

The Role of Knowledge Management in Enhancing the Competitiveness of Small and Medium-Sized Enterprises (SMEs)

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Abstract

Knowledge is one of the enterprise's most important assets that influence its competitiveness. One way to capture an enterprise's knowledge and make it available to all its members is through the use of knowledge management practices. This paper discusses the importance of knowledge management (KM) in Small and medium-sized enterprises (SMEs) and presents a framework to deal with knowledge management in order to enhance their competitiveness.

Small and medium-sized enterprises (SMEs) are known for too much implicit knowledge, limited resources, insufficiently shared between managers and other employees. So, in the context of SMEs, KM can be used to capture knowledge and experience generated during their operations, activities, and processes. This research paper addresses a new way of thinking about the role of KM in SMEs through developing a framework that combines five phases of the KM lifecycle (capture, creation, codification, communication, and capitalization). This framework is called "A Five C's Knowledge Management Framework". The application of this framework will improve the success rate and competitiveness of SMEs.

Keywords: Small and medium-sized enterprises (SMEs), knowledge (K), knowledge management (KM), organizational memory (OM).

1. Introduction

The environment in which businesses operate today can be summarized in terms of five key trends: globalization and the increasing intensity of competition; changing organizational structures; new worker profiles, preferences and predispositions; advances in information and communication technology; and the rise of knowledge management KM (Hall, 2003). The basic assumption of KM is that organizations that manage organizational and individual knowledge better will deal more successfully with the challenges of the new business environment. KM is seen as a key factor in realizing and sustaining organizational success for improved efficiency, innovation and competition.

In SMEs (small and medium enterprises) individual competences usually represent the cornerstone of a firm's knowledge and a key determinant of organizational performance. The increasingly fierce competition deriving from globalization and ICT has challenged this approach calling for new ways to develop, diffuse and retain knowledge in SMEs. Starting from the assumption that SMEs' core capabilities and intellectual capital are deeply rooted in personal knowledge, this paper identifies a knowledge management model for managers working in SMEs in order to best utilize and harness the knowledge of their workers.

In the context of SMEs, KM can be used to capture the knowledge and experience generated during the operations and processes. Reusing knowledge can prevent the repetition of past failures and guide the solution of recurrent problems. Also, we must not forget that collaboration is one of the most important knowledge sources for SMEs. The current focus and study of knowledge management is not for the sake of academics only, but a realization that knowing about knowledge is critical to business growth and business survival. Knowledge, if properly utilized and leveraged, can drive organisations to become more competitive, innovative and sustainable,

KM is an emerging discipline that promises to capitalize on enterprises' intellectual capital. The concept of knowledge is far from new and phrases containing the word knowledge, such as "knowledge bases" and "knowledge engineering", have been around for a while.

With reference to KM in SMEs, Davenport and Prusak describe knowledge as "a fluid mix of framed experience, values, contextual information, and expert insights and grounded intuitions that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of the knower. In SMEs, knowledge often becomes embedded not only in documents or repositories, but also in organizational routines, processes, practices, and norms (Davenport and Prusak, 1998). Knowledge is increasingly recognized as a key organizational asset and its creation, dissemination, and application as a critical source of competitive

advantage (e.g. Lester 1996; Lloyd 1996; Marshall et al. 1996).

At the level of SMEs, investments on intangible resources and the creation of capabilities are quite problematic because of the necessity to increase the efficiency scale or size, in addition to the difficulties related to the internal and external growth through fusions or acquisitions (Pil and Holweg 2003). However, alliances and cooperation may allow SMEs to reach a sufficient dimension to obtain the advantages of being large and, at the same time, keep the advantages of SMEs in terms of specialization, reduction in costs, and flexibility (Pil and Holweg 2003; Fernandez, Montes, and Vázquez 1996). That is why we consider it interesting to look at whether, from the SMEs' perspective, it is possible to obtain competitive advantage by the promotion of intangible factors and capabilities as large firms do.

An increasing body of research maintains that, in the knowledge economy, knowledge, not other assets, represents the critical resource for both business and individuals (Thurow, 2002). In SMEs it is individual competencies which represent the cornerstone of a firm's intellectual capital (Stewart, 1997; Nahapiet and Ghoshal, 1998) and a key competitive factor. The increasingly fierce competition deriving from globalization and ICT has challenged this approach, asking for new ways to develop, diffuse and retain knowledge in SMEs. Shortening time to market, reducing costs and increasing product quality and customer service, all drive innovation in SMEs and force these companies to update their competencies and skills.

SMEs are heavily dependent on tacit knowledge, which is very mobile (Tiwana, 2000). If a person with critical knowledge about processes and practices suddenly leaves the organization, severe knowledge gaps are created (Brössler, 1999). Therefore, it is more important for SMEs to exploit and manage their intangible assets in contrast to their physical assets (Tiwana, 2000).

Knowledge management is now a well-established discipline in many organizations. But what is its status and role in small and medium enterprises? This paper explores this question. It starts by tracing the evolution of knowledge management and summarizes its key characteristics. This is followed by a review of current understanding of knowledge management in small-and medium-sized enterprises (SMEs). This suggests that knowledge management life cycle – the process of capturing, creation, codification, communication and capitalization knowledge into commercial products and services – is probably the most fruitful area for focus by SMEs managers. The paper concludes

with a five C's framework in which such processes might be developed and practiced.

2. Research problem

In SMEs there is a knowledge-intensive business that involves many people working in different phases and activities. The knowledge in SMEs is diverse and its proportions are immense and growing. Organizations have problems keeping track of what this knowledge is, where it is, and who has it. A structured way of managing the knowledge and treating the knowledge and its owners as valuable assets could help organizations leverage the knowledge they possess, as such, it could benefit from the ideas of KM. The important question is, however, where knowledge resides in SMEs.

The SMEs offer two advantages in initiating research on knowledge management. As Davidson and Griffin (2003) comment, small businesses have contributed many innovative ideas and technological breakthroughs to our society. Further, decisions in SMEs are often enacted within a shorter time frame than in larger organisations.

KM may be particularly relevant for SMEs. Typically, SMEs have between 20-50 employees. As such, these firms tend to be relatively more dynamic and agile than larger organizations, and more ready to learn. However, they are often more vulnerable than larger organizations to the loss of key personnel. Therefore, the main issue of concern to this paper is how to effectively establish and sustain good knowledge management model in SMEs in order to ensure their competitiveness in the new business environment.

The SMEs do not like to share knowledge even within the company. The managers are afraid of losing the control of knowledge. However, since they close the information channels, they also prevent the incoming knowledge. Moreover, a significant majority of SMEs are not using knowledge management techniques. An argument which at times can be detected in practice is that SMEs have less need for knowledge management than large companies since dialogue and exchange of experiences is much easier to handle in small units. Nevertheless, analyses show that this might well be a myth because the aspect of size can reduce focus due to a presumption that knowledge exchange is a self-supporting phenomenon. i.e. the idea that "small is beautiful", and hence easier, can be a dangerous rhetoric within the field of knowledge management.

There has been much literature on the practise of knowledge management within large organisations

and little information available on SMEs (small-to-medium-sized enterprises). KM seems to have been successfully applied in large companies, but it is largely disregarded by small and medium sized enterprises (SMEs). This has been attributed primarily to a lack of a formal approach to the sharing, recording, transferring, auditing and exploiting of knowledge.

To date, very few publications have been found that describe how small and medium enterprises (SMEs) are adopting knowledge management (KM). The same is true concerning attempts to develop a framework to help them implement it. To redress this, this paper presents a new framework to help in creation, capturing, codification, communication and capitalization the knowledge available in (SMEs) in order to enhancing their competitiveness.

It is often asserted that many SMEs in particular appear to be failing to exploit the information, knowledge, and skills in the knowledge base (KB) embodied in higher education, research institutes, and large companies. Therefore, there is a pressing need for a theoretically rigorous and empirically relevant framework for examining the use of KM in small and medium enterprises (SMEs).

In sum, the research problem is defined as “developing an integrated model for knowledge management in (SMEs) including the phases of knowledge management lifecycle and the types of knowledge required in (SMEs). This model will help individuals who are working in (SMEs) to identifying what type of knowledge – that is available for (SMEs) workers – to capture, create, codify, communicate and capitalize.

3. Literature Background

Most management studies agree on the importance of knowledge as a firm's strategic asset (Barney, 1991; Hamel and Prahalad, 1994; Nonaka, 1994; Teece et al. 1998). Building on the concept of a firm as a bundle of routines (Nelson and Winter, 1982), an increasing body of research focuses on how firms can capture value from knowledge and dynamic capabilities (Teece et al. 1997; Davenport and Prusak 1998; Cross et al., 2001).

Indeed, intellectual capital comprises two types of knowledge and knowing; the individual and the organizational (Nahapiet and Goshal, 1998). In SMEs, where organizational structures and management systems are usually informal, and where some key people, such as the owner/entrepreneur, family members, managers and partners, play the most relevant roles, individuals represent the main and sometimes

exclusive repository of organizational knowledge. Therefore the personal, tacit (Polanyi, 1962) knowledge and knowing tends to be the core component of a firm's intellectual capital. The individual knowing part of intellectual capital, how individual learning processes contribute to the organizational knowledge creation process, has been studied by Nonaka and colleagues (Nonaka, 1994; Nonaka and Takeuchi, 1995; Kusunoki et al., 1998). Less emphasis has been put on studying the individual component of intellectual capital related to personal knowledge, i.e. the endowment of competencies that is at the basis of a person's learning and actions, and, consequently, on the relation between individual competence and organizational capabilities.

In SMEs, one can identify two types of knowledge:

1. Knowledge embedded in the products (artifacts), since they are the result of highly intellectual creative activities.
2. Meta-knowledge, that is, knowledge about the products and processes.

Knowledge

There have been many definitions made on the topic of knowledge within organisations and as discussed earlier a variety of philosophical discussions on the true meaning of knowledge. Davenport and Prusak offer working definition of knowledge within organisations, as follows: ‘Knowledge is a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knower. In organisations, it is often becomes embedded not only in documents or repositories but also in organisational routines, processes, practises, and norms.

Knowledge is increasingly claimed to be a key critical resource and source of competitive advantage in the modern global economy, it is also increasingly claimed that all organizations will have to excel at creating, exploiting, applying, and mobilizing knowledge. The resource-based view of the firm suggests that organizations will need to be able combine distinctive, sustainable, and superior assets, including sources of knowledge and information, with complementary competencies in leadership and human resource management and development to fully realize the value of their knowledge.

When examining one's own experience, knowledge is much more obscure than definitions allow. ‘Knowing is a human act, whereas information is an object that can be filled, stored and moved

around. Knowledge is a product of thinking, created in the present moment, whereas information is fully made and can sit in storage. To share knowledge, we need to think about the current situation, whereas we can simply move information from one mailbox to another. However, knowledge is more than you think. Knowledge settles into our body. It is a kind of “under the fingernails” wisdom, the background know-how from which we draw. Most of us find it hard or impossible to articulate what we know; whereas information can be written or built into machinery. We acquire knowledge by participating in a community-using the tools, ideas, techniques, and unwritten artifacts of that community; whereas we acquire information by reading, observing, or otherwise absorbing it (Wiig, 1997).

Organisations have a wealth of knowledge which, is embedded in people’s head, work practises, and systems. The challenge for organisation is to be able to capture that knowledge and to leverage it throughout the organisation. This challenge has driven organisation to codify knowledge. Codification describes the process of converting knowledge into a form which is accessible, easy to find, and portable. Knowledge within organisation can be classified into two types, one which is structured explicit-formalized and expressed knowledge and the other tacit knowledge-complex, resides within the individual, difficult to articulate or communicate adequately, and is based on practical skills and actions. This dynamic process of converting tacit to explicit is the basis for knowledge creation within organisation. The need to codify, transfer and leverage knowledge within organisations, is one of many tasks that organisations need to undertake (Nonaka and Takeuch, 1995).

Four ambitions are prevalent when knowledge is put on the agenda. These are: 1) a strengthening of the competitiveness, 2) an increase in the added value for the customers, 3) a stimulation of the innovative abilities and 4) an improvement of the work climate. This last point should be considered from the point of view that knowledge oriented enterprises should be driving forces in improving the standards for creation of attractive places to work. In this respect it should also be mentioned that the key to development lies in the pocket of the knowledge worker. For that reason, it is clear that the question of management of people and processes has a high priority on the managerial agenda.

Knowledge management

For Bassi (1997), knowledge management (KM) is the process of creating, capturing, and using knowledge to enhance organizational performance,

such as documenting and codifying knowledge and disseminating it through databases and other communication channels.

KM is often seen as involving the recognition, documentation, and distribution of both explicit and tacit knowledge residing in organizations’ employees, customers, and other stakeholders (Rossett and Marshall 1999).

Drucker (1993) considers knowledge the main resource in a post-industrial society, Romer (1990) the only unlimited resource, and business leaders or consultants the chief asset of organisations and the key to a sustainable competitive advantage (Nonaka and Takeuchi 1995, Davenport and Prusak 1998). Knowledge management is the corollary, actually, of decision-making and decisions support systems: ‘Knowledge is raw material, work in process and the finished good of decision making’ (Holsapple 1996).

SMEs considerations

There are an increasing number of studies focusing on the main competitive factors of SMEs. The literature on this field shows that intangible factors (Grant 1991), such as structure and organizational change (Feigenbaum and Karnani 1991), human resource management (Bacon et al. 1996), innovation, and technological resources (Hitt, Hoskisson, and Ireland 1990), among others, are elements that clearly contribute to the SMEs’ competitiveness and success.

The study and explanation of business competitiveness is a recurring theme examined by academics, consultants, and practitioners. The internationalization of economy, the frequent and uncertain changes, the greater competition among firms, the need for continuous innovations, and the growing use of information technologies force companies to face the challenge of improving their competitiveness. These difficulties are greater for small and medium enterprises (SMEs) because their economies of scale and their resources are less than those of large firms. However, what compensates for these weaknesses is the fact that SMEs may enjoy greater flexibility because of the simplicity of their internal organization, being faster at adapting and responding to changes. This new situation reveals the need to suggest or find more efficient management processes so that SMEs can apply strategies that allow them to achieve a better performance.

The new knowledge-based economy is built on information technology and the sharing of knowledge and intellectual capital. In such a knowledge-based economy, competitive advantage will be with those enterprises that have the capacity

to deliver fast and have innovative forms of processes that raise productivity. In such an environment, small and medium-sized enterprises (SMEs) have tremendous opportunities. Implicit promises include access to world markets, low-cost entry into new markets and the ability to gain efficiencies in business processes. However, these promises may be illusory for most SMEs. Technological, organizational and marketing hurdles are also making it more difficult for SMEs to succeed in knowledge-based economies.

The European Union (EU) definition for small and medium size enterprises (SMEs) was introduced by the European Commission on April 1996. SME is classified in three groups including medium, small and micro enterprises. Its definition is based on the number of paid employees, turnover, balance sheet total, and independence. Independence is the ultimate criterion to justify enterprises to be a SME. Independence means less than a quarter owned by one large company or several companies. The European Commission defines a SME based on the following criteria in next table:

Table 1 EC SME definition

Types	Medium	Small	Micro
Maximum number of employees	250	250	10
Maximum turnover (in million ECU)	40	7	-
Maximum balance-sheet total (in million ECU)	27	5	-

But talking about SMEs there are other important considerations to take into account other than the legal or formal consideration. SME are quite different between themselves, they don't share a common vision and are usually not rich in resources. Usually, roles in these kinds of companies are poorly defined. It's common to find the same person sharing different roles. A lack of specialized experts in Knowledge Management is also usual. Finally, SME do not participate in the Stock Market, so all the market capitalization methods must be rejected.

Competition requires small and medium-sized enterprises (SMEs) to seek both external and internal knowledge and to establish external and internal relationships with partners such as customers and suppliers. This paper aims to describe a model that examines how knowledge management can enhance the competitiveness of SMEs.

Knowledge in SMEs

In today's economy, many of the high value-added SMEs are likely to be knowledge intensive, either in the processes they deploy or the products and services they produce and sell. The normal way that a body of knowledge evolves from tacit to explicit, provides commercialization opportunities at every stage

When individuals team up to solve a problem (or to develop a product), they form a community of practice. When individuals communicate and exchange information related to a common topic, but for solving different problems within or outside a company, they form communities of interest, such as groups of Java programmers. These communities heavily utilize web technology for knowledge sharing.

KM is seen as a strategy that creates, acquires, transfers, brings to the surface, consolidates, distills, promotes creation, sharing, and enhances the use of knowledge in order to: improve organizational performance; support organizational adaptation, survival and competence; gain competitive advantage and customer commitment; improve employees' comprehension; protect intellectual assets; enhance decisions, services, and products; and reflect new knowledge and insights.

Organizational memory for SMEs

Learning from experience requires remembering history. Individual memory is, however, not sufficient and the entire organization needs a memory to explicitly record critical events. There are at least seven distinguishable forms of organizational memory (Nonaka and Takeuchi 1995):

1. Memory consisting of regular work documents and other artifacts that were developed primarily to assist development of the product.
2. Memory consisting of entities that were developed specifically to support the organizational memory.
3. A technological memory: Knowledge on products, techniques, services or production and manufacturing processes, project experiences, problem solving expertise, design rationale, composition of the project team.
4. A financial memory: Knowledge on budget, cost of workforce, cost of on-the-shelf products, financial results.
5. An internal risk memory: Knowledge on insurance, reserves, risk with new technologies, organizational risks, risks about sub-contractors.
6. A pricing memory: Knowledge on clients, competitors, market, marketing strategy.

7. An external risk memory: Environmental risks, risk of money currency changes, risk of lessening company brand image.

KM and SMEs

Success in an increasingly competitive marketplace depends critically on the quality of the knowledge, which organizations apply to their business processes. The challenge of using knowledge to create competitive advantage becomes more crucial.

Shorter time-to-market, better quality and better productivity present the increasing number of goals to be achieved. To meet these requirements, SMEs have tried to better use one of their most important resources: the organizational knowledge. Historically, this knowledge has been stored on paper or in people's minds. When a problem arises, we look for experts across our work, relying on people we know, or we look for documents. Unfortunately, paper has limited accessibility and it is difficult to update. On the other hand, in a large organization, it can be difficult to locate who knows what, and knowledge in people's minds is lost when individuals leave the company. Important discussions are lost because they are not adequately recorded. Therefore, knowledge has to be systematically collected, stored in the corporate memory, and shared across the organization. In other words, knowledge management (KM) is vital.

Creation of knowledge in any organization is inevitably incessant. Its appropriate use and handling are strategic to the competitiveness of the organization. In many small-and medium-sector enterprises (SMEs), while specific knowledge generation is a continuing activity, importance of its apt management could be crucial to its very existence. In order to compete effectively in global markets and achieve competitive advantage, enterprises need to use effective knowledge management practices.

In SMEs, the managers are in most cases the owners, which imply that decision-making is centralized, and fewer layers of management. This means that decision-making is shorter than in large organisations. The advantage for the owners in SMEs is that they become the key drivers for knowledge management implementations, assuming of course that they appreciate the importance of knowledge management. Another distinction to be made is that management of SMEs has to look after every aspect of the business which gives them limited time to focus on the strategic issues relating to knowledge management (Wong, and Aspinwall, 2004).

SMEs have an advantage over large enterprises in respect to their structure, in implementing knowledge management. 'They have a simple, flatter and less complex structure, which will facilitate a change initiative across the organisation since functional integration both horizontally and vertically is easier to achieve and fewer complications will be encountered' (ibid, 2004).

SMEs tend to have a more organic and fluid culture, than larger organisations. Smaller number of people is usually united under common beliefs and values, which implies that it easier for smaller organisations to change and implement knowledge management. It is easier to create a knowledge sharing culture in smaller organisation than in larger ones. In smaller organisations the cultural values and beliefs of the employees can be influenced by the owners. This can be a problem if the owner does not trust his employees or does not encourage the culture of sharing and transferring knowledge. In this case, the owner can obstruct the development of knowledge rather than develop it (ibid, 2004).

SMEs have a problem in attracting high calibre, experienced employees. These experienced people, tend to go to larger organisations, where they will be paid higher salaries and bonuses. Furthermore it also a problem for SMEs to retain, specialised employees, because of limited opportunities for career progression, and the constant appeal of larger organisations, who can provide better prospects. SMEs are mostly seen by some employee as a stepping-stone to move to larger organisation. The departure of highly knowledgeable employees is a major threat to SMEs, unless that knowledge is captured, codified, and transferred throughout the organisation (ibid, 2004).

In SMEs there is a collective, complex, and creative effort. As such, the quality of a product/ service heavily depends on the people, organization, and procedures used to create and deliver it. In other words, there is a direct correlation between the quality of the processes and the quality of the product/ service developed.

For SMEs, the drivers for knowledge management are (Davenport and Prusak, 1998):

- Customer driven: the need for better customer knowledge to meet their needs
- Process improvement: the need to become more efficient is often a powerful motivator
- Product-related: knowledge of technologies and marketplace to help the development of new products

- Restructuring: as small businesses grow, they need to add new functions and restructure; this often creates the need to be more explicit with what was previously informal knowledge
- Joint ventures: knowledge to help the creation and effectiveness of a joint venture
- Succession planning: knowledge to fill the gap when the owner / manager retires or moves on (they often hold much knowledge of the business in his or her head)

The need for capturing and sharing process and product knowledge

SMEs not only require knowledge about its own domain, but also about the domain for which product/ service are being developed. Domain knowledge that no one in the organization possesses must be acquired either by training or by hiring knowledgeable employees. KM can, however, enable the acquisition of new knowledge and it can help identify expertise as well as capture, package and share knowledge that already exists in the organization.

Challenges and opportunities for KM in SMEs

Implementing KM in any organization is a challenge because of the time and effort that is required before there is a return on the investment. SMEs seem to have even less time than others because of the fast pace of the business.

The most problematic challenge to KM is that most of the knowledge in SMEs is tacit and will never become explicit. It will remain tacit because there is no time to make it explicit. A way to address this problem can be to develop a knowledge sharing culture, as well as technology support for KM, never forgetting that the main asset of the organization is its employees.

It is clear that a KM system needs to be supported by appropriate IT infrastructure (Brössler, 1999). While IT can be intimidating to many people, this is not the case for SMEs. (Schneider, 2001).

Implementation of KM

Implementing a KM system might, however, not be so simple, involving both challenges and obstacles. Examples of the most important issues noted by D. Rigby, analysts for Bain & Co. (Lawton, 2001) are:

- Technology issues
 - KM involves software technology, but it is not always simple or even possible to integrate all the different subsystems and

tools to achieve the level of sharing that was planned.

- Inadequate security. While the idea behind KM is to share knowledge, it is important not to share knowledge assets with the wrong audience (e.g., competitors and former employees). This issue might limit the extent to which knowledge can be shared in the organization.

- Lack of standards

Different parts of the organization might use terms and concepts in different ways. This lack of standards can inhibit sharing of knowledge between them.

- Organizational issues

It is a mistake to focus only on technology and not on methodology. It is easy to fall into the technology trap and devote all resources to technology development without planning for a KM implementation approach.

- Individual issues

Employees do not have time to input knowledge or do not want to give away their knowledge.

4. A Five C's KM lifecycle Framework

In (Al-khaldi, et al., 2005), the researchers proposed a new model of the KM lifecycle called the Five C's Model. This model was derived through a comparative study among many theorists in the field of knowledge creation and knowledge management lifecycle. The five Cs refer to: Capture-Creation-Codification-Communication-Capitalization. These five phases will be applied in SMEs in order to harness the knowledge of workers in these organizations. Figure 1 shows the five phases of the model, along with the tasks that are embedded in each phase.

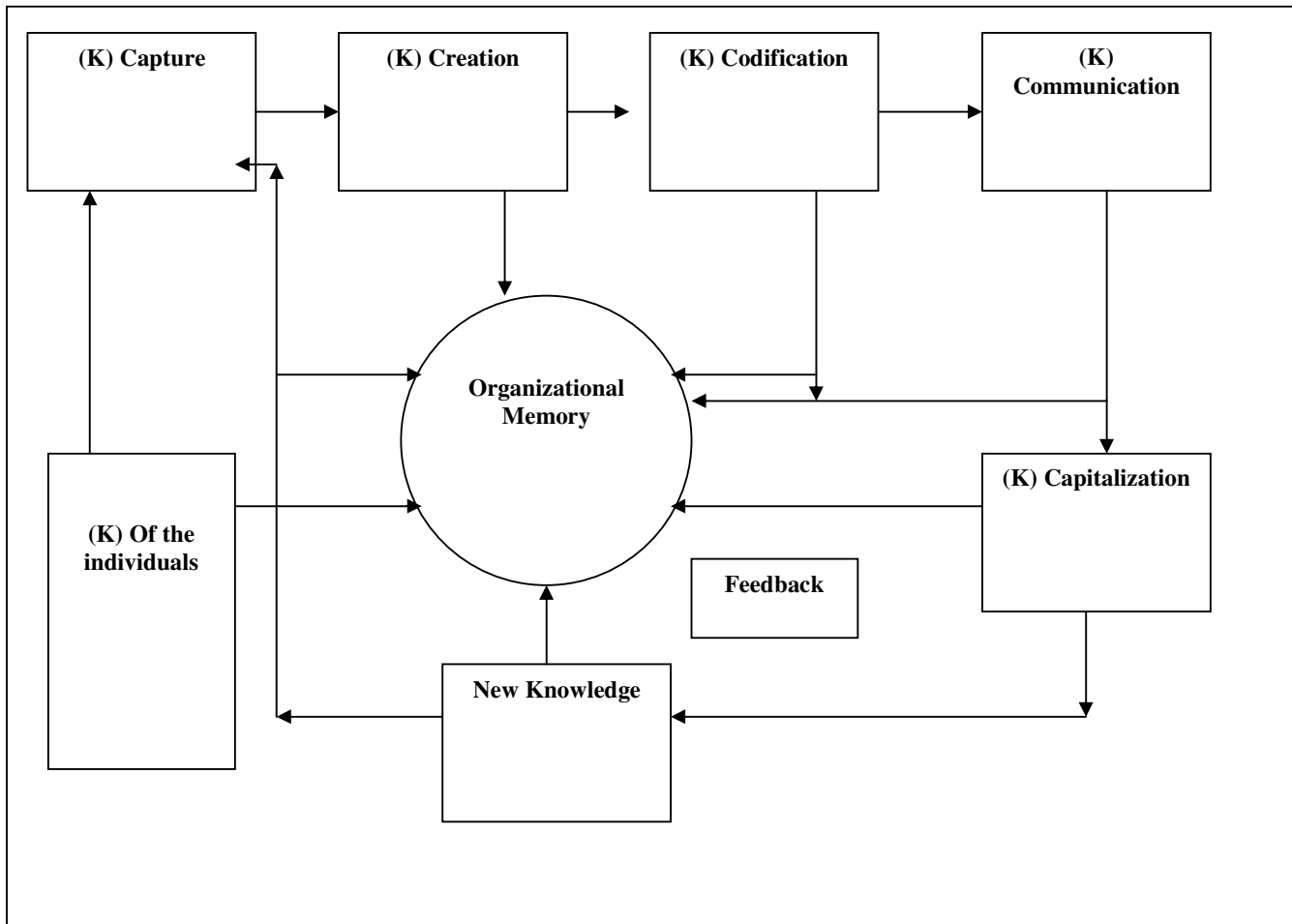


Figure 1: The five C's knowledge management lifecycle
Source: (Khaldi, et al., 2005)

- Knowledge capture phase: the tasks that are embedded in this phase are: searching for several sources of knowledge that is necessary and related for performing the work, perceiving and sensing needs and requirements of work from knowledge resources, acquiring knowledge that already exists in the organization from its appropriate sources at appropriate times where it is needed, extracting the knowledge of other people in the organization, formulation of conceptual knowledge or idea from the knowledge that is available in the organization, using metaphor mechanism in order to extract the hidden knowledge in the organization, using brainstorming to solve the work problems of the organization, consulting others in the organization to capture and acquire their knowledge, participation in training

workshops and sessions in order to acquire more knowledge.

- Knowledge creation phase: the tasks that are embedded in this phase are: conducting research activities in order to discover the knowledge in the organization, exploiting past experiences in the organization to discover new knowledge, creating new knowledge through the continuous learning in the organization, preparing an appropriate culture and system in order to create new knowledge in the organization, developing systematic knowledge in the organization through combining explicit knowledge of people in the organization, developing sympathetic knowledge in the organization through socialization with other people in the organization, developing new ways for doing work tasks in the organization, referring to external consulting firms in order to discover new knowledge and new

ways of doing, referring to departments and specialized units in the organization to create knowledge, engaging and participating in work meetings with other people in the organization in order to get common answers for work problems, enforcing strict conditions on people in the organization to encourage them to create new knowledge and new ways of doing, forming social networks of people in the organization in order to let them generate new knowledge among one another, arousing states of uncertainty about knowledge during discovering of new knowledge, searching in the organizational setting for new knowledge through general routine procedures.

- Knowledge codification phase: the tasks that are embedded in this phase are: classification and categorization of existing knowledge in the organization according to its nature into categories such as administrative, technical, financial etc., storing knowledge in the organization in locations that are easy to retrieve, mapping knowledge in the organization so it can be easily accessed whenever needed, organizing knowledge in the organization in a way that is understandable to all organizational members, considering the classification of the knowledge so it cannot be accessed except by authorized people, placing the knowledge of the organization in suitable settings so it can be easily perceived and comprehended, knowledge of the organization reflects what is actually known and done by the organization, refining and filtering the knowledge of the organization in order to access the most critical knowledge, providing the necessary mechanisms to simplify the expression and articulation of the knowledge from organizational members, distinguishing between explicit and hidden knowledge of people in the organization, orientation of organizational members to available knowledge resources.

- Knowledge communication phase: the tasks that are embedded in this phase are: considering source, nature, and type of knowledge when transferring and sharing in the organization, motivating organizational members for participation in their creative and intellectual resources, encouraging and enhancing the culture of knowledge sharing among organizational members, providing information and communication technology in order to transfer knowledge among people in the

organization, taking into account that the power of the organization is based on the extent of knowledge sharing among organizational members, encouraging dialogue, conversations, and discussions among people in the organization in order to share in their knowledge, reaching common understanding of problems faced by the organizational members when performing their tasks, reaching collaborative group solutions through sharing their ideas, exchanging knowledge among people in the organization through documents, manuals and catalogues, accessing knowledge in the organization anywhere anytime when it is needed, determining who are the people who can transfer knowledge to them, determining mechanisms and methods for distributing and disseminating knowledge in the organization.

- Knowledge capitalization phase: the tasks that are embedded in this phase are: investing and utilizing organizational knowledge in new ways and methods of doing work, enhancing the feeling of individual responsibility towards the knowledge of the organization, enhancing individual effectiveness through this acquisition of organizational knowledge, encouraging individual competitiveness through acquiring knowledge of the organization, application of knowledge leading to changing organizational culture, application of knowledge leading to finding new managerial practices for performing organizational work, application of knowledge leading to making creative and intellectual resources available in the organization, application of knowledge leading to improving overall performance of organization, application of knowledge lead to balancing cost-benefit in the organization through improving services and reducing costs, enhancing creative tasks and practices through the application of knowledge, improving the decision-making process and problem solving through application of knowledge, utilizing the knowledge that is embedded in procedures, rules, and norms in the organization in order to direct the future behavior of organizational members, directing other people in the organization for performing some roles and functions without transferring knowledge to them, evolving organizational knowledge after its application through the feedback that results from evaluation tasks and functions

of organizational members, evaluating the outcomes of organizational knowledge after its application through the services that are offered by the organization.

5. Discussion and Key Findings

Knowledge intensive enterprises have realized that a large number of problems are attributed to uncaptured and unshared product and process knowledge, as well as the need to know 'who knows what' in the enterprise, the need for remote collaboration, and the need to capture lessons learned and best practices. These realizations have led to a growing call for KM. In the context of SMEs, we define KM as a set of activities, techniques, and tools supporting the creation and transfer of knowledge throughout the enterprise.

Knowledge is a valuable resource of any enterprise. Any activity that does not leverage its power is clearly a sub-optimal utilization of the resources. In SMEs, a highly complex and intellectually intensive activity is not an exception. It involves intellectual effort by individuals in teams on projects with deadlines and deliverables that often change over the lifetime of the project.

Some benefits of the proposed framework include:

- With KM integrated into SMEs, it is easier for workers to create new knowledge. In this way, the organizational memory is not closed. It is always evolving.
- A major concern for KM in the SMEs is to capture information during the work processes without extra effort. Thus, the KM system is actively integrated into the work process. An isolated KM system, on the other hand, can be a barrier to innovation, because it does not let workers share new ideas with their peers. Closed systems do not give organizations control over their own knowledge, since there is a gap between knowledge creation and integration. Innovations happen outside the KM system, and then it contains information that is chronically out of date and that reflects an outsider's view of work.
- KM users are no longer passive receivers of knowledge, but are active researchers, constructors, and communicators of knowledge. Knowledge can be constructed collaboratively in the context of the work. Attention to knowledge requires attention to people, including their tasks, motivation, and interests in collaboration. The heart of intelligent human performance is not the individual human mind but groups of

minds interacting with each other and with tools and artifacts.

Finally, we would like to point out the following regarding the proposed framework:

- Information is processed as knowledge. It originates from and is used by individuals, groups, and eventually the company itself, as its role is to support the design of a new process, impelling change in the work of individuals, the processes of groups and the strategic initiatives of the company.
- KM is oriented on business knowledge and managers' needs. To focus on business knowledge is distinctive and quite opposite to usual approaches of corporate knowledge management.
- Most often, corporate knowledge management aims the organisation of the memory of day-to-day tasks. Business knowledge is specific and generally not handled easily in a company. The difficulty is in its acquisition. But once captured, it has a significant added value, which provides a quick return on investment.

6. Conclusions

The focus of this paper is on how SMEs can benefit from developments in KM. Knowledge is the most powerful and ubiquitous resource of any enterprise in general and SMEs in particular. Therefore, implementing the lifecycle of KM in SMEs is useful and necessary. This paper introduced a new approach to such implementation. The proposed framework is based on the five C's KM model, which defines and relates five major KM processes. We believe that the new framework can have a positive impact on the SMEs in terms of the success rate of their projects.

Knowledge management in SMEs is still a relatively new topic, and research continues to understand its unique characteristics. Managers should encourage further research and encourage more initiatives that provide practical help to SMEs. Our broader premise is that rather than focus solely on knowledge management within SMEs, future researches should consider the wider aspect of "knowledge for the development of SMEs" e.g. the knowledge innovation and commercialization process.

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