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Knowledge-Intensive Firms:
Opportunities and Limitations of
Knowledge Codification**

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**KNOWLEDGE SHARING IN KNOWLEDGE-INTENSIVE FIRMS:
OPPORTUNITIES AND LIMITATIONS OF KNOWLEDGE CODIFICATION**

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Abstract

This paper is a study of the knowledge-sharing difficulties experienced by three departments in a knowledge-intensive firm. The case organization is a global consulting firm that has been on the forefront of knowledge management and has won several knowledge management related international acclaims. Our analysis shows that there are strong disincentives in place for departments to share knowledge. We found that the nature of the businesses of the departments was very different and so were their knowledge requirements and their preferred ways to seek knowledge. Additionally, confidentiality agreements with clients and lack of cross-departmental interaction inhibited knowledge sharing outside departmental boundaries. Contrary to the common belief in the organization, we found that one single IT system could not satisfy the context-specific knowledge-sharing needs of the different departments. We suggest that some very recent breakthrough technologies could be applied to facilitate cross-departmental knowledge sharing provided they are implemented at the strategic organizational level.

Introduction

To be successful in present, it is imperative for global consulting companies to be knowledge-intensive, apply reuse economics, create knowledge and deliver quality to keep pace with constant change. They need to harness knowledge and learn faster than competition. In order to achieve that, they need to effectively and efficiently organize and manage the processes of knowledge sharing internally in the organization.

In the context of this paper “knowledge” will be taken to mean “a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information” (Davenport & Prusak, 1998: 5). We adopt the definition of ‘knowledge sharing’ as providing one’s knowledge to others as well as receiving knowledge from others (Davenport & Prusak, 1998).

Knowledge sharing among departments within the same organization is in reality not as natural as it may appear at first glance. It is an ungrounded assumption that departments will share the knowledge they possess with others or tap into the collective corporate knowledge base in order to find a solution to their problem merely because such systems have been made available to them (Sbarcea, 2001). Instead, knowledge-

sharing hostility is a phenomenon that widely dominates organizational reality (Husted & Michailova, 2002).

There are various difficulties in the process of knowledge sharing. First, knowledge is developed from the local level, e.g. by definition, knowledge sharing is embedded in a certain cognitive and behavioral context. Without understanding the context, one cannot inquire into the reasoning and the assumptions behind the particular piece of knowledge. Second, knowledge is asymmetrically distributed in any organization. Often those who possess the knowledge are not inclined to invest time and effort to share it without expecting reciprocity, as resources are finite and scarce (Davenport & Prusak, 1998; O'Dell & Grayson, 1998). Third, knowledge sharing is voluntary (Dixon, 2002) and efficient knowledge sharing depends on the willingness of individuals to identify the knowledge they possess and to share knowledge when required (Nonaka, 1994). Knowledge sharing involves direct commitment from both transmitter and receiver. If the potential knowledge transmitter is not aware that someone in the organization would be interested in the knowledge she/he possesses, she/he will not actively share this knowledge. Similarly, if the potential receiver is not aware of the existence of a particular piece of knowledge, she/he will not be able to seek it (Bouty, 2000). As human behavior is inherently opportunistic, adverse selection and moral hazard may influence the individual's motivation to share knowledge in a negative manner. Moreover, an individual's ability to appreciate new knowledge is a function of their "absorptive capacity" (Cohen & Levinthal, 1990).

The present paper focuses on the difficulties of knowledge sharing across departments within the Copenhagen branch of a global consulting company. The rest of the paper is organized as follows. First, we introduce the studied organization. We then present and discuss our data collection methods. We introduce a few selected theoretical frameworks and utilize them in the analysis of our empirical data. We conclude the paper by summing up the key points of our analysis and by suggesting solutions to the identified knowledge-sharing challenges.

The studied organization and its knowledge-sharing challenges

ConCop (ConsultCopenhagen) is a fictional name for the Copenhagen branch of a large global consulting company (referred to here as ConGlobal). The Copenhagen branch is a part of the Danish branch, which belongs to the Northern Europe office, which, in

turn, is a part of ConGlobal. ConGlobal has been on the knowledge management (KM) forefront since the beginning of the 1990s. It has several hundred full-time employees to manage its knowledge programs and over the years, it has received a number of awards as a recognition of its KM related activities.

The aim of KM as defined at ConGlobal is supporting the overall strategy of the company, becoming recognized for delivering value to clients. Proper pursuit of this vision encompasses definition and fulfillment of different roles and functions, both internally, at the established Business Knowledge Center, and externally, in terms of assigning knowledge managers in different business units of the company.

ConCop employs 500 people. Among other departments, in ConCop there are three departments: Finance Department (FD), Audit Department (AD) and Mentor services department (MD). FD provides Mergers and Acquisitions services and other advisory services. AD provides audit and business advisory services. MD services is a relatively new department, created in 2001 to help grow starting-up companies by tapping into ConGlobal's worldwide resources. MD services could provide knowledge on venture capital markets to a client company either by stepping on its own experience or by introducing the client to the AD department in order to offer audit services to it. However, due to lack of formal procedures for sharing knowledge of this type, MD services often finds it tough to reach out to AD and FD. AD has wider industry exposure in Denmark than FD. Due to its larger market presence AD is aware of clients or non-clients requiring FD services. It also conducts in-depth industry analyses. If AD shares their knowledge on industry and targets with FD, FD could derive more business. In turn, FD often comes across clients that can be potential targets for AD. If FD were to share their knowledge on targets with AD, AD could generate more business too.

Despite KM initiatives in ConGlobal, there is a definite disconnect in the flow of knowledge between FD, MD and AD. Each department can see tremendous benefits from potential knowledge sharing and yet, the latter does not take place. The departments recognize that their resources are often being employed on similar tasks at different points in time which leads to additional costs and lower revenues.

Empirical data collection

Our data collection started with getting access to and studying thoroughly sizable written material available on KM in ConCop. We have used policy statements and other

documents as a starting point for understanding the current KM structure, its utility and limitations.

Another important source of empirical data was observations as one of the authors was given the opportunity to spend three months in ConCop. This allowed us to study knowledge sharing in the real context of the organization, in real time, and without the prompting of potential distortions (or discomfort) from post hoc verbal descriptions (Lee, 1999). The participant as observer (Burgess, 1984; Waddington, 1994) role was adopted as the researcher participated fully in the organizational life but overtly as a researcher.

Conducting individual face-to-face interviews was at the heart of the data collection process. In the context of the studied organization, the choice of the word “interview” was not most appropriate: since many knowledge-sharing issues border on organization culture and strategic direction, the interviewee can be confidential or apprehensive of the questions put forward and his/her replies. Therefore, in both internal mails and phone calls we always referred to “discussions on knowledge sharing”, not “interviews”. The discussions were conducted by one of the authors using an interview guide. The interview guide was designed as a questionnaire which was filled during the discussion by the interviewer. In the questionnaire a high degree of structuring, standardizing and formalizing was utilized which has facilitated the data analysis. After filling out the questionnaire the interviewee was asked to attest his/her replies.

We opted to have middle managers as our primary respondents for two main reasons. First, in ConCop the existing KM systems are predominantly IT systems and middle managers utilize these systems most. Second, we expected to get a more realistic picture on knowledge sharing from the middle managers rather than from top-level executives since the latter ones tend to stick to official statements and “espoused values” rather than to the actual situation and “values in use”.

Two main rounds of discussions were performed. The first round was explorative, with the purpose to identify the relevant issues of investigation. These discussions were mainly with people from the Knowledge Center and the Human Resources Department. The second round was designed to more specifically uncover the issues involved in the usage of knowledge web and knowledge databases in the company. All 21 interviews were tape-recorded. In case of any additional clarifications needed, the interviewer discussed them in a subsequent informal session with the interviewee.

Distributed Knowledge

Knowledge is created by individuals and bounded by their mental models and reality perception. Knowledge is also deeply rooted in action and in an individual's commitment to a specific context – a craft or profession, a particular technology or product market, or the activities of a work group or a team (Nonaka, 2000). While working in a team, part of the knowledge gets shared and goes into forming the “collective mind”(Weick & Roberts, 1993) which lies between rather than within participating individuals (Spender, 1996). The collective mind is manifested in the manner in which individuals inter-relate their actions (Weick & Roberts, 1993). Consequently, a firm can be considered as sum of the participating individuals' knowledge. Summation produces a shared body of knowledge that, abstracted, externalized, memorized and made available to new members, could survive the departure of original individuals. So, if a firm is considered as a group of teams, the organizational knowledge should be located in the collective mind of these teams. Unless these teams interact, organizational knowledge will remain in the isolated pools of collective mind. Even when the teams interact, the knowledge sharing will be partial because no individuals in the teams possess all knowledge in the collective mind of their team.

Knowledge sharing involves socialization, articulation, combination and internalization (Nonaka, 2000). Tacit knowledge sharing is possible only through strong ties (Hansen, 1999). Assuming that a team has strong ties, tacit knowledge created by team members inside each one's head can be shared through the processes described by Nonaka (2000) among team members. Following Hansen's (1999) argument, knowledge cannot be shared across the organization as the team does not have strong ties within the whole organization. This knowledge will be different from knowledge created in another team and so on. Thus, there will be knowledge pools in the organization. In Tsoukas' (1996) framework of distributed knowledge system, ConCop can be seen as a collection of teams, where knowledge systems are decentered systems. Consequently, the company's knowledge cannot be surveyed as a whole: it is not self – contained, inherently indeterminate and continually reconfiguring.

The codification-personalization dilemma

The initial push for the growth of the interest in KM is associated with the development of IT (Scarborough et al., 1999). Some scholars (e.g. Knights et al., 1993; Ruhleder,

1995) view knowledge as being inseparable from the development of contemporary technologies. Others have considered technology as an important enabler in KM (Davenport, 1997; Ruggles, 1998; O'Dell & Grayson, 1998) by focusing on sharing explicit knowledge through groupware, databases, portals and other formal knowledge repositories (Zack, 1999). Zuboff (1996) argues that technologies are fully imbuing tasks of every sort and providing even more powerful opportunities for the kind of learning that translates into value creation.

A number of assumptions underlying these approaches have, however, been challenged by pointing out that KM relies heavily upon social patterns, practices and processes and goes far beyond computer-based technologies and infrastructures (Davenport & Prusak, 1998; Coleman, 1999; Liebowitz, 1999). Empirical evidence on inhibitors to knowledge sharing stresses the importance of behavioral and cultural factors rather than to outline reasons associated with technology (Skyrme & Amidon, 1997; De Long & Fahey, 2000). The emphasis on the role of technology for specifically knowledge codification has also been questioned by Spender (1996) and Tsoukas (1996).

The tension between technology dominance and interpersonal dynamics in knowledge sharing is reflected in the distinction between codification and personalization (Hansen et al., 1999). The key features of codification and personalization are summarized in Table 1.

Table 1 about here

Codification is based on technologies, such as intranets, electronic repositories, databases, etc. Personalization emphasizes knowledge sharing among individuals, groups and organizations through social networking and/or engaging in “communities of practice” or “epistemic communities” (Brown & Duguid, 2000; Hansen et al., 1999; Wenger, 2000). Social and interpersonal aspects seem to override technology-based and procedural mechanisms in terms of “meaningful KM” (Hansen et al., 1999). McDermott (1999: 104) concluded that the great trap in KM is using information management tools and concepts to design KM systems. Hansen (1999) maintained that strong network ties, i.e. ties associated with personal communication, are important for the sharing of tacit knowledge while non-redundant weak ties play an important role in accessing explicit knowledge from elsewhere.

The above pointed distinctions are useful provided there is an unquestionable agreement regarding tacit and explicit knowledge, existing and new knowledge, and

weak and strong ties: not in terms of what they mean in general, but rather what they mean where, when, and to whom. What a person or a group may perceive and define as explicit knowledge, can well be mentally mapped as tacit by another person or group. Similarly, a group may perceive certain knowledge as new at the same time when another group treats the same piece of knowledge as existing. Finally, what seems to act as a strong tie in one context can well be perceived as a weak one in another context.

Model 1 and 2 Knowledge Management Systems

Malhotra (2003) has developed two models of knowledge management systems (KMSs), referred to as Model 1 and Model 2.

The goal of KMS in Model 1 (Figure 1) is getting the right information to the right person at the right time (Malhotra, 2003). The underlying assumption is that all relevant knowledge, including tacit knowledge, can be stored in computerized databases, software programs and institutionalized rules and practices. Some additional assumptions are:

- The same knowledge can be re-used by any human mind or computer to re-process the same logic to produce the same outcomes;
- The same outcomes will be needed and delivered again and again through optimal use of input resources;
- The system's primary objective is to achieve the most efficient means for transferring pre-specified inputs into pre-determined outcomes; and
- There is no need for subjective interpretation of information – criticism and conflict must be minimized to achieve conformance and compliance.

Figure 1 about here

According to Malhotra (2003), in Model 2, the construct of knowledge is better represented as intelligence in action as it results from interaction of data, information, rules, procedures, best practices and traits such as attention, motivation, commitment, creativity and innovation (Figure 2).

Figure 2 about here

Malhotra (2003) emphasized that in Model 2 knowledge is represented as active, affective and dynamic rather than being limited to the domain of IT management. Knowledge is active in the sense that it is best understood in action; it is affective as it takes into consideration not only the cognitive and rational dimensions but also emo-

tional dimensions of human decision-making; and it is dynamic as it is based upon ongoing reinterpretations of data, information and assumptions. Model 2 provides a better representation of reality as it takes into consideration two key characteristics. First, what is done with data, information and best practices depends upon the subjective interpretation of individuals and groups that transform these inputs into actions and performance. Second, performance outcomes need to be continuously re-assessed to ensure they represent best business performance for the enterprise with respect to changing conditions (Malhotra, 2003).

Knowledge Sharing in ConCop: Analysis

We develop the analysis of knowledge sharing in ConCop by taking FD as the knowledge recipient and AD and MD activities as knowledge transmitters to FD. Similarly, either AD or MD can be considered as a recipient and the respective analysis can be conducted.

Our analysis of the interview data suggests that the FD knowledge requirements are of two types: knowledge on targets and knowledge on industry. We have identified the following three knowledge sources:

- Personal networks
 - Counterparts in other regional offices of ConGlobal;
 - Other industry experts (e.g. old colleagues from university, other companies, etc);
 - Business associates in ConDenmark (outside FD), for instance in AD.
- External sources;
- Internal sources (e.g. Knowledge Center reports, community home spaces, etc.).

The major knowledge requirements of FD are met through networks and external sources. AD and MD can provide the knowledge required by FD if they can contribute either knowledge on targets or knowledge on industry. As mentioned earlier, AD has broader market exposure and can definitely contribute in the “knowledge on targets” area by providing FD with possible leads to targets. Since AD has broader exposure to clients, it can also contribute its industry expertise in “knowledge on industry” area. AD can contribute this “knowledge on industry” either by applying a codification or a personalization strategy.

MD services can contribute in the “knowledge on targets” area by providing leads to FD of probable targets or leads of people in the network who know the probable clients. FD draws most of its knowledge on targets and industry both from networks and external sources and both AD and MD can contribute to the knowledge FD derives from its networks. Neither AD nor MD can contribute to knowledge from external sources.

If knowledge that will help FD is to be shared, it can be done in one of the following ways:

- Knowledge on industry through Codification
- Knowledge on industry through Personalization
- Knowledge on targets through Codification
- Knowledge on targets through Personalization

According to all our respondents, knowledge on targets through codification in ConCop is either highly inefficient or not suitable. Regarding the possibility to share knowledge on targets and industry through personalization, we have observed that FD professionals do not interact with other departments in the firm. Several AD audit professionals admitted that they “do not know anything except that there is a FD office in this house”. Since no systems are involved in this process, the reason for not sharing through personalization remains to be associated with the single consultants.

AD and FD provide very different services. Consequently, it would be logical to expect that their knowledge requirements will differ too. This issue was clarified in the interviews when audit professionals confirmed to using the internal sources as rarely as FD professionals. Table 2 summarizes some of the key differences in business activity between the two departments and lists the implications on knowledge requirements. The comparison is useful in establishing why sharing industry-related knowledge between these two departments through codification is difficult.

Table 2 about here

As it can be seen from Table 2, FD requires knowledge that is different from AD in at least two dimensions. First, it requires more time-dependent, complex and wider industry knowledge due to its short engagements. Second, it requires better information on its networks both due to its interaction with top management and high involvement services and due to its requirement to remain better informed of the changes in the environment.

Keeping the time constant, the AD team and the FD differ on a number of important dimensions, such as number of industries they deal with, number of sub-sectors they are involved with, number of transactions they conduct and number of external actors they interact with. Based on discussions with AD and FD managers as well as observations on the nature of the business of the two departments, we can conclude that FD is exposed to a much more unstable environment with many more unpredictable factors at every point. Stepping on Malhotra's (2003) framework, we argue that FD needs a Model 2 based KMS whereas AD would profit from exercising a Model 1 based KMS. Hence, there is good justification in that maybe the system itself is incompetent for such dynamic and complex knowledge sharing.

Furthermore, we argue that FD work is more close to a management consulting organization than to an audit firm. And perhaps it is not a coincidence that most consulting organizations prefer to use a personalization approach (that can be considered to be much closer to Model 2 KMS) for knowledge sharing. However, we have observed that though AD does not interact regularly with FD, nevertheless both departments have introduced a few recent initiatives in the form of regular meetings to discuss how business knowledge can be shared. Few interviewees have reported satisfactory progress in this regard. ConGlobal and ConDenmark have urged both departments to share knowledge. Both the industry reports regularly produced by AD and the interviews have established that AD does possess the knowledge needed by FD.

Several interviewees stated that the two KMS models behave as two separate silos in ConCop. As mentioned by a Human Resources manager responsible for creating performance appraisal systems in ConCop, there are no incentives for sharing knowledge or for selling more Type 2 services. Additionally, incorporating incentives for selling Type 2 services will be against the new corporate governance rules being adopted in international business. Discussions with interviewees have led us to conclude that this area constitutes a minefield. Therefore, as a background and support for further discussion, it is essential to consider the following brief from ConGlobal Knowledge Sharing Policy document:

“Our clients expect (1) us to bring them our accumulated experience to solve their business problems. (2) They also expect us to maintain the confidentiality of their information. (3) We have an obligation to protect our intellectual assets and receive appropriate compensation

when we apply them in serving clients. As a world-class professional services organization, we have always maintained an appropriate balance among these three objectives. As we move forward in a technology-enabled environment that increasingly permits us to rapidly share and access knowledge electronically, it is important that we continue to maintain this balance. We also must continue our commitment to avoiding unauthorized reproduction of information or materials belonging to others and to maintaining the security of our intellectual capital. We must promote the sharing of knowledge across international boundaries. Lastly, we must be clear on responsibilities for knowledge management and quality”.

AD maintains that Type 2 services cannot be sold to audit clients (customers already being served with Type 1 services but potential clients or targets for FD); hence AD executives protect their clients, as they are duty-bound by confidentiality agreements. However, FD maintains that there are certain Type 2 services that can be sold to audit clients – they maintain this as is the case particularly in Denmark. Both these arguments are supported by the knowledge sharing policy document.

Point (2) in the document cited above refers to confidentiality - the stand of AD department. The extract “*generally avoid entering into agreements with clients that restrict our ability to share knowledge beyond what is required to protect client-confidential information*” suggests that both AD and FD should refuse entering into agreements that restrict their ability to share knowledge. Either department could use this statement against the other if it is overly protective of its client. The confidentiality argument will only lead to more disputes since only the department protecting its client has the complete authority over the clients and the knowledge therein, not the other department.

Moreover, despite AD executives maintaining that they cannot sell Type 2 services to their clients, AD management, ConDenmark management and ConGlobal strategy initiatives implore AD executives to help sell more Type 2 services. This implies that from a AD executive perspective, it is best to avoid this potential minefield. Therefore, there is a clear disincentive in sharing any knowledge on this aspect. This is exactly the point of disconnect. FD is aware that AD is bound by confidentiality. AD has

the knowledge on clients as well as on industry. Since AD assumes the worst-case scenario, they refuse to share knowledge also on their industry expertise. This leads to a serious interaction gap. There can be a win-win situation provided both parties agree to share the knowledge that is present in public domain instead of deliberately claiming all knowledge to be confidential.

FD has strong ties (Granovetter, 1973) within the department that are good for problem solving and idea generation (Hansen, 1999). The ties which will be established as people locate competencies in the network will be weak ties that can assist bringing non-redundant knowledge into the group. Several of our interviewees currently use lists to locate experts outside their groups within ConGlobal. However, this interaction is usually among people belonging to the same department across countries, not across departments within the same organization. The frequency of such interaction on an average is about once a fortnight per person interviewed. The frequency is much higher for senior than junior executives. We found no evidence relating to regular cross-department interactions. In fact, several people in AD have no information on the people in FD – how many people are there, what is their expertise, etc.

This raises two concerns. First, the frequency of interaction is highly limited and only among similar groups. Second, the two departments are far from visible to each other. Littlepage (1995) found that individual perception of others' expertise is closely related to the rate of others' participation in the discussion rather than their actual expertise. Therefore, it is important that organizational members who look for active interaction make themselves visible to their counterparts.

At this point of our analysis, we bring in the third department under consideration, MD services. This is a relatively new department which aims to help grow a starting up company by tapping into worldwide resources of ConGlobal. MD services could provide knowledge on venture capital markets or introduce the client to the FD department if a need for raising capital arises or if the company wants to buy or sell a part or in full. This is a clear business opportunity for FD that MD services brings to FD's doorstep. However, our discussions with FD professionals have shown that taking up business with starting up companies is not cost-effective for FD. FD could maintain a database of solutions which can help FD in picking up the closest solution it has for a particular requirement at a Start up company and then customize it to the client's satisfaction. However, such a suggestion will take the discussion back to Malhotra's (2003)

Model 1 that has already been proven less applicable in FD's case. Similarly, FD can share knowledge on targets that might be of interest to Start-up services. Also, FD and MD can share knowledge on industry with each other. All our interviews and informal conversations have proven this observation to be correct. FD and AD can leverage on the knowledge of relationships that MD services can provide due to its strategic position that helps it connect to the venture capital industry and private equity investment community. This is the knowledge on relationships in the market that FD will be most willing to take up.

As claimed by DiMaggio and Louch (1998), buyers tend to prefer social relations to make purchases of one-time items. According to them, within networks exchange reduces buyer risk by imposing cost on sellers who take advantage of opportunities to exploit advantages internal to the exchange. The commercial transaction is embedded in a multiplex network of ongoing interactions, so that the actors' behavior in the commercial exchange influences the way in which he or she is treated by many different actors across a range of interactions extending well into the future. This implies that buyers are more willing to buy such services from within their network. Seen from a FD perspective, it will be easier for FD department to sell services if they have a relationship with the target. DiMaggio and Louch (1998) also state that people who transact with members of their social relations are more likely to report high levels of satisfaction with the product or service they receive. This, in turn, implies that from a sum total of such transactions, it is likely that FD will always end up with positive points. This will add up to both a larger network and positive future references and this, in turn, can potentially drive the business in an upward rising spiral.

Apart from personal networks, this analysis can be done on the basis of organizational networks. According to Uzzi (1996), organization networks operate on a logic of exchange which differs from the logic of markets: ongoing social ties shape actors' expectations and opportunities in ways that differ from the economic logic of market behavior. The level of embeddedness in an exchange system produces opportunities and constraints that are particular to network forms of organizations and that result in outcomes not predicted by standard economic explanations. Figure 3 illustrates an example of MD and FD working on a network logic.

Figure 3 about here

Figure 3 shows that MD services has a vast network of angel investors, venture capital companies and private equity companies which invest in companies that may be start-ups or later stage companies. MD services can regularly draw on the networks of its investors and feed any contacts that they may have to FD and AD. If FD was to leverage this network, it is very likely that in a small economy like Denmark, they will find relationships that help them grow their business. Following Uzzi (1996), embeddedness shifts actors' motivations away from the narrow pursuit of immediate economic gains toward the enrichment of relationships through trust and reciprocity. Trust helps reduce transactional uncertainty and creates opportunities for the exchange of goods and services that are difficult to price or enforce contractually. Larson (1992) reported that "thicker information" on strategy, know-how and profit margins is transferred through embedded ties, thus promoting learning and integrated production in ways that the exchange of only price data cannot. For both departments there is serious business potential in accepting knowledge on social networks from each other.

Conclusion and proposed solutions

Knowledge sharing among the three studied departments in ConCop is hindered by a few important factors. One of them is the different nature of the everyday business activities they are engaged in. FD operates in a more unstable business environment than AD and therefore, the current IT-based KM system does not yield outcomes acceptable to FD. For its KM strategy, FD needs to differentiate between IT and KM and employ IT for sharing of explicit knowledge only. Other departments may find existing IT systems more suitable but still like FD, they should exploit the network-based knowledge.

The nature of the business of the three departments predispose different requirements to the type of knowledge sought as well as different preferences to how the needed knowledge is obtained. We have identified three clusters of people in this respect. The first group sought knowledge to speed up certain processes. The second group was looking for standard templates to be used to save time to perform well-documented tasks. The third group was not looking for knowledge on a particular topic but for a peer who possessed the needed specific knowledge. Their cost of searching the database for real nuggets of knowledge, making sense of the document and then applying it to the situation at hand far exceeded the cost of finding and contacting the expert and taking first-hand advice.

A second barrier to cross-departmental knowledge sharing is the way codification and personalization is utilized by the different departments. Knowledge sharing on industry through codification is difficult since the knowledge requirements of the departments differ. Knowledge sharing on industry and targets through personalization is difficult because of confidentiality agreements with clients. Knowledge sharing on targets through codification was considered unfeasible.

Additionally, the current KMSs in ConCop heavily rely on IT databases, they are too structured and slow to provide new knowledge required by the departments. Inter-departmental interaction was found lacking, more severely so in case of AD and FD. This was due to the organizational structure and confidentiality agreements. We also found that the mutual visibility of the departments to each other within ConCop was less than their visibility to their counterparts in other ConGlobal offices.

If it is knowledge of networks that can drive the business, then why is this knowledge not harnessed? We found a possible answer in an ongoing social networks based research project entitled “small world project” (Watts et al., 2002) according to which any individual can reach any other individual in the world in short chains of social ties. These authors point out that despite the “it’s a small world after all” phenomenon and the “six degrees” theory of social connection, people still appear largely disconnected because they only have local information on networks. People tend to limit the members in their immediate group to a number that is cognitively manageable. If someone asks for an introduction to someone, we can often think only of our immediate group and if none of those people can help, then the chain breaks. There is no methodical way of finding the person in the network. However, there are systems available that can be used to manage such relationships. Time Inc. 2003 writes:

“What started as a bit of Net-induced whimsy is rapidly spawning some of the most interesting business software on the planet. Call them social network applications – computer programs that analyze networks of people, their contacts, and even their ideas. The programs of everything from helping salespeople generate leads to ferreting out connections among criminals to matching people in sprawling corporations with other folks in-house who are working on similar projects. Social networking applies the power of the network to one of the most fundamental problems in all of business:

finding the person who has the critical information you need, right when you need it. That is why business 2.0, a magazine from Fortune Group, Time Inc. has selected social networks as our Technology of the year for 2003”.

With support from these new IT tools, it is possible to virtually scan all personal networks in an organization to exploit the value in relationships. This new emerging field of social network analysis and tools, also called relationship capital management, is, in our view, an optimal tool to be employed to increase knowledge sharing between the departments. The best way to share industry knowledge would be to share competencies in a network. This would enable department teams to interact outside their closed group to bring in new information not only from their own groups in other offices but also from other industry sources known to other departments. The new knowledge from this interaction will help increase the respective groups' situated expertise, which, in turn, will most likely increase group performance. It is also likely that increased group performance will make the departments more visible to each other. This can potentially build more confidence and trust among departments and will possibly in the future bring more revenues.

The IT systems we propose are related to sharing knowledge based on competencies and relationships, a kind of knowledge which is explicit and can be shared as suggested by Malhotra (2003) whereas the IT systems we discount, particularly in the case of FD, are systems trying to enable sharing tacit knowledge. Knowledge changes faster than the systems can keep up with. Moreover, the IT systems suggested are such that they can be kept locally, need no maintenance, are self-driven and are very simple. These systems do not need any user intervention for loading, running or maintaining. All these characteristics are in direct contrast of the characteristics of the IT systems currently employed in ConCop for sharing knowledge.

Table 1: Codification and personalization strategy for knowledge sharing

Codification strategy	Personalization strategy
Competitive strategy	
<ul style="list-style-type: none"> • Provide high quality, speedy and reliable information by using codified knowledge 	<ul style="list-style-type: none"> • Provide creative, analytical rigorous advice on high-level strategic problems by channeling individual expertise
Economic Model	
<p>Reuse economics</p> <ul style="list-style-type: none"> • Invest once in a knowledge asset and reuse it many times • Use large teams with a high ratio of associates to partners • Focus on generating large overall revenues 	<p>Expert economics</p> <ul style="list-style-type: none"> • Charge high fees for highly customized solutions to unique problems • Use small teams with a low ratio of associates to partners • Focus on maintaining high profit margins
KM Strategy	
<p>People – to – documents</p> <ul style="list-style-type: none"> • Develop an electronic document system that codifies, stores, disseminates and allows reuse of knowledge 	<p>People – to – people</p> <ul style="list-style-type: none"> • Develop networks for linking people so that tacit knowledge can be shared
Information Technology	
<ul style="list-style-type: none"> • Heavy investment in IT; the goal is to connect people with reusable codified knowledge 	<ul style="list-style-type: none"> • Moderate investment in IT; the goal is to facilitate conversations for exchange of tacit knowledge
Human Resources	
<ul style="list-style-type: none"> • Higher new graduates who are well suited to the reuse of knowledge and the implementation of solutions • Train people in groups and through computer based distance learning • Reward people for using and contributing to document databases 	<ul style="list-style-type: none"> • Higher M.B.A. graduates who like problem-solving and tolerate ambiguity • Train people through one-to-one mentoring • Reward people for sharing knowledge with others on a personal basis
Examples	
<ul style="list-style-type: none"> • Ernst & Young, Accenture 	<ul style="list-style-type: none"> • Mc Kinsey & Co, Bain & Co

Figure 1: KMS model 1 (Source: Malhorta, 2003)

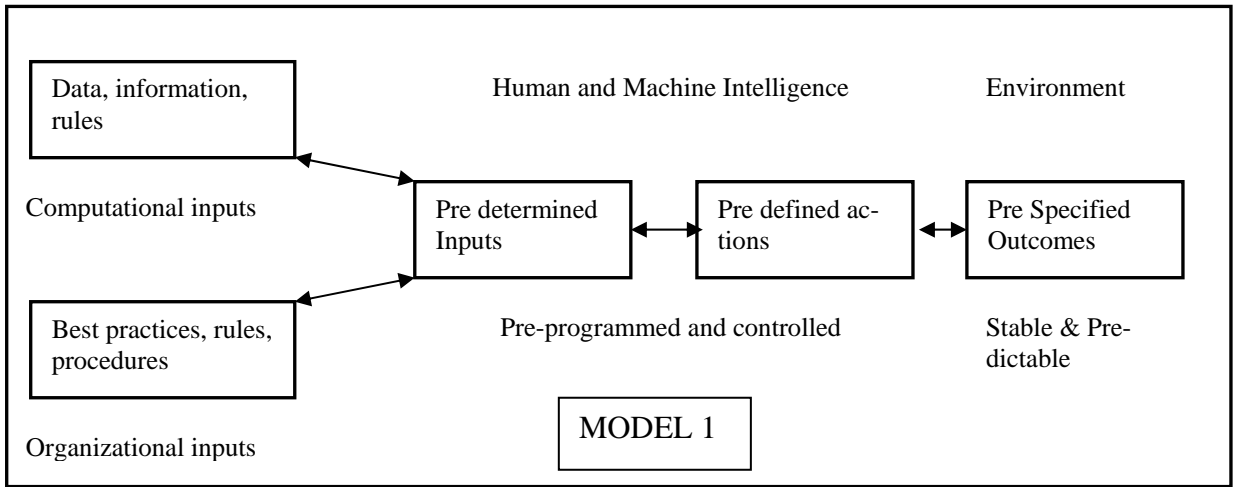


Figure 2: KMS model 2 (Source: Malhorta, 2003)

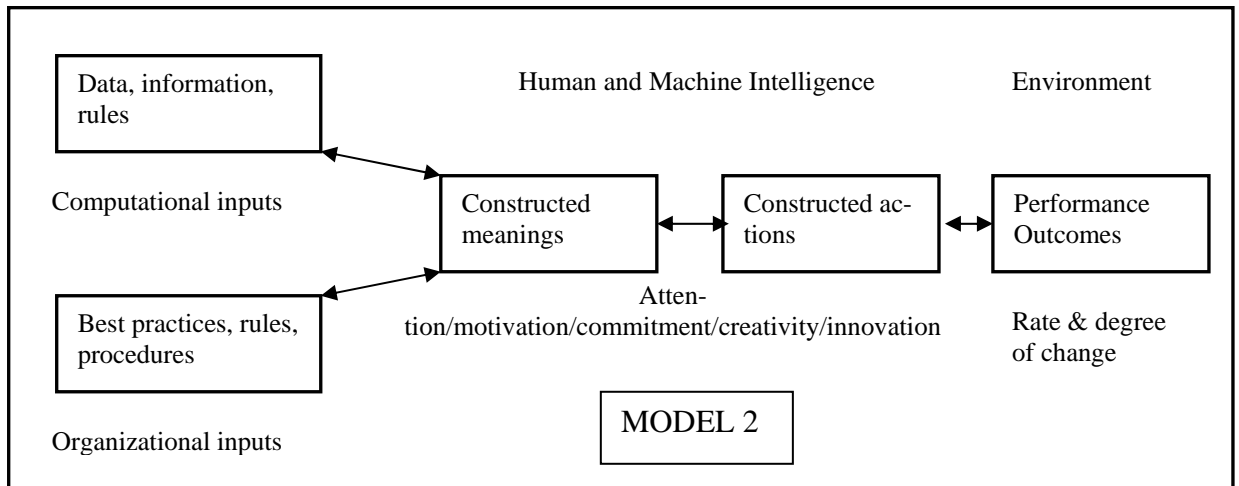
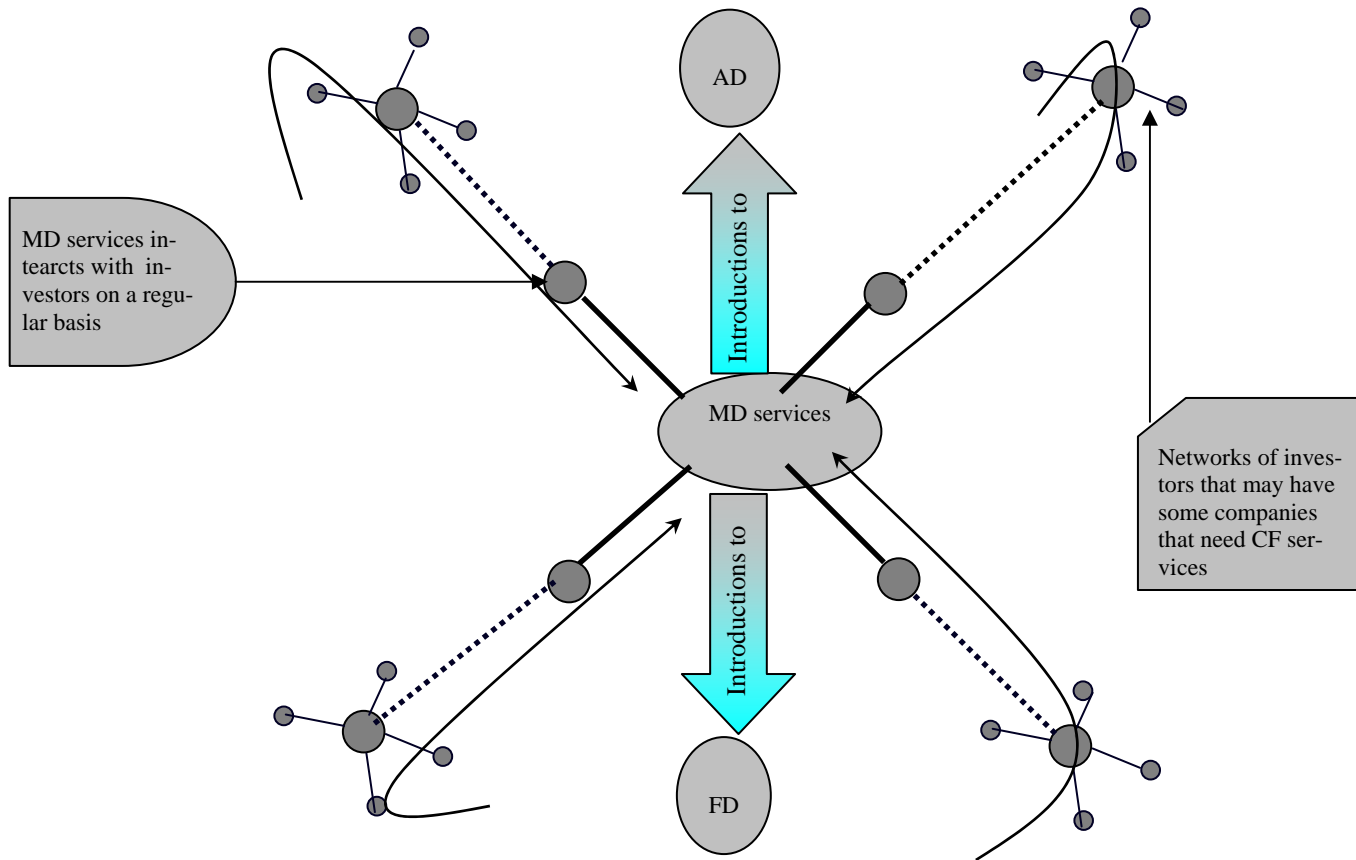


Table 2: Comparison of AD and FD business and the consequences for knowledge seeking

No.	AD	Corporate Finance	Implications on knowledge requirement
1	Audit is a localized business driven by local laws and regulations for local companies. ConDenmark caters to many mid-size audit clients	FD services are more often regional than local. Buyers or sellers of companies looking for M&A services could be located in any part of Europe or another part of the world	FD would require wider industry knowledge than AD
2	Audit work focuses on client operations	FD work focuses on client strategy	Knowledge required for industry or a company would be of strategic type for FD than for Audit
3	AD sells high involvement service	FD sells very high involvement services	For FD, clients always look for references – contacts in the industry
4	AD engagement lasts for a number of years	Usual engagement is short-term, at the most a few months	FD has shorter time frame to acquire wider industry, sub-sector, company knowledge than AD
5	There is considerable time lag between changes in the environment and their effect on the way audit is done	Since engagement time is shorter and the involvement is high, time is scarce	Knowledge life time is shorter for FD. FD needs a strong network that can constantly feed it the new knowledge
6	AD draws regular income from clients	FD engagement is based on success fee	There is less margin of error and shorter time to gain back lost trust in case of any issue
7	AD interacts with middle management	FD interacts with top management	This puts greater pressure on FD for delivering the right knowledge all the time

Figure 3: Utilizing network relationships on the example of FD and MD



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