

# Knowledge Management in Intercultural Collaborative Environments

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## Abstract

*A collaborative enterprise 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 Knowledge Management Support Systems (KMSS), improve the enterprise's business intelligence and its intercultural collaboration capabilities.*

**Keywords:** *Knowledge Management, Collaborative Environments, Intercultural Knowledge Management, Knowledge Management Portal*

## 1. Introduction

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 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.

Intercultural Knowledge Management focuses on identifying, creating and sharing knowledge in a formal manner and reusing it (Holden, 2001). Nowadays, these processes can be realized with support of IT specific tools.

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, knowledge management, developing appropriate information systems, using integrating practices such as enforcing quality, super ordinate goals, promoting linking between different cultural groups.

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. Collaboration and 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 (Muntean, 2005) .

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.

Intercultural Knowledge Management Support Systems (IKMSS) are formed by software tools for support group communication and knowledge management in the cross-cultural environments (Brandas, 2003). One objective for IKMSS is to support and manage the tacit knowledge, too. According to Nonaka and Takeuchi (1995) tacit knowledge is personal, context specific, and therefore hard to formalize and communicate.

Nonaka proposes the SECI model which asserts that knowledge creation is a circular process of interactions between explicit and tacit (implicit) knowledge through socialization, externalization, combination, and internalization. In this respect we consider that IKMSS must contain Artificial Intelligence technologies.

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. 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 (Bonifacio & Bouquet & Cuel, 2002). 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 (Kerschberg, 2003). 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.

### **3. Knowledge Management Technologies and Tools in ICE**

The most utilized Knowledge Management Support technologies and tools are the following (Alavi, 1999): Browser; Electronic mail; Search/retrieval tools; Information repositories; WWW server; Agents or filters; External server services; Videoconferencing.

In Figure 1 we present the KMSS Technologies and Tools in order to support Intercultural Collaborative Environments.

In our opinion these tools can be categorized in four categories:

- **Groupware or Computer Supported Cooperative Work (CSCW).** Groupware provides support for groups to share data, information, knowledge and other resources. One important tool of groupware or CSCW is the Electronic Meeting System (EMS). This tool use Internet to communicate messages in both time- and space independent manner. EMS tool provide support for presentation of information from external sources, videoconferencing, anonymous discussion, categorization of ideas and proposals, voting on proposals and decisions, and full recording of the meeting. The role of groupware in the intercultural collaborative environments has increased due to the fact that many organizations are attempting to virtualize their operations. The best groupware software tools are Lotus Notes/Domino Server, Microsoft NetMeeting, Netscape Collabra Server, Novell Groupwise, and Group Systems.

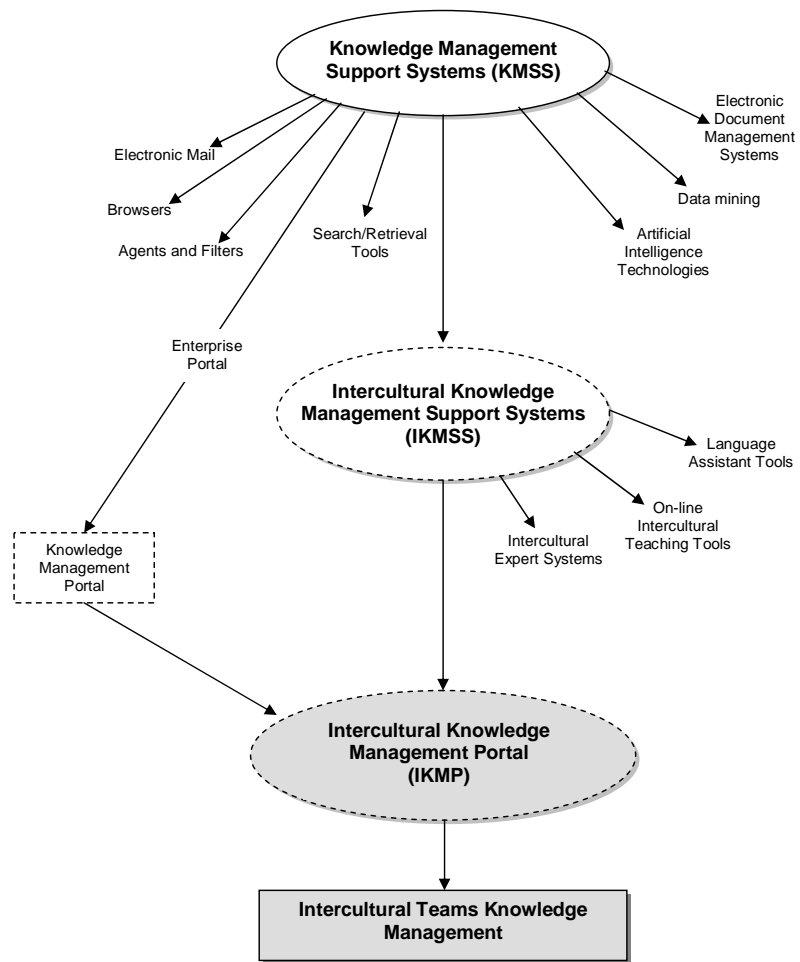


Figure 1 KMSS Technologies and Tools in order to support Intercultural Teams communication and Collaboration

- **Virtual relations support tools.** Virtual relations tools consist of software having capabilities to support social communication in the virtual space. Usually these tools support virtual communities of practice. Some of the most important tools are the following: E-mail, Chat rooms, Messenger software type, WEB Forums, Information Portals.
- **Artificial intelligence technologies.** To support knowledge management in its activities: knowledge identification, knowledge creation, tacit-to-explicit knowledge transfer, etc. we recommend using Artificial Intelligence (AI) technologies. According to Turban and Aronson (2001) AI methods can be used in knowledge management systems to:
  - Assist and enhance searching knowledge (e.g. intelligent agents)
  - Assist in establishing profiles to determine what kind of knowledge to scan for individuals and tools
  - Assist in knowledge, patterns and rules discovery from documents, e-mail, WEB forums, chat rooms and databases
  - Identify patterns in group communication
  - Assist intercultural groups in communication (e.g. automatic translation from one language to another).
- **Enterprise Portal technologies.** The portal provides a new work environment for enterprise knowledge workers, one that is aligned with, and supports and partially automates, their individual and collaborative workflow in creating, distributing and using data, information and knowledge, and in making and implementing decisions and actions (Firestone, 1999). The EKP is an evolution of the portal that is influenced by the goals of knowledge management. It combines EIP aspects while also capturing tacit knowledge, integrating access to expertise and embedding application functionality (Firestone, 2000). The EKP in operation provides: a wide range of functionality (including structured data management, unstructured content management, collaborative processing and knowledge management); a wide range of data and content stored as sources of previously developed information and knowledge; and an interactive object/component-based portal. A particular form of EKP in the Intercultural Environments is Intercultural Knowledge Management Portal (IKMP) (Brandas, 2003). This portal integrates in the same platform tools for supporting virtual relations, intra- and inter-organization relations and tools for supporting knowledge management in order to increase the effectiveness of intercultural collaboration and intercultural knowledge management.

## 4. Conclusions

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. Further research will refer how to manage business relationships between people, within or without groups, and within and between organizations. Future research streams will include work in intercultural communication and collaboration, temporal coordination, and trust in virtual teams.

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