Knowledge Management Approaches in Portal-Based Collaborative Enterprises

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Collaboration involves a different approach to business – focused on managing business relationships between people, within or without groups, and within and between organizations. Collaborative enterprises differ from other business in a number of ways and collaborative working needs to be simultaneously a business philosophy, strategy and operational working. Effective collaboration unlocks the potential of the collective knowledge and intellectual capital of the organization and its networks of business partners, suppliers and customers. At the core of true collaboration is the ability to share and catalogue knowledge, ideas, standards, best practices, and lessons learned and to be able to retrieve that knowledge from anywhere at any time. Knowledge management is not a goal by itself. Businesses don't exist with the purpose of spreading and advancing knowledge, they exist for selling competitive products and services of high quality. Based on these considerations, we propose some knowledge management approaches for portal-based collaborative environments.
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1 Collaborative Enterprises

To collaborate effectively, people work in large virtual teams, created quickly, spread around the world, and comprising colleagues, customers and partners. Working in these global team-based environments, people establish relationships that may be short-term project-focused or long-term and evolving over time. With each new relationship, companies invest in selecting the right people, learning how to work together, and determining how to extract the most value in terms of revenues and profits [20]. Integrating collaborative services with business functions allows companies to gain a significant competitive advantage. Information is shared more effectively, communication is more efficient, and companies can make quicker, more informed decisions. More specifically, companies can shorten sales cycles, accelerate product development, generate more transactions, increase partner/customer retention, and expedite problem resolution. Effective collaboration requires actions on multiple fronts: early involvement and the availability of resources to effectively collaborate; a culture that encourages teamwork, cooperation and collaboration; effective teamwork and team member cooperation; defined team member responsibilities based on collaboration; a defined product development process based on early sharing of information and knowledge; collocation or virtual collocation; collaboration technology. Collaborative enterprises differ from other businesses in a number of ways and collaborative working needs to be simultaneously a business philosophy, strategy and operational working. Resuming, collaborative enterprises are [21]: (1) - networked and collaborative; (2) - core-competence focused and virtual; (3) - transparent to customer and partners; (4) - customer and partners centric; (5) - multi-disciplinary, (6) - community and team-based; (7) - strategically agile; (8) - change resilient and risk taking; (9) - knowledge creating and sharing; (10) - web-enabled; (11) - empowered and responsive. The more collaborative the environment is, the more knowledge will be available to make right decisions the first time [5]. In non-collaborative environment, a large

knowledge/decision gap exists early on. Using enterprise collaborative techniques, it is possible to make better use of a group's core understanding, thereby raising the starting level of knowledge available on an initiative and closing the gap. Establishing business processes and strategies for collaborative environments supposes : (1) - defining virtual collaboration and what it means for an organization; (2) - assessing the activities, tasks and initiatives that would benefit from virtual collaboration or virtual team work; (3) - examining work practices and the cultural implications of working within collaborative environments; understanding the role of trust among virtual team members for better awareness of group dynamics and social interactions; (4) - exploring with senior management the benefits of collaborative environments and teamwork, and their impacts on business models; (5) - developing a set of guidelines and a framework for a clearer definition of the changing nature of current work practices; and (6) - incorporating the performance metrics and the success of virtual collaborative environments.

2 Portal-Based Environment

Technology plays a critical role in terms of how organizations collaborate today, being an enabler of interpersonal interactions that comprise collaboration. The web can support the introduction of collaborative practices in all areas and the web-based enterprise portal is bidding to become the common information highway for the management of the enterprise. A corporate portal can effectively create a shared community across the enterprise (B2E portal)/extended enterprise (B2C or B2B portal) [15]. Collaboration tools such as e-mail, discussion forums, online meetings, video conferencing and chat are now integral components of a corporate portal, all these collaborative capabilities are included on a horizontal basis across the entire portal.

A successfully enterprise portal represents a single entry point for collaboration, information dissemination and

communication, application functionality and interactive capabilities within and without the corporate entity – all provided in an efficient and centralized manner. *The portal must enable the creation of knowledge through collaboration tools, such as chat, threaded discussions and workflow. The created knowledge needs to be captured and stored for future use. In addition, outside knowledge needs to be brought into organization, and users need to be able to easily place their knowledge into the portal. All the knowledge, both structured data and unstructured content, must be easily retrievable. The portal must be configured to push relevant knowledge directly to the users.*

The level of support for each of these objectives defines the effectiveness of any enterprise portal solution.

3 A Model for Knowledge Management Lifecycle

Considering the knowledge management lifecycle consisting of phases like [19]:
   ❶ knowledge generation,
   ❷ knowledge management/storage,
   ❸ knowledge dissemination,
   ❹ knowledge auditing,
we present a possible maintenance based on a knowledge portal infrastructure.
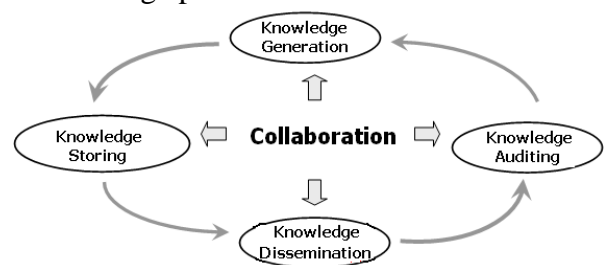

Fig. 1. A Model for KM Lifecycle

❶ At the portal level, creating new knowledge is possible through acquiring/attaining of some knowledge pieces from the collaborative organizational environment (or even external from the organization), or is a following of some intelligent reasoning made by modules of artificial intelligence incorporated in the portal's architecture. The knowledge created

that way are collected and refined to eliminate unjustified redundancies and filtering the ones most "valuable" for the organization.

Creating documents represents a significant percentage of the current activities, so the less time is allocated to this activity, more time will remain for the members of the organization to achieve the other tasks. Therefore, at the portal level, we will have to integrate some instruments that facilitates creating knowledge of a document type, such as: text editors, multimedia, Web pages, images, sounds, video editing systems, spreadsheet editors, graphic programming's.

At the portal level, in the central or distributed knowledge database (meta-base), different kinds of knowledge are coded efficiently, assuring quality, accessibility, and their representativeness with the help of some specific tools/technologies.

❷ Knowledge can be stored in data warehouses, knowledge databases specific to artificial intelligence, content specific structures or in a documents management system; all these will form the portal knowledge meta-base. One of the forms in which knowledge can be stored is knowledge repository, which stores knowledge that is often text-based and has very different characteristics. It is also referred to as *organizational knowledge base*. A knowledge repository is not a knowledge base of an expert system, the repository containing all the organizational knowledge, not only the one needed in solving a specific problem.

Concordant with the different knowledge storing technologies, we will use specific methods/ techniques to access/locate them.

❸ Knowledge sharing goes beyond communication – it provides additional support by ensuring fast access to the latest information, being able to assist users in finding the most up to date knowledge needed for their task and the effective use of that knowledge.

Collaborative tools sustain and facilitate the transfer of knowledge. Some tools and technologies facilitates the use of knowledge: Business Intelligence tools, expert systems, simulations of dynamic complex processes, decision support systems, ERP applications (Enterprise Resource Planning), CRM (Customer Relation Management) and other enterprise applications, visualizing tools that permit understanding of some complex knowledge structures, etc.

❹ Practice proved that if we don't take into account aspects of economic efficiency the costs of maintaining the informatics systems are much more that the profit and most of the time the life cycle reduces drastically.
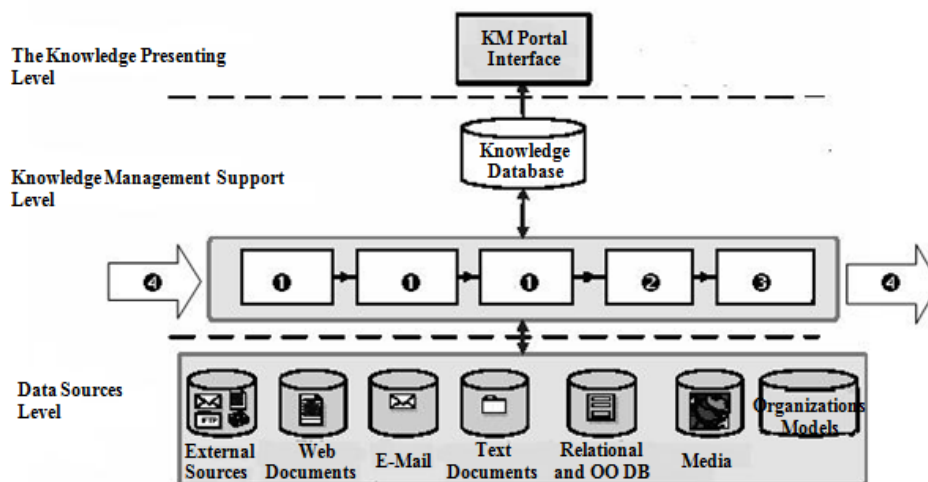

Fig. 2. KM lifecycle phases' implementation at the portal level [14]

Auditing represents a complex activity of verifying the conformity degree of the knowledge database with the standards in that domain, and its capacity to sustain the achievement of the strategic objectives of the organization. The main subjects tested are regarding the reliability and performance of the product, the efficiency of the operations and, not last, the security facilities [13].

Auditing the organizational knowledge implies analyzing its impact on decisional processes, the contribution of each piece of knowledge in optimizing business processes, therefore in raising the quality of the products and services offered. At the end of this process, it is possible to have to regenerate some knowledge pieces.

A collaborative enterprise represents an adequate environment for developing a strategy for a better performance of the knowledge management, taking into consideration the social and cultural specific aspects and having an adequate IT infrastructure.

4 Distributed Knowledge Management

Complex organizations, such as networked group of firms or multi-national firms can be viewed as "constellations" of organizational units – knowledge nodes (KN). In this approach the collaborative community becomes an environment that must support two different processes: (1) - the autonomous management of the knowledge that is produced locally within a single knowledge node and (2) - the coordination of the different knowledge nodes without a centrally defined semantics [3]. Special intelligent agents are used to implement the distributed knowledge management strategy. The use of intelligent agents for knowledge network management has just begun to be explored. Each knowledge node represents a knowledge owner within the network, an entity that has the capability of managing its own knowledge both from a conceptual and a technological point of view. In the proposed architecture, a software agent that "knows" the context of the knowledge node is associated to each KN. These agents have

two functions: supporting the users of a KN to compose outgoing queries, and answering incoming queries from other KNs [14].

Knowledge management demands cultural flexibility, strong management of knowledge management project CSFs and an adequate technical collaborative foundation. If done right, knowledge management is supposed to create a collaborative environment.

5 Collaboration & Knowledge Management

Collaboration facilities improve decisions, increase knowledge. They facilitate better distribution of knowledge, improve planning and development cycles and create more functional and productive relationships within teams. This in turn increases productivity and company understanding of internal and external environments. Overall, employees will begin to have a better view of corporate information and the power to make informed decisions more effectively. A collaborative enterprise organization is a more agile organization. The ability of employees to quickly share their insights contributes to an organization's collective knowledge, and has a direct impact on its success. Successful companies continually seek and refine ways to make effective use of their employees' collective knowledge and experience. Information technologies that contribute to knowledge management solutions, such as enterprise portals, improve the enterprise's business intelligence and its collaboration capabilities. Collaboration is becoming an enterprise's business strategy sustained by IT technology. Integrating collaborative services with business functions allows companies to gain a significant competitive advantage. The benefits of collaboration within a portal are clear. It will continually facilitate and enrich the knowledge management process.

There are many different approaches toward knowledge management. Many concepts focus on social and cultural aspects only and ignore the role of technology. There are other approaches that are very technology-minded but provide no solutions to cultural

challenges of knowledge management. Therefore, many companies have sophisticated concepts on how to manage knowledge, but have little understanding of how to implement and deploy them. The implementation of efficient knowledge management solution often proves to be very challenging.

6 Intercultural Aspects in Collaborative Enterprises

Teams in multinational companies are formed by members from different cultures and collaboration must overcome all intercultural differences. Virtual teams continue to gain popularity as organizations and they are becoming more engaged in global business operations, and as technology for facilitating collaborative work is becoming more readily available. An interesting aspect of the increased globalization of the business world is the cultural diversity of the workforce involved in collaborative virtual work. As a result, the performance of a global virtual team may be contingent not only upon technology and task factors, but also upon a virtual group's cultural homogeneity or heterogeneity. A culturally heterogeneous group is expected to display types of behavior and interactions that are different from those displayed by a culturally homogeneous group. In a virtual setting, the impact of cultural heterogeneity on group performance might ultimately result in performance outcomes that are different from those generated by a culturally homogeneous group.

Managers may reduce the influence of national cultures and cultural differences in collaborative enterprises by developing a strong organizational culture. Internalization of a strong organizational culture is done through training, suitable knowledge management approaches, developing appropriate information systems, using integrating practices such as enforcing quality, super ordinate goals, promoting linking between different cultural groups.

7 Conclusion

Collaboration became a strategic alternative to the monolithic approach to business development and competition. Collaboration facilities improve decisions, increase knowledge. They facilitate better distribution of knowledge, improve planning and development cycles and create more functional and productive relationships within teams. This in turn increases productivity and company understanding of internal and external environments. Overall, employees will begin to have a better view of corporate information and the power to make informed decisions more effectively.

A collaborative enterprise organization is a more agile organization. The ability of employees to quickly share their insights contributes to an organization's collective knowledge, and has a direct impact on its success. Successful companies continually seek and refine ways to make effective use of their employees' collective knowledge and experience. *Many innovative companies have long appreciated the value of knowledge management* to improve their processes, products and customer service and to create competitive advantage. Research studies show that by managing the knowledge of their customers, corporations are more likely to sense emerging market opportunities before their competitors, to constructively challenge the established wisdom of "doing things around here", and to create economic value for the corporation, its shareholders and its customers [6]. A customer-oriented view of knowledge management improves the product quality, increases the capability to innovate and improves the customer orientation. The success of any CKM (Customer Knowledge Management) project lies in choosing the right mix of organizational and technological techniques and tools. *Information technologies that contribute to knowledge management solutions, such as enterprise portals, improve the extended enterprise's business intelligence and its collaboration capabilities.*

The level of interest in knowledge management has grown rapidly during recent years as enterprises recognize that they operate in a knowledge economy and that knowledge is their most valuable asset. At the same time knowledge management theories and technologies have reached the maturity level required for business confidence and endorsement.

8 Suggestions for further research

But, paradoxally, the success of any portal-based collaborative environment (any new technology-enabled business model) relies, more than ever, on people's ability to build relationships based on mutual trust. *Further research will refer how to manage business relationships between people, within or without groups, and within and between organizations according to a knowledge management approach*. Future research streams will include work in intercultural communication and collaboration, temporal coordination, and trust in virtual teams.

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