fit the tasks it supports (Goodhue & Thomson, 1995).

Bonifacio et al. (2008) presented a four-layer model for IT support of KS. The first layer is IT support at one's desktop because, before knowledge is shared, one has to first manage individual knowledge. The next layer is centralized sharing of knowledge, which is facilitated by server-based software systems organized around folder structures, taxonomies, or metadata. The third layer is decentralized IT support of KS, the objective of which is to alleviate knowledge server bottleneck through peer-to-peer exchange of individual expertise. The fourth layer is evolutionary model of KS by means of IT communication validation process network structure. Thierauf and Hoctor (2006) advocated organizations to employ newer business models and computer software and technique for developing new opportunities and solving problems. An expert system—" an interactive system that responds to questions, asks for clarification, makes recommendations, and generally aids in the decision-making process" (p. 272)—is an example of one of the innovative IT tools for managing knowledge (Hauer, 2009). Computer software applications are adopted by organizations to facilitate KS (T. H. Davenport, 2005), for instance, expertise directory applications (such as digital yellow

pages), social networking applications (such as Facebook and Twitter), and instant messaging.

The Internet offers many online communication channels, such as e-mail listservs, electronic bulletin boards, and social network websites. Online KS behavior has become more common (Yu et al., 2010). CoPs organized and hosted over the Internet have been developing into *networks of practice*, which is a form of virtual community, which is described by Nordan, Abidin, Mahmood, and Arshad (2009) as digital social networks. Advancement in IT makes available "electronic tools that enable anyone to publish and access information, collaborate on a common effort, or build relationships" (p. 4), which are known as social media (Jue et al., 2010). According to the authors, social media tools facilitate knowledge creation, and many organizations are using such media to improve performance.

Knowledge repository is one of the common adopted IT applications that support KM. However, knowledge repositories are "merely intermediate storage points for information en route between people's heads" (Frappaolo, 2006, p. 9). Meloche, Hasan, Willis, Pfaff, and Qi (2009) recommended organizations to consider installing *wiki* (an interlinked web pages with cross links between pages where each page can be edited) as knowledge repository, where ideas can be captured and updated by every employee. To ensure the usefulness and credibility of knowledge, some forms of filtering and validating prior to publication are necessary. Durcikova and Gray (2009) found that an overly rigorous validating process discourages contribution from employees, and suggested that the review processes to be transparent and developmentally oriented.

Intellectual Property Rights

Intellectual capital (organizational knowledge, competence, and intellectual property, such as brands, reputations, as well as customer relationships) is a firm's source of competitive advantage (Turner & Minonne, 2010; Vargas-Hernández & Noruzi, 2010). To sustain competitive advantage, Vargas-Hernández and Noruzi (2010) recommended organizations to incorporate intellectual capital management (ICM) to their KMS. ICM helps organizations define key performance indicators to measure the impact and the benefits of applying KM practices.

Not all organizational knowledge should be shared generously. Operational knowledge, such as proprietary information, is becoming the true sources of an organization's competitive advantage (Turner & Minonne, 2010). Organizational proprietary information is protected by intellectual property rights (IPRs). Therefore, the public should not expect such information is available freely.

Some knowledge assets are shared freely. According to Chou and Passerini (2009), knowledge assets, in general, have the property of non-rivalry in consumption and, in some cases, have the property of non-excludability to access; such knowledge assets are called public goods. However, the authors argued, when knowledge goods can freely be accessed by anyone, the property of knowledge as a form of public good may suffer from the typical free-rider problem that can lead to its underproduction. A stronger regulation of IPRs is one solution that may increase the incentive of knowledge creation, but too strong IPR ruled may limit the flow of knowledge and hinder innovation.

Knowledge Sharing and Organizational Competitiveness

The source of sustainable competitive advantage of a corporation lies in its knowledge (Riesenherger, 1998). Working knowledge is an important corporate asset, which generates increasing returns and continuing advantages; "knowledge assets increase with use: ideas breed new ideas, and shared knowledge stays with the giver while it enriches the receiver" (T. H. Davenport & Prusak, 2000, p. 17). KS behavior is positively related to firm innovation, which is essential to the enhancement of the firm's relative competitive advantage (Liao, 2006). Firms that encourage employees to share knowledge and use shared knowledge to perform important tasks achieve competitive advantage (Grant, 1996; Nonaka & Takeuchi, 1995). In the management consulting industry, *signal of competence* can make a significant difference to the likelihood of getting a new client contract (Haas & Hansen, 2007).

Walczak (2005) proposed a concept of a KS management structure, which is organized around knowledge-based teams of knowledge workers to transform an organization into a knowledge-based organization. Such a "structure gives managers a practical way to approach cross-organizational knowledge sharing" (p. 330) that enables maximization of competitive advantage. Projecting the future, Jue, Marr, and Kassotakis (2010) proposed that "organizations can use the valuable knowledge to their competitive advantage" (p. 182) and the successful ones "are those organizations that are using the knowledge to improve their products and service offerings" (p. 183). The author suggested that shared knowledge would become a new *currency* because knowledge would be the medium of exchange in the *knowledge market*.

Current Literature Gap

Ma and Yu (2010) reviewed 1,230 journal articles and books on KM published between 1998 and 2007. The majority of literature centered on the themes of essential of KM, knowledge-based theory on organization and innovation, and organization learning and strategy of KM. The authors concluded that future research should examine the relationship between KM research and industry practices. This research study will fill the gap of identifying the relationship between KS (a subset of KM) and practices of PSFs (a subset of service providing industry). This research study may provide implications to professional applications in the area of KS and competitive advantage within the service industry, in general, and PSFs within KIFs in particular.

Summary of Chapter 2

The review of literature of this chapter begins with establishing a literature search strategy. Since this research study explores the KS approaches from a specific PSF, it is necessary to include recognition of strategies that acknowledge behavior of how knowledge is shared and managed. The basic concept of information and characteristics of explicit and tacit knowledge are reviewed before narrowing to the areas of knowledge creation and different types of KS behavior. Trust, relationships, barriers, motivation, and organizational culture are explored to gain an understanding how they influence KS behavior. KS culture is also examined. This is followed by seeking literature on current approaches on KM, KMS, and IT. Knowledge workers, as well as the structure of KIFs and PSFs are reviewed in order to recognize how organizations relate to managing knowledge and competitive advantage. The objective of the literature review is to have a

thorough understanding of the fundamental theory and current findings on the behavioral side of KM.

Chapter 3 begins with describing the research design and approach of the study followed by presenting the research problem and the research questions. Chapter 3 includes explaining the process of recruitment of participants, as well as the collection and analysis of data using case study research method. Protection of human participants and dissemination of findings will also be covered.

Chapter 3: Research Method

Organizations generally do not manage knowledge well because organizations behave much like individuals, putting to use less than what they know (Wellman, 2009). Knowledge management (KM) "is not a technology" (Frappaolo, 2006, p. 8). To fully understand KM, this research study used an interview format to investigate the approach of KM from the organizational and cultural perspectives with emphasis on the behavior of knowledge management (KS). Therefore, the selected research design is qualitative.

Rationale for Qualitative Methods

Qualitative research methods of data generation offer the flexibility and sensitivity to the social context in which data are produced (Berg, 2007). Through these research methods, it is possible to gain an understanding of how participants interact with each other and how they interpret those interactions. Alasuutari (2010) argued that "qualitative research and its interest in subjectivity and experience is an adequate response to the growing demand to understand different microcultures of values and meanings" (p. 17). Lewis (2003) observed that the key types of generated data in qualitative research are focus groups and in-depth interviews. Thus, the qualitative research methods of focus groups and in-depth interviews were used to facilitate data-gathering relating to KS behavior in this research study.

Research Design and Approach

The goal of this research study was to examine the relationship between KS and competitiveness in professional service firms (PSFs). An in-depth case study of interviewing and conducting focus groups of knowledge workers and managers from a

single PSF were chosen. According to Yin (2009), the case study method allows researchers "to retain the holistic and meaningful characteristics of real-life events" (p. 4). Other research methods, such as phenomenological or ethnographic study, may not provide the researcher with a wide range of understanding the concepts and are inappropriate for the research of the behavioral aspects of KM.

Theoretical Foundations of the Research Study

The methodology chosen for this research study was a case study. Case study was defined by Gerring (2004) as, "an intensive study of a single unit for the purpose of understanding a larger class of (similar) units" (p. 342). This was supported by Hancock and Algozzine (2006):

> Doing case study research means determining what we know about a research question to establish its importance and the need for further research about it, to identify strengths and weaknesses of previous research, and to identify areas of sufficient and insufficient study as well as methods used to study it. (p. 27)

The strength of a case study, according to Baxter and Jack (2008), is that it provides an excellent opportunity for the researcher to gain insight into a case through data gathered from a multiplicity of sources and clarification through data analysis. A case study, according to Darke, Shanks, and Broadbent (1998), also has the strength of enabling the capture and understanding of context. Additionally, case study research can be used to achieve a variety of research objectives using diverse data collection and analysis methods. Eisenhardt and Graebner (2007) acknowledged that case studies are often among the most interesting articles to read.

There are many confusions and misunderstandings about the definition of case study research (Flyvbjerg, 2006; Gerring, 2007; Verschuren, 2003). There are distinct differences between case research and case study (Verschuren, 2003). Verschuren recommended the term case research instead of case study because case research "enables the researcher to gather data from a variety of sources and to converge the data to illuminate the case" (p. 556). Creswell (2007) described case study research as the study of a particular issue that is examined through one or more cases within a bounded system, such as a setting and a context. Willis (2007) suggested that case studies are "about real people and real situations … rely on inductive reasoning … illuminate the reader's understanding of the phenomenon under study" (p. 239). The author outlines three specific attributes of case study research (a) case study allows gathering rich, detailed data in an authentic setting; (b) case study supports the idea that much of what we can know about human behavior is best understood as lived experience in the social context; and (c) unlike experimental research, case study can be carried out without predetermined hypotheses and objectives. A case study is field research that examines a single social phenomenon or unit of analysis (Singleton & Straits, 2005). "The key characteristic of case studies is that the social unit selected is a single example of the many cases that make up the type of unit in question" (Payne & Payne, 2005, p. 31). Yin (2009) defined case study as an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context. According to Yin (2009), the case study inquiry:

- Copes with the technically distinctive situation in which there will be many more variables of interest that data points, and as one result,

- Relies on multiple sources of evidence, with data needing to converge in a triangulating fashion and as another result,
- Benefits from the prior development of theoretical propositions to guide data collection and analysis (p. 18).

In a case study, various kinds of research methods and procedures are used for gaining insight in one particular case (Verschuren, 2003). However, case study is more than merely conducting research on a single individual or situation; it enables the researcher to answer *how* and *why* questions (Baxter & Jack, 2008). Woodside and Wilson (2003, p. 493) described case study research as "inquiry focusing on describing, understanding, predicting, and/or controlling the individual (i.e., process, animal, person, household, organization, group, industry, culture, or nationality)". Case study has been viewed as a paradigmatic bridge because it is not assigned to a fixed ontological, epistemological, or methodological position (Luck, Jackson, & Usher, 2006). Merriam (2009) advised that case studies are not to be confused with case work, case method, case history, or case record.

Some scholars argued that case study is a research method. For example, Brown (1998) had the following remarks on case study as a research method:

> The more one examines the case study as a research vehicle, the clearer it becomes that the case study is not a 'soft option', which does not prevent it from being admirably suited to those researchers who are prepared to call into play all their intellectual capacities in order to make their contributions. (p. S94)

Other scholars argued that case study is an approach. Rosenberg and Yates (2007) proposed that in order to understand the nature of case study research, it was practical to conceptualize case study as an approach to research rather than as a methodology.

Flyvbjerg (2006) gave examples of five misunderstandings that affect the theory, reliability, and validity of case study (a) general, theoretical (context-independent) knowledge is more valuable than concrete, practical (context-dependent) knowledge; (b) one cannot generalize on the basis of an individual case; (c) the case study is most useful for generating hypotheses, whereas other methods are more suitable for hypotheses testing and theory building; (d) the case study contains a bias toward verification; and (e) it is often difficult to summarize and develop general propositions and theories on the basis of specific case studies. Creswell (2007) and Stake (2005) suggested the following process in carrying out case study research: identify the case or cases, collect the data, analyze the data, provide a detailed explanation of the case, and report the meaning of the case.

Choosing Case Study Research

Case study research examines a single social phenomenon or unit of analysis and uses qualitative data analysis (Singleton & Straits, 2005). Although phenomenological and ethnographic are qualitative methods, they were not used in this research study because a phenomenological study focuses only on examining the participants' perspectives and their views of social realities (Leedy & Ormrod, 2010); and according to Abril (2007), "ethnographic research might not be a suitable research design for knowledge management in an organizational environment" (p. 140). In case study, the

researcher examines a particular person, program, or event in depth while, in ethnography, the researcher examines an entire group (Leedy & Ormrod, 2010). For PSFs, the examination of an entire group is not practical. The methods of data collection of case study are through observations, interviews, and written documents. Willis (2007) acknowledged the importance of finding commonalities and similarities in the data in order to seek "a full, rich understanding of the context they are studying" (p. 240) because the methods of data analysis for case study are categorization and interpretation of data in terms of common themes, which are synthesized into an overall portrait of the case.

A case study is an intensive research of a single unit of study (of anything) for the purpose of understanding a larger class of similar units (Gerring, 2004). According to Leedy and Ormrod (2010), the purpose of case study is to understand one person or situation in depth. The focus of case study is one case or a few cases within a natural setting. The success of case studies begins with the skills of the researcher (who is the case study investigator). Yin (2009) listed the following commonly required case study skills: an investigator should be able to ask good questions and interpret the answer, an investigator should be a good listener, an investigator should be adaptive and flexible, an investigator must have a firm grasp of the issues being studied, and an investigator should be unbiased by preconceived notions. Since each case study is unique, the success of case studies depend on the preparation and training of the case study investigator for a specific case study (Yin, 2009). Preparation includes minimizing risks to participants and getting approval from Institutional Review Board (IRB).

To ensure the successful use of case studies, Yin's (2009) characteristics of an exemplary case study are considered—a case study must (a) be significant, (b) be complete, (c) consider alternative perspectives, (d) display sufficient evidence, and (e) be composed in an engaging manner. Any generalizations from the findings of the case study must have further support from other studies, such as from additional case studies, other kinds of qualitative, or experimental research (Leedy & Ormrod, 2010). Researchers of case studies must look for convergence of the data (Leedy & Ormrod, 2010). This can be accomplished by using multiple sources of information (Yin, 2009) to support the same conclusion, a process also known as triangulation.

Key informants are critical to the success of a case study (Yin, 2009) because "such persons provide the case study investigator with insights into a matter and also can initiate access to corroboratory or contrary sources of evidence" (p. 107). An informant is a member with whom the researcher develops a relationship and who is totally familiar with the culture and is in a position to witness significant events (Neuman, 2007). Stake (2005) proposed the following conceptual responsibilities of the qualitative case research, which, in essence, are the foundation to ensure the successful use of case studies:

- Bonding the case, conceptualizing the object of study;
- Selecting phenomena, themes, or issues (i.e., the research questions to emphasize);
- Seeking patterns of data to develop the issues;
- Triangulating key observations and bases for interpretation;
- Selecting alternative interpretations to pursue; and

- Developing assertions or generalization about the case. (p. 459-460)

David (2007) recommended the following steps to ensure the successful use of case studies: (a) start with the problem with a clear objective, (b) define the unit of analysis and data collection, (c) link the results logically to the objectives, (d) conclude and interpret the findings in the particular context and in the larger context of the scientific literature on the topic.

Focus Groups

Focus groups—one of the most widely used research tools within case methodology (Stewart, Shamdasani, & Rook, 2007) were used in this research study to collect data. The focus group method is also known as group interviewing (Babbie, 2004). The planning elements that are critical to providing a foundation for successful focus groups are (a) building relationships with key community members, (b) scheduling focus groups in advance, (c) developing multiple advocates for the project, (d) providing an interpreter to maintain the team's independent perspective, and (e) identifying a location that minimizes burden on participants and maximizes participation (Willgerodt, 2003).

The key features of the focus group include: data generated by interaction between group participants, participants present their own views and experience, but they also hear from other people, and "as the discussion progresses, individual response becomes sharpened and refined, and moves to a deeper and more considered level" (Finch & Lewis, 2003, p. 171). The focus group research project will benefit by

acknowledging individual differences and interpersonal factors that are likely to affect a group's behavior dynamics (Stewart et al., 2007).

There are three basic uses for focus groups in research according to Morgan (1997). First, they are used as a self-contained method as the principal source of data. Second, they are used as a supplementary source of data. Third, they are used in multimethod studies that combine two or more means of gathering data. Brod, Tesler, and Christensen (2009) suggested that "a focus group should be viewed as a temporary community of people with some similar characteristics who come together for a brief period of time to discuss that similarity" (p. 1267). Themes can be developed from the observation of the similar characteristics of people in the focus group.

Focus groups offer a better understanding of the group dynamics that affect individual perceptions, information processing, and decision making (Stewart et al., 2007). Focus group interviewing gives participants more time to reflect and to recall experiences, "especially in response to other group members whose comments can trigger recollection and reflection that can result in the modification or amplification of earlier thoughts and commentary" (Lofland, Snow, Anderson, & Lofland, 2006, p. 20). Morgan (1997) found that focus groups provide a useful starting point for subsequent individual interviews that involve unfamiliar topics or informants, and group discussions provide direct evidence about similarities and differences in the participants' opinions. In order to ensure participants' internal confidentiality, Tolich (2009) recommended the researcher to establish the ground rules, in the initial minutes of the focus group, to

remind group members not to repeat other participants' disclosures to persons outside of the group.

In-Depth Qualitative Interview

An integral part of the focus group is to choose individuals to participate in in-depth interviews. The purpose of the interview process is to generate new information and confirm or deny known information (Brod et al., 2009). These interviews are used specifically to glean new knowledge and verify information from individuals in the focus groups. Roland and Wicks (2009) found that the success of a research agenda "will depend upon the willingness of a diverse group of participants to share personal beliefs and doubts, struggles and victories, joys and fears" (p. 262). Through an interview, the researcher can understand experiences and reconstruct events (Rubin & Rubin, 2005).

In-depth qualitative interviews are normally flexible and exploratory in nature (Patton, 2002). Legard, Keegan, and Ward (2003) suggested that the in-depth interview is intended to combine structure with flexibility; it is interactive in nature and the researcher uses a range of probes to achieve depth of an answer. They divided an in-depth interview process into six stages: Stage 1, *arrival,* is when the interview effectively begins. Stage 2, *introducing the research,* is the stage at which business begins. Stage 3, *beginning the interview,* is the stage at which background information is collected. Stage 4, *during the interview,* is the stage at which the researcher is guiding the interviewee through the key themes of the interview. Stage 5, *ending the interview,* is the stage at which the researcher signals the approach of the end of the interview and checks if there is any unfinished business. Stage 6, *after the interview,* is the stage at

which the researcher thanks the interviewee and reassures the interviewee of the confidentiality regarding the use of the interview data. Patton (2002) recommended that a qualitative interview should be open-ended, neutral, sensitive, and clear to the interviewee. Individual interviews and focus groups should be viewed as complementary because both techniques are valid and necessary techniques for collecting qualitative data and may provide different information (Brod et al., 2009).

Reliability and Validity of Qualitative Research

"Reliability is concerned with how accurately any variable is measured, while validity is concerned with determining whether a particular form of measurement actually measures the variable it claims to" (N. King & Horrocks, 2010, p. 158). In qualitative research design, reliability "refers more to the accuracy of the researcher's description of the research site and description than with his or her interpretation of what the findings mean or how they relate to other research and theory" (Bogdan & Biklen, 2007, p. 274). According to N. King and Horrocks (2010), reliability may not be an issue in qualitative research because data collection is unique to the individual study. Singleton and Straits (2005) discussed the qualitative approach to research as achieving "an insider's view of reality" (p. 308). Therefore, evaluating the validity of qualitative research design through participants' views is specific to their own interpretation or information. This is supported by Seidman (2006), who stated that the consistency of each interview with the participants results in trustworthiness of the data. This concept of trustworthiness validates the data. The variety and flexibility of discussions and interpretations are determined by the individual participants in the study.

Qualitative research design may not need to be generalized because the concept of validity, according to Hesse-Biber and Leavy (2011), is subject to debate. In addition, Hesse-Biber and Leavy described the process of triangulation as a method to validate qualitative research. According to Bogdan and Biklen (2007), the use of variety of sources supports the reliability of the data because many sources are better a single source. As a process of triangulation, this research study used multiple sources of data, such as transcribed interviews, field notes, and any handouts that the knowledge workers believe will support their explanation to address the research questions.

The Process of the Research Study

The process of this research study began with identifying a PSF based on the assumptions on how knowledge workers of the selected organization use and share knowledge. A management consulting firm was chosen because the research questions are directly related to understanding PSFs and the targeted management consulting firm is a PSF.

Background of the Selected Organization

This study was conducted in a management consulting firm located in California. This organization was founded thirty years ago. It currently has presence throughout the world with more than 250 employees. Most of its knowledge workers possess PhDs or other advanced degrees in related fields. The mission of this organization is to empower people to acknowledge their own strengths in making a difference in the workplace. Consequently, people are contributing to the advancement of social change throughout

the world. As part of management consulting, this organization also provides long-lasting behavioral change solutions.

The person in charge was contacted and presented with the goal of the research. Upon positive response through a signed letter of cooperation, this individual was requested to help recruit the appropriate participants for the focus groups. An IRB application was submitted to seek approval prior to conducting the research.

Recruitment

The person in charge of the selected organization, who has background information of all employees with their knowledge base, assisted in the recruitment of the research participants for the study. Research questions were discussed with this individual to ensure a clear understanding of the direction of this research study. This individual's accurate perception of the research question was prominent in the selection of the participants. For this research study, a purposeful-sample technique was used to recruit research participants. Patton (2002) defined purposeful samples as those from which the researcher can learn much about issues of importance to the purpose of the study. The main consideration is minimizing bias rather than achieving generalizability (Morgan, 1997); purposeful samples need to be carefully selected (Guest, Bunce, & Johnson, 2006). Participants recruited for this research study have an in-depth awareness on attitudes towards KS and on the difference between information and knowledge.

Morse (2000) argued that estimating the number of participants in a study depends on the quality of data, the scope of the study, the nature of the topic, the amount of useful information obtained from each participant, the number of interviews per

participant, the use of shadowed data, and the qualitative method and study design used. Therefore, the number of participants in the study will be determined through the recommendation of the individual in charge of the selected organization.

Recruitment for Focus Groups

Three focus groups were used in this research study. The first focus group consisted of managers; the second focus group consisted of knowledge workers; and the third focus group consisted of the combination of both the first and the second groups. The individual in charge of the firm with extensive background information of managers and knowledge workers assisted in the recruitment of participants in the first and second focus groups. Knowledge workers generally interact with each other within the firm, with clients, and with peers of other firms. One knowledge worker and one manager were selected from each of the three pools, which were comprised of employees who had experience interacting with colleagues, with clients, and with peers. Thus, with the agreement of the individual in charge of the selected organization, the selected number of participants for this research study was six. Once the individuals were approached, permission was requested for participation in the study by having them sign the consent form. Each participant was given a signed copy of the confidentiality agreement.

Recruitment for Individual Interviews

Recruitment for individual interviews was dependent on responses from the focus groups. When there were questions that need more clarification or details, participants in the focus group were requested to participate in second and possibly subsequent interviews. Selecting participants were very specific and only involved a small number

of participants based on their first responses to the research questions. This resulted in interviewing all or just a few participants. The objective of the individual interview was to clarify information from the original focus group discussions (Bogdan & Biklen, 2007).

A Pilot Study of the Interviewing Process

For quantitative research, a pilot study is generally conducted to verify the instrument (Creswell, 2009); whereas in qualitative research, a pilot study is optional (Bogdan & Biklen, 2007). Qualitative study is unique to individual situations related to the background of the study; a pilot study of the research questions may not be applicable. However, the exploratory process of conducting a practice interview is recommended in order to learn the effectiveness of the research structure (Seidman, 2006). As a prerequisite for conducting the actual qualitative research study, the researcher should perform a rehearsal practice of the interview in order to become familiar with the interviewing process (R. Bogdan, personal communication, September 10, 2010). Therefore, a pilot study of the interviewing process was conducted for this research study before the actual in-depth interviewing of the participants. The pilot study consisted of separate interviews with two knowledge workers (an accounting firm owner and an educator). During the pilot study, the interview process and the interview questions were explained and presented to the interviewees. The objective of the pilot study was to try out the interviewing design as suggested by Seidman (2006).

Data Collection

Data were collected using face-to-face interviewing with three knowledge workers. The goal was to understand their behavior regarding KS to identify phenomena as they are perceived by knowledge workers. Data were also collected using face-to-face interviewing with three managers to identify their attitude toward the rewards system regarding KS of the firm. The participants were interviewed and the data collected were in the form of transcriptions. In order to maintain accuracy of the data, focus group discussion and in-depth interviews were audio recorded. Brod et al. (2009) recommended that "interviews should be transcribed verbatim, without editing to summarize or correct grammar and syntax, and should clearly indicate unintelligible speech" (p. 1269). The research questions were the impetus for discussions on subject matters that were neither contradictory nor controversial. For that reason, putting together procedures for dealing with discrepant cases was not necessary.

The Role of the Researcher

Parrillo (2005) divided research observation into three categories (a) structured observation—laboratory, field, and natural; (b) surveys—questionnaires and interviews; and (c) naturalistic observation—case study, detached observation, and participant observation. In-depth interviewing is one form of naturalistic research. The researcher who conducts the interview is considered a naturalistic investigator. Lofland et al. (2006) defined naturalistic investigator as "one who does not understand" (p. 69). They recommended that, during the in-depth interview, the researcher assumes the role of *socially acceptable incompetent* because "in being viewed as relatively incompetent

(although otherwise cordial and easy to get along with), the investigator easily assumes the role of one who is to be taught" (p. 69). The researcher should avoid any undue influence on the outcome of the study.

The researcher is likely to be accepted by the participant and is "in a good position to keep the flow of information coming smoothly" (Lofland et al., 2006, p. 70). In addition, the researcher has to seen as a person who can be trusted to report fairly and informed enough to pose meaningful questions (Rubin & Rubin, 2005). The researcher should conduct the interview, progressing "from questions about concrete situations to more abstract and interpretive questions that probe an informants' experience and interpretation of events" (Singleton & Straits, 2005, p. 320). The role of the researcher during the focus group discussions is to moderate or to facilitate the discussion as an interested respondent (Stewart et al., 2007).

Preparation for the Focus Group

The three main factors that are crucial in preparing for the focus groups are ethical concerns, budget issues, and time constraints (Morgan, 1997). Therefore, it is important to arrange a convenient time and a suitable location for the focus group. Time was scheduled in advance and room availability was confirmed prior to the gathering. All equipment, such as video and audio recorders, that was used during the interview was tested prior to the day of conducting the focus group.

In this study, background information of the participants was collected and studied before conducting the focus group. Questions were carefully selected and phrased in advance to bring out maximum responses by all participants; broad and

narrow questions were listed in advance as discussed by Beyea and Nicoll (2000). Krueger and Casey (2000) recommended the following preparation before the focus group gathering: (a) set the meeting dates, time, and location; (b) make personal contacts with potential participants; (c) send a personalized follow-up letter; and (d) make a reminder phone contact. Everything should be set up and ready for the focus group before the first participant arrives.

The Focus Group Process

Research questions were given at the beginning of the focus group discussion. The agenda for the discussion should grow directly from the research questions which are the impetus for the research (Stewart et al., 2007). Krueger and Casey (2000) recommended starting the focus group with self-introductions, welcome, the overview of the topic, and the ground rules before the first question.

Finch and Lewis (2003) divided the focus group process into five stages. Stage 1, scene setting and ground rule, is the stage when the researcher welcomes participants and introduces the outline of the research topic, background information, and the purpose of the study. Stage 2, individual introductions, is the stage when the researcher asks the group to introduce themselves. Stage 3, the opening topic, is the stage when the researcher starts the general discussion of the topic. Stage 4, discussions, is the stage when the researcher actively listens and observes while keeping mental notes of what is being said. The researcher probes both the group, as well as individual members. Stage 5, ending the discussion, is the stage when the dialogue between members finishes on a positive and completed note, as well as reaffirms confidentiality.

Individual Participant Follow-up Interview

The transcripts from the focus group were reviewed to search for terms and expressions that required clarification. As follow-up interview inquiries, personalized e-mails were sent to the individual participants. Kvale and Svend (2009) illustrated the following seven stages of an interview inquiry: thematizing—formulate the purpose and conception of the theme, designing—plan the design with regard to obtaining the intended knowledge, interviewing—conduct the interview based on the interview guide, transcribing—prepare the interview material for analysis, analyzing—decide which modes of analysis are appropriate, verifying—ascertain the validity, reliability, and generalizability of the findings, and reporting—communicating the findings in a readable product.

The Interview Process

Berg (2007) defined interviewing as a conversation with the purpose of gathering information. Throughout the interview process, the main task is to ask the actual questions in an unbiased manner (Yin, 2009). The interview is unstructured, which is more like a conversation. The interviewer's question should be brief and simple and the interviewer should actively listen to what the interviewee says (Kvale & Svend, 2009).

Data Analysis

Qualitative research design includes the process of corroboration of data through cross-verification for validity of the results. Therefore, in addition to the transcribed interview, field notes and artifacts were used to assist in double-checking the data. The

information collected from the focus group and in-depth interviews was raw data, which needed to be processed and analyzed.

Data Coding Process

Coding is the fundamental analytic process used to develop a theoretical conceptualization from the data (Brod et al., 2009). In qualitative research, a code is a word or short phrase that assigns an attribute for a portion of language-based data (Saldaña, 2009). To codify is to arrange objects in a systematic order, to make them part of a classification, or to categorize (Saldaña, 2009).

Bogdan and Biklen (2007) introduced the concept of developing color-coding categories as a process of organizing the transcription for data analysis and interpretation. The coding process began when all the interviews were transcribed. The transcripts were reviewed several times to look for similarity and commonalities among the research participants. The commonalities were identified through key words and key concepts. Concepts from the individuals' transcriptions were interpreted for different meaning. Literal meanings were carefully avoided. Once the phrases of the words were common among all the participants, they were screened to determine whether the phrases were global or specific. The generality of the phrases or words then became categories; the details became properties. Sometimes the chosen category evolved as a property or a property evolved as a category. The entire process was an evolution of data collection. In order to enhance the efficiency and accuracy of the coding process, the qualitative research computer program NVivo 9 was used for data analysis.

After a category was identified, abbreviations were assigned to the category and a random color was chosen to highlight that category. The category was defined using the words or phrases from the research participants. Each individual property under that category was double-color coded to include the color of the category and an additional different color for the property.

For example, from the transcripts a word or a set of words were identified as a category named *KS environment*, which was abbreviated as *KE* and color coded Red. Under the category of *KE*, *supportive openness* was identified, and was abbreviated as *SO* and highlighted with red and green. The property was then defined using the words or phrases captured from the focus groups and interviews. Following each definition of the property was the direct transcriptions from each participant who supported that property. The transcriptions became the direct evidence for justifying the development of each property and category. This is a similar process to quantitative analysis, which uses the statistical significance as acceptance or rejection of the hypothesis.

The categories and properties then substantiated the research questions. The purpose of the study was to address the research question and investigate the underpinning concepts. The focus group and in-depth interviews were the foundation to establish how the findings related to the research questions. This process was created through the evolution of categories and properties.

Protection of Human Participants

To ensure all ethical practices regarding *respect for persons*, *beneficence*, and *justice* were followed closely, this research study was approved by Walden University's

IRB (approval number 10-29-10-0335129) prior to the initial contact with any research participant. Before the initial interview, each participant was asked to read and sign the consent form. This consent form included: what research participants are being asked, by whom, and for what purpose, risks and vulnerability, right to participate or not, rights of review and withdrawal from the process, and dissemination (Seidman, 2006). Each research participant was also presented with a copy of the confidentiality agreement. In order to maintain confidentiality and protect the identity of the organization and research participants on this dissertation, as well as any subsequent and future published documents and reports relating to this research, the organization's and participants' names were replaced with fictitious names.

The highest level of data security was enforced to prevent unauthorized access to collected data because such data was in digital format. According to Evans and Combs (2008), digitalization of participant data is placing greater pressure for the researcher to ensure anonymity and confidentiality. This is due to the vulnerability of IT data security. Thus, it is essential that all digital files are encrypted and password protected. As an additional security protection, after the completion of the research, data was removed from the internal hard drive of the computer and transferred over to external digital storage media. These media will be stored in a locked cabinet for five years. After five years, data will be disposed of by physical destruction of the hard drives, CDs, and any flash drives that contain the digital data files. Additionally, any paper documents and notes related to the research will be shredded after five years.

Dissemination of Findings

Results of findings will first be disseminated to the management of the selected case study organization of this research study via a presentation. This will be followed by presentations to research participants and community stakeholders. Community stakeholders include other knowledge-intensive firms, which utilize specialized knowledge to deliver professional services. Recommendations for future research as the result of the findings will also be presented to the academia, academic conferences, individual management consultants, and all interested PSFs.

Summary of Chapter 3

Qualitative methods, research design and approach were discussed in this chapter. The theoretical foundations of case study as a research methodology were examined. To facilitate data-gathering relating to KS behavior in this research study, the rationale for choosing case study research and the specific inclusion of focus groups, as well as individual in-depth interviews were presented. The research problem, the process for data collection, and the role of the researcher were also described in this chapter. Specific directions on data coding and how each of the properties and categories were generated from the transcriptions were presented. These components were an integral part of the research methodology. In addition, an explanation of the protection of human participants, including the consent form and confidentiality agreement, was covered. Dissimilation of finding was also explored.

In chapter 4, the process of data collection and data coding are presented. The evolution of the categories and properties resulting from the analysis of data are also

described in chapter 4. Tables are included in this chapter showing excerpts of transcriptions that sustain the categories and properties.

Chapter 4: Results

This study focused on the behavioral aspect of knowledge management (KM). The purpose of this research was to study the mindset of knowledge workers on knowledge sharing (KS) in their environment. It examined how managers and knowledge workers of one professional service firm (PSF) perceived (a) the relationship between KS and the effectiveness of managing organizational knowledge, and (b) whether sharing knowledge would lead to enhanced competitive advantage. This study used focus group discussions to answer the following two research questions: (a) How do knowledge workers describe the parameters and conditions of KS, and (b) What is the relationship between KS and the competitiveness of PSFs?

This chapter explains how the data were collected, coded, and analyzed. Five categories evolved from the study (a) spiritual essence of business; (b) believability and openness; (c) whole brain learning; (d) ethical responsibility; and (e) connectivity. These categories represent the practice of KS within the PSF.

Data Collection

The first step of the data collection process was audiotaping the dialogue of three focus groups (a) a manager focus group of four participants, (b) a knowledge worker focus group of three participants, and (c) a combined focus group, which consisted of these seven participants. Each was conducted for an hour at the office of the PSF. Field notes were taken to record impressions. The following interview questions were presented to the first and the second groups:

(1) What are the circumstances that present opportunities for work-related knowledge sharing?

(2) What are the reasons and circumstances that result in impediments for employees seeking to share their working knowledge?

The objectives of the first and second focus groups were to understand how the managers and knowledge workers, respectively, viewed KS. The objective of the third focus group was to refine the responses of the managers and knowledge workers as a group, to questions that arose in the previous two separate focus groups. Additional follow-up interviews were conducted through e-mails to clarify questions left unanswered in the three focus group discussions and to seek interpretations of the terms and expressions used by individual participants.

The second step in data collection was transcribing the audiotaped discussions. All names, including individuals and organizations, were replaced with fictitious names. The transcriptions were read several times to examine the responses in-depth. E-mail replies to the follow-up questions were analyzed as well. The objective of reviewing the transcripts and the e-mails was to (a) identify the participants' key words, terms, and concepts; (b) evaluate their significance to the participants; and (c) assess participants' motivation in using them.

Data Coding

Data coding began with identifying and marking the commonalities of key words and key concepts from the transcripts (see Appendix A). Concepts from the individuals' transcriptions were interpreted for different meaning. Literal meanings were carefully

avoided. Once the phrases of the words were identified as commonalities among all the participants, they were reexamined to determine whether the phrases were global or specific. The generality of the phrases or words then became categories; the details became properties. Sometimes the chosen category evolved as a property or a property evolved as a category. The entire process was an evolution of data collection. In order to enhance the efficiency and accuracy of the coding process, the qualitative research computer program NVivo 9 was used along with manual analysis.

The following color-coding process as discussed by Bogdan and Biklen (2007), was adopted to organize the transcription for data analysis and interpretation. After a category was identified, abbreviations were assigned to the category and a random color was chosen to highlight that category. The category was defined using the words or phrases from the research participants. Each individual property under that category was double-color coded to include the color of the category and an additional different color for the property. The flow of analysis was part of data collection whereby the properties became further in-depth understanding of the creation of the categories.

For example, from the transcripts, a concept was identified as a category named Spiritual Essence of Business, which was abbreviated as SEB and color coded red. Under the category of SEB, The property of capturing the spirit of business was identified and highlighted with red and purple. Color coding was used as a means to distinguish the general and specific concepts to facilitate organizing the information generated from the transcriptions. The property was then defined using the words or phrases captured from the focus groups discussions and e-mail responses. Following

each definition of the property were the direct transcriptions from each participant who supported that property. The transcriptions became the direct evidence for justifying the development of each property and category. This is a similar process to quantitative analysis, which uses the statistical significance as acceptance or rejection of the hypothesis.

The categories and properties then substantiated the research questions. The purpose of the study was to address the research question and investigate the underpinning concepts. The focus group and in-depth interviews were the foundation to establish how the findings related to the research questions. This process was created through the evolution of categories and properties. These are further discussed under data analysis section of this chapter.

Table 1 shows a summary of categories and properties developed from the transcripts. The legend of categories and properties includes each category with its definitions, its properties, and the definitions of those properties.

Table 1

Legend of Categories and Properties

Category 1: Spiritual Essence of Business (SEB)

Definition: Appreciating and paying attention to the now

Property	Definition
Capturing the Spirit of Business (CSB)	Openness part of the culture
Willingness and Connectedness to Share (WCS)	Being in a position to value knowledge to be successful together

Category 2: Believability and Openness (BO)

Definition: Components of building trust

Property	Definition
The Nature of Doing Business (NDB)	The principles of developing rapport, trust, and sharing back and forth
Cultural Value of Creating Trust (CVCT)	The interest in disclosing valuable knowledge to the individual or to the organization
Credibility (CR)	Developing people outside of oneself through the mindshare of others

Category 3: Whole Brain Learning (WBL)

Definition: Assimilate actionable information using a variety of modality

Property	Definition
Business Teaches Life Lessons (BTLL)	Sharing pearls of wisdom
Reciprocity of Sharing Knowledge (RSK)	Conducting business as a metaphor

Table 1

Legend of Categories and Properties (continued)

Category 4: Ethical Responsibility (ER)

Definition: Engaging peoples' knowledge as a critical aspect of complete solutions for successful outcomes

Property	Definition
Obligation to Share Knowledge (OSK)	The social responsibilities of sharing knowledge
Anticipate the Viewpoints and the Needs of Others (AVNO)	Self-reflection as an awareness of others

Category 5: Connectivity (CO)

Definition: Tapping the richest kind of information

Property	Definition
Organizational Culture Evolved through Cause Motivation (OCECM)	Engaging reciprocity opportunities that shape the organizational culture
Technology as a KS Tool (TKST)	Technology facilitates information and KS

Data Analysis

Category 1: Spiritual Essence of Business (SEB)

Category 1, SEB addresses and supports both research questions (a) How knowledge workers describe the parameters and conditions of KS, and (b) What is the relationship between KS and competitiveness of PSFs? The SEB identifies the spirit of actually capturing the willingness and connectedness for individuals to share. In addition, KS and competitiveness relate to the culture of the business, as well as how organizations use knowledge to enhance their core competency to become competitive and successful.

Table 2

Category 1: Spiritual Essence of Business (SEB)

Category definition: Appreciating and paying attention to the now
Property: Capturing the Spirit of Business (CSB)
Property definition: Openness part of the culture
Athena: It is also about appreciating the present opportunities and blessings; to pay attention to now.
Ulima: It paints a picture/a standard for what a good job looks like for others in the company, and advances a spirit of excellence, and going beyond the call of duty.
Kaya: When Walt Disney was building Disneyland and people wanted to know what he was up to and he said, I'll tell them everything. They're still not going to be able to replicate it because they couldn't capture the spirit of it. In addition, the culture has such a powerful pull or push on what you can do that somebody can tell you exactly how they do it, but if you don't have the right scenario, the right environment, you can't replicate it.
Property: Willingness and Connectedness to Share (WCS)
Property definition: Being in a position to value knowledge to be successful together
Dwyer: You're creating all these connections and I think we all probably know folks who hold on to their little idea and all they do is they die with their little idea. Nothing ever happens with it, right? So it seems like folks who do share are more connected, are more involved with projects, have more of their ideas acted on, get a chance to act on other peoples' ideas. I think I'm constantly evaluating to what degree and in what situations I am going to share and I'm assuming that other folks are having similar conversations inside their heads related to that.
Kaya: When Walt Disney was building Disneyland and people wanted to know what he was up to and he said, I'll tell them everything. They're still not going to be able to replicate it because they couldn't capture the spirit of it. In addition, the culture has such a powerful pull or push on what you can do that somebody can tell you exactly how they do it, but if you don't have the right scenario, the right environment, you can't replicate it.

Analysis of Category 1

Category 1, SEB addresses and supports both research questions (a) How knowledge workers describe the parameters and conditions of KS, and (b) What is the relationship between KS and competitiveness of PSFs? The acknowledgement of appreciating and paying attention to the now was a concept stressed by one participant who believed that this concept advances the spirit of excellence. The participants also mentioned the importance of connection because when employees share they become more connected in the practicality and spirituality of business. Both the concepts of (a) the willingness to share resulting in drawing employees to become more connected and (b) value what is current, define the SEB. These concepts were expressed in one participant's example of Walt Disney's philosophy of doing business. That participant explained that Walt Disney was very willing to share any knowledge related to the company business acumen. However, according to Disney, no one could capture the spirit of his business model regardless of how much knowledge he shared. The spirit of his business could not be replicated.

SEB, according to the participants, involves taking advantage of all the opportunities and blessings that constitute the culture of the business. An aspect of the culture is the employees' direct involvement of projects and ideas that are put into action because of their willingness to share knowledge. Therefore, employees and managers continuously evaluate the knowledge they share and how they share it, while being considerate to the sensitivity of their clients and co-workers in order to enhance the essence of business. These concepts constitute the parameter of which this company

shares knowledge. In addition, based on the data, this parameter is expanded to contribute to the competitiveness through the SEB.

SEB provides the foundation for the process of continuous improvement. This improvement is due to the employees evaluating situations in order to exceed expectation. Exceeding expectation provides the cultural context for SEB. This business culture reinforces the self-evaluation of sharing knowledge as a continuous development for the benefit of the organization. Based on the data, the cultural context and candidness for the SEB advances the competitiveness of the organization. See Table 2 for participants' comments that validate the category.

Category 2: Believability and Openness (BO)

Category 2, BO addresses and supports both research questions (a) How knowledge workers describe the parameters and conditions of KS, and (b) What is the relationship between KS and competitiveness of PSFs? The property of the nature of doing business relates to the parameter of KS. When employees are believable and open, they create a culture where building trust is emphasized. The emphasis of being open is consistent with an individual's credibility in sharing knowledge. In addition, when knowledge is shared and applied within the organization, the resulting added value heightens competitiveness.

Table 3

Category 2: Believability and Openness (BO)

Category definition: Components of building trust
Property: The Nature of Doing Business (NDB)
Property definition: The principles of developing rapport, trust, and sharing back and forth
Bena: It's about someone's ability to hear and synthesize.
Alem: I think the natural tendency would be that if you shared information and it was taken and somebody disappointed you because somebody said something, shared information about a confidential nature of the business and then they went out and talked about it to somebody else, the tendency would be to not want to share that kind of information across a broad group and it takes a bigger purpose to continue to want to do it and so, yes, you could say that it builds trust amongst everybody, but once that trust is crossed, I think it takes a bigger effort to continue to want to do what you thought was right at the beginning.
Kaya: You got to answer a few questions for them before you can ask a few more so there's this dance that goes on, I think, that is in the process of developing rapport, developing trust by sharing back and forth and depending on how well you do that, then you have to use your experience and your gut, I think, to either know how much what to share or also how you're expressing that information that you're sharing.
Sage: A community where people feel they can openly share is promoted through organizational culture—creating an environment to develop relationships and trust, perspectives are shared and heard throughout the learning process. The core work becomes knowledge sharing to put knowledge into action to accomplish/produce great results.
Athena: So I think we have a pretty open culture. I think there may be some pockets of, of people not sharing, but I would say if you came in from the outside you would say we're pretty open.

Table 3

Category 2: Believability and Openness (BO) (continued)

Property: Cultural Value of Creating Trust (CVCT)
Property definition: The interest in disclosing valuable knowledge to the individual or to the organization
Dwyer: It's kind of a basic of creating trust with someone. There's a little bit of disclosure. So inside of the realm of sharing something that's a value that you know or about yourself, but probably in the context of there's something you know that you consider valuable would certainly be almost like a gift or it's showing some vulnerability, which I think is part of a component of building trust in a relationship.
Kaya: We believe if you give people the information, they'll do the right thing. So it's very affirming of our values. There's the spoken part of the culture and the unspoken part and the unspoken is the way it really is around here. And I also think that the way you know what's true about the culture is by looking in two places, the very top and the very bottom.
Athena: I think trust is a big word. Sometimes it's a garbage-can word these days, but what we're hoping to do is to break it apart so that it turns into behaviors that people can look at their own behavior, and say how do I do each one of those and, I think that the one, the believable and the connected are really challenging for some people so that is, that's.., I guess, when I look at knowledge sharing, I look at do I really care enough to go out of my way to do the effort that's required and then am I willing to also admit when I don't know instead of just covering it up or something else so.
Alem: I think the natural tendency would be that if you shared information and it was taken and somebody disappointed you because somebody said something, shared information about a confidential nature of the business and then they went out and talked about it to somebody else, the tendency would be to not want to share that kind of information across a broad group and it takes a bigger purpose to continue to want to do it and so, yes, you could say that it builds trust amongst everybody, but once that trust is crossed, I think it takes a bigger effort to continue to want to do what you thought was right at the beginning.
Sage: A community where people feel they can openly share is promoted through organizational culture- creating an environment to develop relationships and trust, perspectives are shared and heard throughout the learning process. The core work becomes knowledge sharing to put knowledge into action to accomplish/produce great results.

Table 3

Category 2: Believability and Openness (BO) (continued)

Property: Credibility (CR)
Property definition: Developing people outside of oneself through the mindshare of others
Athena: I've often found coming through me is not as effective as leading the person, the original source that I learned it from and let them listen to it and then make their own decision. By the time it gets through me, I've filtered it and it's a little spin on it, but if I can get them in front of the person that is impacting me, then they can either get excited or not. So I think if you can take people back to the original source. Sometimes that has more credibility, less spin. (From combined focus group interview)
Kaya: Another circumstance might be because you're not sure if your approach is good or if there is an alternative you should consider. So you're looking for others' mindshare. You want input where knowledge truly is powering.
Dwyer: There's a real benefit if you can kind of share what you've learned. I've been down this road before. Let's not make this mistake and kind of pool, some expertise.
Athena: We don't want to be the most successful company in a dying industry. We really want our industry to be successful. A professional organization had a client conference every year where they brought in their best clients to talk to each other about how they were using the materials and how they were using the ideas and we copied that idea and it's been one of our most successful marketing events; our most successful marketing tools. It didn't hurt them to share that with us; but they actually shared the details with us, how they did it, what was good about it and pushed us in a direction that I think has been very positive. So I never would, I would never feel good about any member firm not doing well. We want them all to do well. (From manager focus group interview)

Analysis of Category 2

Category 2, BO addresses and supports both research questions (a) How do knowledge workers describe the parameters and conditions of KS, and (b) What is the relationship between KS and competitiveness of PSFs? The research participants stressed the importance of the nature of doing business as the ability to develop rapport,

trust, and mutual exchange of ideas. This property supports the organization's BO of conducting business. The participants described the culture of their organization as a community of knowledge workers who are open and authentic. The participants also explained that their willingness to disclose valuable knowledge enriches their trustworthiness and improves the credibility of the organization, as well as enhances the success of the industry.

The context of this organization revolves around the behavior of their employees and the challenges they face in deciding what is natural to share. The foundation for this decision is the value of creating trust. According to the participants, when they trust someone, they are more inclined to share knowledge. Therefore, their behaviors result in expanding the parameter and the condition of sharing knowledge to benefit the stakeholders.

According to the data, the research participants affirmed the significance of the organization's value in relation to the cultural context of BO. The coordination of the organization's culture was expressed as a spectrum that includes top management and knowledge workers collectively. This collective concept is communicated as the power of mind share of knowledge as referenced by one participant. The expertise of coordinating individual mind share is a benefit to the organization that encourages BO. Consequently, the parameter of sharing knowledge expands the concept of credibility, the nature of doing business, and the cultural value of creating trust. The practice of KS within the organization which promotes BO drives competitiveness. See Table 3 for participants' comments that confirm this analysis.

Category 3: Whole Brain Learning (WBL)

Category 3, WBL addresses and supports both research questions (a) How do knowledge workers describe the parameters and conditions of KS, and (b) What is the relationship between KS and competitiveness of PSFs? WBL involves the engagement of knowledge that teaches life's lessons within the business model. This business model structure includes the reciprocity of KS among co-workers, clients, and consulting partners. The participants explained concept of WBL within the language of the metaphor. They used metaphorical examples to substantiate their points of view that support the research questions.

Table 4

Category 3: Whole Brain Learning (WBL)

Category definition: Assimilate actionable information using a variety of modality
Property: Business Teaches Life Lessons (BTLL)
Property definition: Sharing pearls of wisdom
Bena: Maybe you just need to share it in a different way. I realize that with my grandson all the time. I think he would relate to this story far more than he would relate to his grandmother saying well, some lecturey sort of thing, but it's the same with people. I mean I think people receive in different ways. If it's not getting though one way, it might come through another way. (From combined focus group interview)
Kaya: I think another circumstance is that you're kind of investing in reciprocity for the future. People that tend to give and share and help. You kind of build a bank account with others that they're very willing to step up and help you the next time because you helped them. So, it's a lot about the relationship and banking trust points or whatever. (From knowledge worker focus group interview)
Kaya: You got to answer a few questions for them before you can ask a few more so there's this dance that goes on, I think, that is in the process of developing rapport, developing trust by sharing back and forth and depending on how well you do that, then you have to use your experience and your gut, I think, to either know how much what to share or also how you're expressing that information that you're sharing.(From combined focus group interview)
Ulima: We're also just having conversations with external audiences and letting them know either pearls of wisdom that we have; or things that we're reading about, statistics or headlines that we're reading about that we want them to know about.
Bena: When there's something wrong or worrisome, when the economy is bad and you have to do something to address whatever that worrisome circumstance might be, then I think you have to start doing some sharing as well. And I think also just underlying all of that, another circumstance is when there is action needed, positive or otherwise, action needed around the new book or the new event or the poor economy. (From manager focus group interview)

Table 4

Category 3: Whole Brain Learning (WBL) (continued)

Property: Reciprocity of Sharing Knowledge (RSK)
Property definition: Conducting business as a metaphor
Alem: I believe when you share knowledge, you engage peoples' whole brain, instead of just a partial part of it and so they, when people know what, how they can affect things, they can bring their whole solution to the program and I think by having a company that believes that everybody can participate in a successful outcome then knowledge sharing is critical.
Kaya: I think another circumstance is that you're kind of investing in reciprocity for the future. People that tend to give and share and help; you kind of build a bank account with others that they're very willing to step up and help you the next time because you helped them. (From knowledge worker focus group interview)
Kaya: I'm thinking of in client situations, there's a give to get. You got to answer a few questions for them before you can ask a few more so there's this dance that goes on, I think, that is in the process of developing rapport, developing trust by sharing back and forth and depending on how well you do that, then you have to use your experience and your gut. (From combined focus group interview)
Athena: Balthasar shares knowledge very, I mean his whole, he demonstrates the sharing of knowledge. So we basically would like to have everybody know what's going on in the company both positively and negatively. One of the employees went around and collected stories about our culture from everybody, and there's an awful lot in that and it's a thick book about different stories that people experienced themselves. And a lot of it, if you read underneath it all, is of employees caring for each other and going out of their way; but a lot of it is around the openness of the culture, around I was surprised to the openness of the culture. So I think we have a pretty open culture.

Analysis of Category 3

Category 3, WBL addresses and supports both research questions (a) How do knowledge workers describe the parameters and conditions of knowledge sharing, and (b) What is the relationship between knowledge sharing and competitiveness of PSFs?

Reciprocity of sharing knowledge engages a person's whole brain and it is an impetus for lessons learned in life. This organization's business model acknowledged WBL as an expansion of using metaphor to elaborate on sharing information. For instance, one participant explained that the knowledge conversations were very much like the pearls of wisdom.

WBL also affects how solutions are implemented resulting from investing in reciprocity of information exchange. This process is critical to this organization. WBL expands the horizon of projecting into the future; whereby, when sharing knowledge, the circumstances under which one chooses to share have an effect on the business outcome. One participant spoke very strongly about how the bad economy causes one to worry. This example represents a condition of life's lessons for sharing knowledge. Therefore, the process of sharing knowledge to solve problems results in using WBL. See Table 4 for participants' comments that reinforce these questions.

Category 4: Ethical Responsibility (ER)

Category 4, ER addresses and supports both research questions (a) How knowledge workers describe the parameters and conditions of knowledge sharing, and (b) What is the relationship between knowledge sharing and competitiveness of PSFs? The participants emphasized ER as an obligation to share knowledge and anticipate the needs of others. Critical to KS is the social responsibility of sharing within the organization and the community at large. The participants explained their inner need of self-reflection for the purpose of sharing knowledge to fulfill their personal expectations to give back.

Table 5

Category 4: Ethical Responsibility (ER)

Category definition: Engaging peoples' knowledge as a critical aspect of complete solutions for successful outcomes
Property: Obligation to Share Knowledge (OSK)
Property definition: The social responsibilities of sharing knowledge
Alem: I believe when you share knowledge, you engage peoples' whole brain, instead of just a partial part of it and so they, when people know what, how they can affect things, they can bring their whole solution to the program and I think by having a company that believes that everybody can participate in a successful outcome then knowledge sharing is critical.
Bena: We also most recently put together a social responsibility statement in a formal, yet, colorful package, which looked like a booklet illustrating some of the things. And even though I've worked here 14 years, after putting that document together I was very impressed. You take for granted all of the things there are within your culture until you put them all together within 20 pages or so; and then you think, oh my gosh, I cannot believe we do what we do towards social responsibility. What I mean by social responsibility is the ethical/social obligation that an organization has to the community and its people. If you have a business and prosper in a given environment, you are socially obliged to give back.
Dwyer: You've got an obligation to share knowledge if it's leading to a very negative situation, a dangerous situation, and litigation. There's things that it's not optional anymore, that you really have a responsibility to say what you see or what you know or if you perceive something as being dangerous or could lead to harmful.
Sage: If you're talking about events and different things that we've switched up, those are opportunities and circumstances to share a wealth of information, but not to go overboard. So what are those important components of acknowledging our people, showcasing our clients and then how do you scale it down with the use of technology and not pulling people together and, flying people from all over the place to just be here.

Table 5

Category 4: Ethical Responsibility (ER) (continued)

Property: Anticipate the Viewpoints and the Needs of Others (AVNO)
Property definition: Self-reflection as an awareness of others
Sage: It's also kind of priming people and being proactive in what else might be coming. So an opportunity to kind of be proactive and anticipate the needs down the road.
Athena: I learned that that's a potential reaction that somebody might have, then it causes me to be a little more careful about it, a little more thinking about the person that I'm sharing, a little bit more discriminating, frankly, because I mean I love ideas and I love, but not everybody is like me and so it took me a long time to realize not everybody's like me and to modify some of my own, my own behavior and language as a result.
Kaya: I might test it with someone that I trust and have had a lot of experience with or view as a mentor to first check am I on track? Am I perceiving this the right way? Am I getting the right message from the person? So kind of like what you were saying, Athena, like what can I think back about how this happened and where did I might, where might I have had a breakdown in terms of the way I communicated something or the timing of it. I just know from my experience selling that you're only as good as the questions that you ask. And so I think we need to constantly be asking ourselves are we using those opportunities where we're asking people to respond to things as effectively as we could.

Analysis of Category 4

Category 4, ER addresses and supports both research questions (a) How do knowledge workers describe the parameters and conditions of KS, and (b) What is the relationship between KS and competitiveness of PSFs? The participants described ER as a duty an as a commitment. The consideration from the participants' view is that one must be proactive offering knowledge to assist others in anticipation of their needs. The participants also discussed the necessity to share significant knowledge if one perceives

the situation is serious. For instance, one participant explained the obligation of sharing knowledge to alleviate a dangerous situation.

ER is solidified by self-reflection. The participants expressed the desire to be self-reflected as an improvement of practicing *ER*. The practice of self-reflection offers opportunities in business to share knowledge for the benefit of helping others. The participants used a question technique that acknowledges their inner voice for guidance of adjustments that result in successful outcomes. This process develops a more powerful application of ER. See Table 5 for participants' comments that support these questions.

Category 5: Connectivity (CO)

Category 5, CO addresses and supports both research questions (a) How knowledge workers describe the parameters and conditions of KS, and (b) What is the relationship between KS and competitiveness of PSFs? The process of tapping the richest kind of information through organizational culture that promotes cause motivation is supported by CO. In addition, information and KS is facilitated by technology, which is the connectivity for assisting the sharing of knowledge within the organization. This process is directly related to the parameters of KS and the competitiveness.

Table 6

Category 5: Connectivity (CO)

Category definition: Tapping the richest kind of information
Property: Organizational Culture Evolved through Cause Motivation (OCECM)
Property definition: Engaging reciprocity opportunities that shape the organizational culture
Athena: We're very idea rich; we are very information rich because we deal in ideas. We count on people sharing information because they are passionate about it, because they are really interested in it and because they, they take pride in what they're doing.
Ulima: Depending on the type of knowledge sharing, if you can set the context for people as to what the objectives are, what research you've already done, what facts you've already collected and what brought you to this point of view at this moment in time, usually people will get with you much quicker and start taking action instead of pausing, hesitating, challenging, wondering, asking questions, which sometimes translates into what looks like resistance. So sharing knowledge upfront gets people into more of an action mode.
Kaya: When we capture, publish, and share our client success stories, it's the richest kind of knowledge/information that we can give our sales people and our clients. Our sales reps use the success of other clients to gain entry into new prospects. Our clients use the success stories to inspire their thinking about how they can approach a similar problem in their organization.
Alem: And in all different categories. Categories of philanthropy, categories of who saved a best customers or who, what were some of the stories that of things where, it could be of any category where you go above and beyond where something, somebody needs to be recognized for something that they did contributing to either the culture of the company or the client relationships that we've had, or, the values of the company.
Sage: Community where people feel they can openly share is promoted through organizational culture—creating an environment to develop relationships and trust, perspectives are shared and heard throughout the learning process. The core work becomes knowledge sharing to put knowledge into action to accomplish/produce great results.

Table 6

Category 5: Connectivity (CO) (continued)

Property: Technology as a KS Tool (TKST)
Property definition: Technology facilitates information and knowledge sharing
Ulima: Using electronic means like webinars or Twitter or *Company Connect*, even e-mail or voicemail as virtual sharing. So whenever you're not physically present, but you can be felt, your message could be felt.
Bena: We have a living section that celebrates people. It could be marriage, engagement, birth. We have a section where we talk about what's happening with the people in the organization, promoted, moved somewhere else, that sort of thing. We talk about client stories, which consultant out there is making what difference with what organization. What was the issue and how is that working and we sometimes will simply take an e-mail that is appraising a compliment from a client and we'll delve in a get that story and publish it with pictures on *Company Connect*. There's everything from the sales hub that Ulima spoke about to the telephone list in the organization to pictures of people to video. We did a live broadcast of Balthasar and Athena to a group of people on Friday, and we were able to post that recording on that website today. So it's video; it's documents. If Alem writes a letter to the organization, we publish it there, latest news, events from the CEO.
Alem: We have a need to just kind of connect everybody to the leadership team, to the ownership group, to the progress that we're making on our annual objectives; and, so we do an all-company meeting about once every two months, maybe four times a year, to kind of bring in; with a distributed company, you need connection activities and so all of the things that we have: the sales hub, the *Company Connect*, the all-company meetings, the annual meeting that we have all bring culture to the organization and the closer that we can feel to our folks working in their distributed office, the better we are. So we're using technology to do a lot of that type of stuff. But we also have anywhere from 150 to 180 people on campus getting together once every quarter or so to kind of keep the momentum.
Sage: If you're talking about events and different things that we've switched up, those are opportunities and circumstances to share a wealth of information, but not to go overboard. So what are those important components of acknowledging our people, showcasing our clients and then how do you scale it down with the use of technology and not pulling people together and, flying people from all over the place to just be here.

Analysis of Category 5

Category 5, CO addresses and supports both research questions (a) How knowledge workers describe the parameters and conditions of KS, and (b) What is the relationship between KS and competitiveness of PSFs? The research participants believed that the richest kind of information originates from the organizational culture that evolved through cause motivation. When employees openly share, they are connecting and creating an information-rich environment. The participants discussed the variety of ways the connectivity works within their organization. For instance, both managers and sales staff used *Company Connect* (the name of this organization's intranet) to facilitate all types of organizational information and for managing knowledge. The use of information and knowledge through *Company Connect* increases employees taking action. This activity heightens the competitiveness of an organization. See Table 6 for participants' comments that verify these questions.

Triangulation of the Data

Multiple sources of information were used to augment the process of data analysis. Field notes and artifacts (consisting of literature describing the background and history of the organization of this study and the contents published at this organization's website) were reviewed. The outcome of these multiple sources added to the triangulation procedure. The qualitative research computer program NVivo 9 was used for theme nodes creation, text search, and word frequency query of the transcripts. This query is performed in addition to the manual in-depth analysis resulting in the creation of the categories and properties of this study.

Summary of Chapter 4

The focus groups presented ideas through mutual discussions that support the competitiveness of one PSF and the parameter of KS. The categories of Spiritual Essence of Business, Believability and Openness, and Ethical Responsibility present the mind and spiritual connection to enhance the value of KS as a factor for competitiveness. In addition, the categories of Whole Brain Learning and Connectivity are context for creating a learning organization. The practice of sharing one's mind as an aspect of learning benefits all stakeholders. The participants found a way to take the concept of KS and extend the business responsibility to making human connection. These concepts result in a new appreciation of positive social change. Based on the interpretation of the data, through direct transcription, enhancing the benefits of stakeholders has a positive effect to social change.

Chapter 5 will explain how the various categories and properties relate to the literature on KS. A discussion on the interpretation of the findings is included in the chapter. Implications of the study are presented for future consideration.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

This chapter presents the following information: interpretation of the findings, summary of the findings, implications for social change, recommendations for action, and recommendation for further study. The purpose of this research study was to examine (a) how knowledge is shared among knowledge workers within one professional service firm (PSF) and (b) whether creating an environment that encourages knowledge sharing (KS) among knowledge workers would provide a competitive advantage, improve overall effectiveness of the PSF, and enhance quality of service.

This research used a case study. Data were collected from a management consulting firm (an example of a PSF). Three focus groups were conducted, including managers, knowledge workers, and a combination of the two. Additional data included follow-up e-mail responses from the participants. The research questions were (a) How do knowledge workers describe the parameters and conditions of KS, and (b) What is the relationship between KS and competitiveness of PSFs? The transcripts and e-mail responses were color coded by hand. NVivo 9 was used to identify the following five themes and patterns: (a) spiritual essence of business, (b) believability and openness, (c) whole brain learning, (d) ethical responsibility, and (e) connectivity.

Interpretation of the Findings

The findings from this study constitute new information, as well as reinforce the current literature. The literature is used to support specific categories that emerged from the analysis. Some new arose, which represent new arenas for exploration.

Spiritual Essence of Business

The first category was the spiritual essence of business (SEB), including the properties of (a) capturing the spirit of business and (b) willingness and connectedness to share. The word *spiritual* does not refer to religion and work. It refers to the element embedded in the organizational know-how that makes an organization special and distinctive. The PSF's business model acknowledged the value of KS and the openness of the culture integrated as appreciation and attention to the SEB. The participants identified concepts depicting the spirit of conducting business. When the participants spoke of KS, they stressed the importance of using their knowledge for the practicality of putting the knowledge in action. This concept is supported by Freire (2000) who described praxis—informed action—as the process of translating theoretical knowledge into practice. Praxis is the source of knowledge and creation (Freire, 2000).

SEB is about how mind and spirit can work together for an organization to identify values, forge the mission, and live the mission (Chappell, 1993). Spirituality is at the core of management (Berthouzoz, Lefebvre, Mitroff, & Pauchant, 2002) Thus, SEB is about how a PSF is characterized by the creative applications of tacit knowledge of their knowledge workers.

Believability and Openness

The second category of believability and openness (BO) included the properties of the nature of doing business, cultural value of creating trust, and credibility. The selected organization emphasized the capacity to not just listen in order to be believable and open, but also pay close attention to the meaning of the knowledge being shared.

This attention to effectively building trust creates a community where employees can openly share and develop rapport so that the trust will result in KS culture. This concept results in the nature of doing business. In addition, believability and openness are the result of strong values that include the credibility of the mindshare of others. This mindshare concept empowers everyone so that it overcomes the barrier of KS.

The property of cultural value of creating trust is consistent to the literature that discusses the importance of trust and KS. For example, Deng (2008) described trust as a key enabler for KS; Lane (1998) presented trust as a highly desirable property in knowledge intensive business; and Renzl (2008) found that trust in management increases employees' KS and reduces the fear of losing their unique value in the KS process. Lack of credibility is one of the barriers of KS (Riege, 2005; Szulanski, 1996).

Whole Brain Learning

The third category of whole brain learning (WBL) included the property of business teaches life lessons and the property of reciprocity of sharing knowledge. The selected organization stressed individualistic circumstances, which acknowledged pearls of wisdom that were seen as effectively helping employees to share knowledge and make changes. These changes result in lessons one learns in life. The data also indicated that employees are interested in investing in the reciprocity of sharing-knowledge concepts for the future assimilation of WBL practices. For example, one specific participant shared the perception of WBL metaphorically using an example of knowledge as a medium of exchange.

Oral storytelling, similar to the data related to pearls of wisdom, is one example of KS through personal interactions (Pannese et al., 2009). Widén-Wulff and Suomi (2007) recommended installing the metaphor of organizational learning into the organization. The property of reciprocity of sharing knowledge is consistent to the social exchange theory (Thibaut & Kelley, 1959) and an individual's expectation of maintaining exchange balance between parties (Blau, 1964).

Ethical Responsibility

The fourth category of ethical responsibility (ER) included the property of obligation to share knowledge and the property of anticipate the viewpoints and the needs of others. The selected organization acknowledged business social responsibility to share knowledge. The participants believed that when they have a solution to a problem, they have ethical obligation to share that solution to the community. This is also considered as social responsibility. The participants explained the importance of their careful consideration for deciding when and what to share. Anticipate the viewpoints and the needs of others become the process of individual self-reflection, which constitutes ethical responsibility.

Employees' aspect of self-reflection contributes to the organizations that are value-driven, where honesty and ethics are expected by co-workers and customers (Strickler, 2006). The literature does not address the ethical or social responsibility of KS of an individual in anticipation of the needs of others. Therefore, this category created from the data, encompasses a new area for additional study on KS and competitiveness of PSFs. Consequently, the current study partially fulfills the gap in the literature.

Connectivity

The fifth category of connectivity (CO) included the property of organizational culture evolved through cause motivation and the property of technology as a KS tool. The participants of the selected organization indicated that they took pride in tapping the richest kind of information related to the culture of the business, as well as personal acknowledgement of philanthropy and employee successes. Co represented the passion of the employees and clients that resulted in cultural cause motivation. Employees of the selected organization were recognized for any significant accomplishments or life's challenges that they encountered. This recognition created an environment that resulted in business connectivity. One form of connectivity is the company's intranet, which was used and continues to be used, according to the data, as a tool for sharing knowledge.

Connectivity would not be efficient or effective without the implementation of information technology. KM strategy is incomplete without a technology component (Frappaolo, 2006). KS is one component of KM and technology is a tool to facilitate the connectivity among employees. However, KM "is not directly tied to technology; rather, emerging technologies provide a means of enabling more effective KM" (Alavi & Leidner, 2002, p. 23), which requires a hybrid solution of people and technology (T. H. Davenport & Prusak, 2000).

Summary of the Findings

The findings have been presented in a totality of expansion that supports both research questions. Research question one that examined the description of the parameter and condition of KS was found to enlarge the constraint of how knowledge is shared

among knowledge workers. For instance, the parameter of KS is broadened by the vastness of the spiritual essence of business, sensibility, and connectivity. Research question two examined the relationship between KS and competitiveness. Believability and openness, whole brain learning, and ethical responsibility expand the building of relationships.

Implications for Social Change

Enhancing competitiveness through KS adds economic and social value to the PSFs and their stakeholders. According to Alvesson (2004), knowledge-intensive firms (PSFs included) often contribute to the social good through ambitious, well-intended, intelligent, and productive work. The services offered by PSFs (such as accounting firms, law firms, management consulting firms, or engineering consulting firms) have a direct and positive impact to social good. Advancement in KM through the encouragement and support of sharing organizational knowledge has a positive impact to an organization. Success of an organization directly creates value to the well-being of its stakeholders. Society is made up of people. Creating what is good for the individual also generates what is good for the society. The collection of individual values eventually enhances social value (Auerswald, 2009).

As one of the leaders of its industry, the selected organization of this research study is an excellent example of an organization which contributes positively to social change through the services it offers. This organization provides long-lasting behavioral change solutions by empowering people to acknowledge their own strengths in making a difference in the workplace. KS is a key component in solidifying the core competency

of an organization. This organization has achieved success through the encouragement and the role model of its top leaders, as a result of a culture of generosity in KS among its knowledge workers and among its consulting partners. With its global presence, employees of this organization are contributing to the advancement of social change throughout the world.

Recommendations for Action

The key assets of PSFs are expertise, technical knowledge, and client relationships (T. J. DeLong et al., 2007). It is crucial for knowledge workers of PSFs to share organizational knowledge to enhance competitive advantage. According to Grant (1996), the capability to manage knowledge strategically is a significant source of organizational competitive advantage. Implementation of the findings from this research study is recommended for PSFs to sustain competitiveness. PSFs should explore the categories generated from this research to build a workplace environment that fully utilizes organizational knowledge. The strength of PSFs is supported by stacking the five categories on top of each other forming a pillar of competitiveness (see Figure 1).

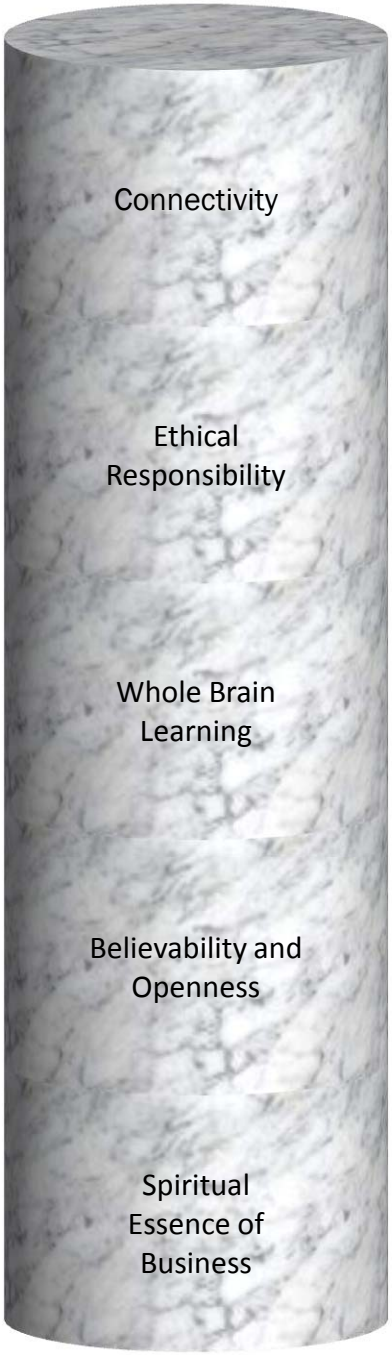

Figure 1. The pillar of competitiveness of professional service firms

The core competency of an organization is what it does best by using organizational knowledge it accumulates. A PSF should explore beyond its core competency to uncover the spirit of its business. The spirit of business is the branding that makes a PSF unique from its competing partners. Clients of PSFs generally associate the firm's name, performance, and reputation with the expected quality of service provided by the firm's knowledge workers (Greenwood et al., 2005). A PSF should cultivate an environment that promotes the willingness and connectedness among its knowledge workers to share knowledge. This can be accomplished by encouraging workforce conversation and dialogue (Garrity, 2010). PSFs should follow the servant leadership model to enable the creation of a sense of meaning and purpose that lead to the intrinsic motivation of knowledge workers (de Sousa & van Dierendonck, 2010). KS enriches core competency, which builds the spirit of business.

In order to encourage KS, a PSF should promote a culture of trust among its knowledge workers. Lack of trust is a common barrier for an organization to change to a KS culture (Dalkir, 2005). T. H. Davenport and Prusak (2000) recommended the following three ways that would lead the organization to establish trust in sharing knowledge: (a) trust must be visible, (b) trust must be ubiquitous, and (c) trustworthiness must start at the top.

A PSF should nurture an environment that encourages reciprocity of KS. Employees are more likely to share knowledge with other employees if they believe sharing will improve mutual relationships (Cho et al., 2007). PSFs can increase the level of personal interactions within the firms by encouraging their employees to work in

teams, as well as, by using job rotation to create opportunity for employees to interact with different groups of people and form informal networks (Han & Anantatmula, 2007).

To motivate knowledge workers to share knowledge, one of the conditions is to create a safe environment for them to share their ideas (Strickler, 2006). Knowledge workers are more likely to be motivated by their perception of the usefulness of the knowledge (Iyer & Ravindran, 2009). PSFs should consider making KS as an element in performance review and promote a team-based culture (Wolfe & Loraas, 2008).

Connectivity for KS can be accomplished through written contributions (person-to-document), personal interactions (person-to-person, social informal), organizational communications (person-to-group, social formal), and community of practice (person-to-group, social informal) (Yi, 2009). A PSF should constantly create opportunities that support connectivity among its knowledge workers. Implementing information technology as KS tools (particularly, collaboration tools) facilitates connectivity. However, the focus of connectivity should emphasize person-to-person interactions. Knowledge management systems are tools. They are useless if they are not used. In addition, employees must make use of the technology, and the technology must fit the tasks it supports (Goodhue & Thomson, 1995). Therefore, a PSF should, through organizational culture driven by cause motivation, encourage its knowledge workers to actively use information technology to get connected and share practical knowledge.

Recommendations for Further Study

Knowledge is the root of human development. The progress of civilization has significantly been influenced by how human shared and applied knowledge.

Organizations use knowledge extensively to sustain competitive advantage. In order to maximize the potential of organizational knowledge, many organizations have implemented knowledge management (KM). The coverage of KM is broad. It touches a vast area which consists of numerous disciplines and spans across many industries. Calabrese (2010) described KM as a hybrid of multiple disciplines. Therefore, the study of KM could be examined from various perspectives, such as, education, organizational learning, management strategy, information technology, and behavioral science. As KM has been widely adopted by many industries, further studies should examine the relationship between KM research and industry practices.

The research of this study focused narrowly on KS (a subset of KM) and competitiveness (a subset of management principles) of PSFs (a subset of service providing industry). Other areas of KM as they relate to different disciplines and a wider segment of different industries should be examined. The selection of various research methodologies should also be considered.

A qualitative research methodology approach was chosen for this research study. Data were collected using focus group interviews. The process of collecting and analyzing data from focus group discussions was a new learning experience to the researcher of this study. Throughout the focus group interviews and during the process of data analysis, the researcher was pleasantly surprised by the dynamic of qualitative research. The first two interviews were relatively semi-structured because the participants were asked the same two questions only. Follow-up questions generated from the first two focus groups were used for the subsequent combined focus group.

During the combined focus group interview, there were several occasions when the researcher of this study should pause longer after a question was given to the participants. Pausing would offer silent time for the participants to digest the question and to search for a more appropriate answer. However, the researcher felt that this lack of silent time did not significantly affect the quality of the responses from the participants. For research conducted using interviews, an awareness of applying pause and silent time by the researcher should be considered.

The researcher was fortunate to have worked together with a group of participants who were highly qualified and well experienced in the area related to the research questions. This group of participants provided the researcher with quality data from their responses resulting in concrete findings. For focus group interviews, careful consideration of selecting the right participants is recommended.

The following is a few recommendations for further studies in the subject area of KS and competitiveness of organizations:

Knowledge Sharing and Competitiveness of the Manufacturing Industry

A study is needed to examine the practice of KS and competitiveness of organizations which produce and sell tangible products. Even though knowledge is essential for the innovation behind product creation and development, the manufacturing industry does not depend entirely on the expertise of its knowledge workers to generate revenue. The manufacturing process includes managing supply chain, operations, and logistics which are capital and labor intensive. The purpose for additional the study is to find out the relationship between KS and competiveness of manufacturing companies.

Productivity Study of Professional Service Firms

A study is needed to better understand the effectiveness of implementing KS initiatives as they relate to the productivity and performance of knowledge workers of PSFs. The objective of the recommended study is to find out the efficiency and effectiveness of knowledge workers' output resulting from the management's encouragement and support of sharing organizational knowledge. The findings from this assessment could provide management with feedback on how KS affects the firm's competitiveness.

The Millennial Knowledge Workers

The new generation of knowledge workers is classified as Generation Y or Millennials (born since 1981). This group of knowledge workers are raised to be collaborators with their peers and expect workplace leaders to collaborate with them (Calabrese, 2010). The Millennials are comfortable using information technology and are accustomed to information sharing because they grew up with network media, such as Facebook, Twitter, and text messaging. According to Holtshouse (2010), collaborative skills are the capabilities that organizations value most for young knowledge workers. New study is needed to examine the relationship between competitiveness and KS when the majority of knowledge workers within the PSF belong to the Millennials.

Finally, academia should establish a standard to differentiate between the definitions of information and knowledge. These two terms have been used interchangeably (Wang & Noe, 2010) creating confusion to the research community, businesses, and the public at large. This may be due to the vagueness of the concept of

knowledge (which is further complicated by its different types: tacit, implicit, and explicit). There has not been a clear definition of knowledge that is universally employed. For example, Handzic and Zhou (2005) defined knowledge as information that is actionable, while Nonaka (1994) defined knowledge as justified true belief. Some researchers argued that when tacit knowledge is codified, it becomes explicit knowledge (Dalkir, 2005; Frappaolo, 2006; Khairah & Singh, 2008). This would require a further differentiation between explicit knowledge and information. Knowledge is fluid and dynamic, while information is static. For this reason, knowledgebase (a database of knowledge) is not logical because a database may not be capable to capture and collect knowledge. It can only collect the codified format of knowledge, which is converted to data and information. Therefore, knowledgebase should be named information-base to be technically correct.

Conclusion

Without a clear differentiation between information and knowledge, the progress of the relatively new discipline of KM is hindered. Sharing information should not be mistakenly treated and categorized as sharing knowledge. KS, which extends beyond information sharing as it relates to organizational knowledge, is the essence of the spirituality of business. KS enhances an organization's believability and openness. KS develops the knowledge workers' whole brain learning. KS supports an organization's ethical responsibility. KS is the connectivity of employees within the organization and among organizations. All of these factors added competitiveness to an organization.

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Appendix A: Sample Transcript

Combined Focus Group Knowledge Workers

Albert:

During the prior focus group discussions, someone mentioned "knowledge sharing builds trust." How do you know?

Dwyer:

CVCT

BO

Well I might just start that off, I mean, it's kind of a basic of creating trust with someone. There's a little bit of disclosure. So inside of the realm of sharing something that's a value that you know or about yourself, but probably in the context of there's something you know that you consider valuable would certainly be almost like a gift or it's showing some vulnerability, which I think is part of a component of building trust in a relationship.

Kaya:

That's true because I've seen it be suffocated. Then when I need help or need something and I ask, I get back the help that I'm looking for or the information I'm looking for. So sort of what ***Dwyer*** is saying, you should, you kind of build up a rapport, a bank account, if you will, with people and then get back.

Albert:

Anyone else? How do you know knowledge sharing builds trust?

Ulima:

OCECM

Co

Well, depending on the type of knowledge sharing, if you can set the context for people as to what the objectives are, what research you've already done, what facts you've already collected and what brought you to this point of view at this moment in time, usually people will get with you much quicker and start taking action instead of pausing, hesitating, challenging, wondering, asking questions, which sometimes translates into what looks like resistance. So sharing knowledge upfront gets people into more of an action mode.

Albert:

Anyone else on trust?

Athena:

We've, we have a program that has dissected trust, which is very interesting, into is somebody able, are they believable, are they connected to you and are they dependable and each one of those has a little bit of so able, are they good at what they do. Do they really have valuable information? Are they experienced and believable? A lot of it has to do with do they, are they willing to be vulnerable? Are they willing to admit they don't know some things too and connect it, (I hope these are the right words), do you want to establish a relationship and then dependable is did you do what you said you were going to do. So, I think trust is a big word. Sometimes it's a garbage-can word these days, but what we're hoping to do is to break it apart so that it turns into behaviors that people can look at their own behavior, and say how do I do each one of those and, I think that the one, the believable and the connected are really challenging for some people so that is, that's.., I guess, when I look at knowledge sharing, I look at do I really

CVCT

BO

Curriculum Vitae

Albert P. Cruz

Academic Degrees

Ph.D. Candidate	Walden University, MN	2011	Knowledge Management
MA	National University, CA	2005	Human Behavior
MBA	University of Phoenix, CA	2002	Technology Management
BS	University of Phoenix, CA	2000	Information Systems

Certificate

Community College Instruction Certificate	UCSD Extension	2006

Teaching Experience

2003–Present Instructor
National University, San Diego, CA

Instruction in e-Business, Information Systems, and Information Technology Management for both graduate and undergraduate programs (School of Engineering and Technology, and School of Business and Management). Development and instruction in Information Technology Management online programs.

2006–2007 Adjunct Faculty
ITT Technical Institute, San Diego, CA

Instruction in Tax Preparation and Business Information Systems (School of Business).

Other Teaching Experience

1985–1992 Instructor
Dale Carnegie Courses, San Diego, CA

1975–1983 Instructor
Dale Carnegie Courses, Hong Kong, SAR

Instruction in Dale Carnegie Courses of Effective Speaking and Human Relations; Personnel Development and Customer Relations.

Professional Experience

1993–2002 Senior Tax Analyst / Programmer
Intuit (Formerly ChipSoft), San Diego, CA

Coded programs to support Electronic Filing Division of Tax Software Development Department. Responsible for analyzing, coding, and maintaining complex federal credit forms, federal retirement forms, and federal main forms (TurboTax and ProSeries).

1991–1993	Quality Assurance Analyst Lead ChipSoft, San Diego, CA

Responsible for managing a quality assurance team for the Macintosh and Windows platform of TurboTax. Responsible for approving release of software programs.

1991–1993	Office Manager (Seasonal) H&R Block, San Diego, CA

Managed a tax service office of 7 tax preparers. Involved in all aspects of operations between main office and quality control office. Responsible for customer service and satisfaction.

1984–1991	Insurance Broker / Owner Acanda Insurance Services, San Diego, CA
1978–Present	Director / Founder Acanda International Ltd., Hong Kong

Responsible for management, business development, hiring, training, and customer service for an insurance brokerage firm.

1975–1978	Vice President/Sales and Marketing Sentry Life Insurance Company, Hong Kong

Responsible for management, business development, hiring, training, and customer service for a subsidiary of Sentry Insurance (headquartered in Stevens Point, Wisconsin).

Community Service

2000–Present	End Child Sexual Abuse Foundation, Hong Kong	Hon. Adviser

License

Licensed	Enrolled Agent, Internal Revenue Service - #65927

Publications

Cruz, A. P., "Task-Technology Fit and Performance in Learning", 2009 International Conference on Information and Multimedia Technology in Jeju Island, South Korea, December 18-20, 2009.

Ben, L., and Cruz, A. P., "Intuition: An Often Overlooked Component in Organizational Decision-Making", ASBBS Conference, Las Vegas, Nevada, February 19-22, 2009.

Romney, G., Gordon, T., Kenney, P., and Cruz, A. P., "Integration of Services Computing Curricula in Information Technology". IEEE Conference in Honolulu, Hawaii, July 8-11, 2008.

Schaeffer, D. M., Olson, P. C., and Cruz, A. P., "Privacy, Radio Frequency Identification, and Return on Investment", Decision Sciences Institute's Southwest Region's 2007 (28th) Annual Meeting, San Diego, March 16, 2007.

Invited Textbook Review

Laudon, K. C., & Laudon, J. P. (2010). *Management information systems: Managing the digital firm* (11th ed.). Upper Saddle River, New Jersey: Pearson Education.

Invited Presentations

Cruz, A. P., "Ethics in Tax Practice." Invited presentation at the East County Chapter of California Society of Tax Consultants. El Cajon, California. September 7, 2010.

Cruz, A. P., "Ethics in Tax Practice." Invited presentation at the South Bay Chapter of California Society of Tax Consultants. Chula Vista, California. August 24, 2010.

Cruz, A. P., "Ethics in Tax Practice." Invited presentation at the San Diego Chapter of California Society of Tax Consultants. San Diego, California. May 20, 2010.

Cruz, A. P., "Ethics and Tax Practice." Invited presentation at the East County Chapter of California Society of Tax Consultants. El Cajon, California. November 7, 2009.

Cruz, A. P., "A Day in the Life of an IT Professional." Invited presentation at the Franchise Tax Board, Sacramento, California. October 30, 2007.

Cruz, A. P., "Ethics and Tax Practice." Invited presentation at the Sacramento Chapter of California Society of Tax Consultants. Sacramento, California. October 30, 2007.

Cruz, A. P., "A Day in the Life of an IT Professional." Invited presentation at the San Diego State University Students Chapter of Association of Information Technology Professionals. San Diego, California. October 26, 2006.

Cruz, A. P., "Ethics and Tax Practice." Invited presentation at the Temecula Chapter of California Society of Tax Consultants. Temecula, California. December 14, 2005.

Cruz, A. P., "Ethics and Tax Practice." Invited presentation at the North County Chapter of California Society of Tax Consultants. Escondido, California. July 14, 2005.

Cruz, A. P., "Ethics and Tax Practice." Invited presentation at the Palomar Chapter of California Society of Enrolled Agents. Carlsbad, California. June 15, 2005.

Cruz, A. P., "Ethics and Tax Practice." Invited presentation at the East County Chapter of California Society of Tax Consultants. El Cajon, California. May 3, 2005.

Cruz, A. P., "Online Education." Invited presentation at the Lions Club of San Diego Host. San Diego, California. February 2, 2005.

Cruz, A. P., "Client Records/Documents." Invited presentation at the East County Chapter of California Society of Tax Consultants. El Cajon, California. June 1, 2004.

Presentations

Cruz, A. P., presented "Task-Technology Fit and Performance in Learning" at 2009 International Conference on Information and Multimedia Technology in Jeju Island, South Korea, December 18-20, 2009.

Cruz, A. P., and Ng, J. C., jointly presented "A Proposed Knowledge-Sharing Platform". A Poster Session at the INFORMS 2009 Annual Meeting, San Diego, California. October 11-14, 2009.

Cruz, A. P., "Data and Systems Security Management." A Workshop presented at the 2009 California Society of Tax Consultants Fall Tax Workshop. San Diego, California. October 3, 2009.

Cruz, A. P. presented "Intuition: An Often Overlooked Component in Organizational Decision-Making" at ASBBS Conference, Las Vegas, Nevada. February 19-22, 2009.

Cruz, A. P. presented "Integration of Services Computing Curricula in Information Technology" at IEEE Conference in Honolulu, Hawaii. July 8-11, 2008.

Olson, P., and Cruz, A. P., jointly presented "Privacy, Radio Frequency Identification and Return on Investment" at Decision Science Institute Southwest Region Conference in San Diego, California. March 15-17, 2007.

Dey, P., Amin, M., and Cruz, A. P., "Round Trips in Modular Staged Problem-Based Learning". A Poster Session presented at the 2007 Western Association of Schools and Colleges Annual Meeting, San Jose, California. April 18, 2007.

Cruz, A. P., "Ethics and Tax Practice." A Workshop presented at the San Diego Chapter of California Society of Tax Consultants 2006 Mini-Symposium. San Diego, California. September 6, 2006.

Cruz, A. P., "Managing Your Practice: From an Ethical Point of View." A Workshop presented at the 2004 California Society of Tax Consultants Fall Workshop. San Diego, California. October 20-30, 2004.

Cruz, A. P., "Exploring e-Filing from the Inside Out." A Workshop presented at the 2003 California Society of Tax Consultants Fall Workshop. San Diego, California. September 11-16, 2003.

Cruz, A. P., Student Speaker at University of Phoenix Commencement, San Diego Convention Center, San Diego, California. June 22, 2002.