COLLABORATIVE PORTAL MODEL FOR INTERCULTURAL TEAMS KNOWLEDGE MANAGEMENT

Claudiu Brandas[1]

Abstract

In the multinational organizations, more groups of individuals are being involved in the process of knowledge creation in a collaborative manner, of sharing knowledge and learning from it. These individuals can have heterogeneous cultures and they must use a common language. IT has created and is developing the infrastructure for cross-cultural communications and intercultural knowledge management. Nowadays, intercultural knowledge management can be realized with support of Collaborative Technologies and Knowledge Management Support Systems (KMSS). In this respect Collaborative Technologies and Intercultural Knowledge Management Support Systems (IKMSS) will be the appropriate way for supporting intercultural communication, learning and collaborative knowledge management in organizations. In this paper we present a conceptual model of a collaborative portal for Intercultural Team Knowledge Management as a powerful support for increasing team's performance.

Keywords: collaborative support, collaboration, knowledge management, intercultural teams, intercultural knowledge management, intercultural knowledge management portal. JEL Classification: M21,Z00.

Introduction

In the international organizations knowledge management is increasingly becoming cross-cultural knowledge management. That is the management of knowledge transfer generated by intercultural teams and intercultural virtual teams in a collaborative manner.

Teams in multinational companies are formed by members from different cultures and collaboration must overcome all intercultural differences. The members of these teams mostly are organized in virtual communities or communities of practice. These communities share more knowledge than information or data. This has lead to increasing the role of knowledge management in the process of highly performing intercultural team's management. Intercultural Teams Management and communication needs an environment for supporting the individuals or group to communicate and share their data, information and knowledge [2].

Currently, Internet and collaborative technologies [4], especially portals can be the ideal environment for Intercultural communication and community-formation. These collaboration facilities improve decisions, increase knowledge and organizational learning. They facilitate better distribution of knowledge, improve planning and development cycles and create more functional and productive relationships within teams In this respect Intercultural Knowledge Management focuses on identifying, creating and

[1] . PhD Associate Professor at The Faculty of Economcs and Business Administration, at Vest University of Timisoara,

sharing knowledge in a formal manner and reusing it [8]. From our point of view, nowadays, these processes can be realized with support of collaborative technologies and artificial intelligence applications. Some of the most important tools are Groupware Applications, Enterprise Knowledge Portals, WEB Forums and Intelligent Agents.

Collaboration and Intercultural Teams Knowledge Management Support Systems

Intercultural team is a team whose members belong to various cultures, consequently are culturally diverse [8]. The creation, sharing and transfer of cross-cultural know-how through participative competence is in our opinion the key to reach high performance in intercultural virtual teams, in addition to all the other factors specific to homogenous teams.

Therefore, processes of building highly performing multicultural teams in an highly interconnected world, mainly within a global company are changing towards new approaches using action learning method, based on trial and error. Global companies are moving forward from traditional model of building cross-cultural teams to improved models of building multicultural virtual teams for knowledge creation, sharing and learning. The new models are having new qualitative content making use of the collaborative systems and new communication technologies.

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.

Organizations need to develop an internationally distributed work environment that allows for organizational learning to develop, facilitating the sharing of knowledge within the organization and among “webs of enterprise”, and using arrays of networks to link up with their stakeholders [8].

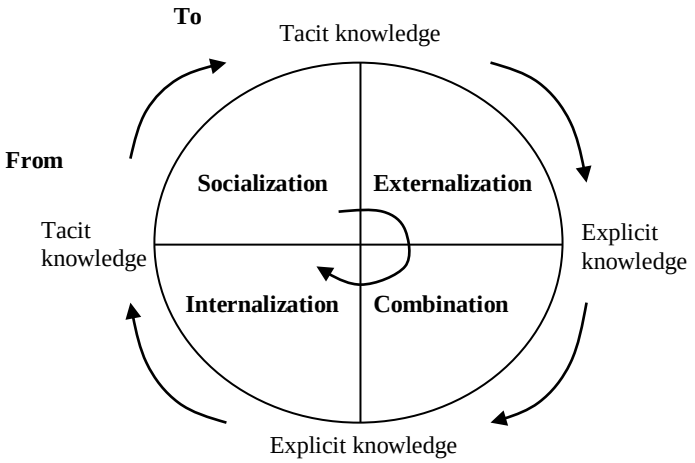
A collaborative enterprise organization is a more agile organization. The ability of employees to quickly share their insights contributes to an organization's collective knowledge, and has a direct impact on its success. Successful companies continually seek and refine ways to make effective use of 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 [11].

In order to support team’s collaboration and knowledge management, Nonaka and Takeuchi (1995) propose the SECI model (figure 1) which asserts that knowledge creation is a circular process of interactions between explicit and tacit (implicit) knowledge through socialization, externalization, combination, and internalization [15].

Nowadays, intercultural knowledge management can be realized with support of Collaborative Technologies and Knowledge Management Support Systems (KMSS). Knowledge Management Support Systems must be organized in a flow sequence in order

to match the six stages of knowledge management cycle: create knowledge, capture knowledge, refine knowledge, store knowledge, up to date knowledge, and disseminate knowledge [3].
In this respect, based on KMSS we can define the concept of Intercultural Knowledge Management Support Systems (IKMSS). Intercultural Knowledge Management Support Systems (IKMSS) are formed by software tools for support collaboration and knowledge management in the cross-cultural environments [3]. One objective for IKMSS is to support and manage the tacit knowledge, too.

Figure 1. SECI Model [15]



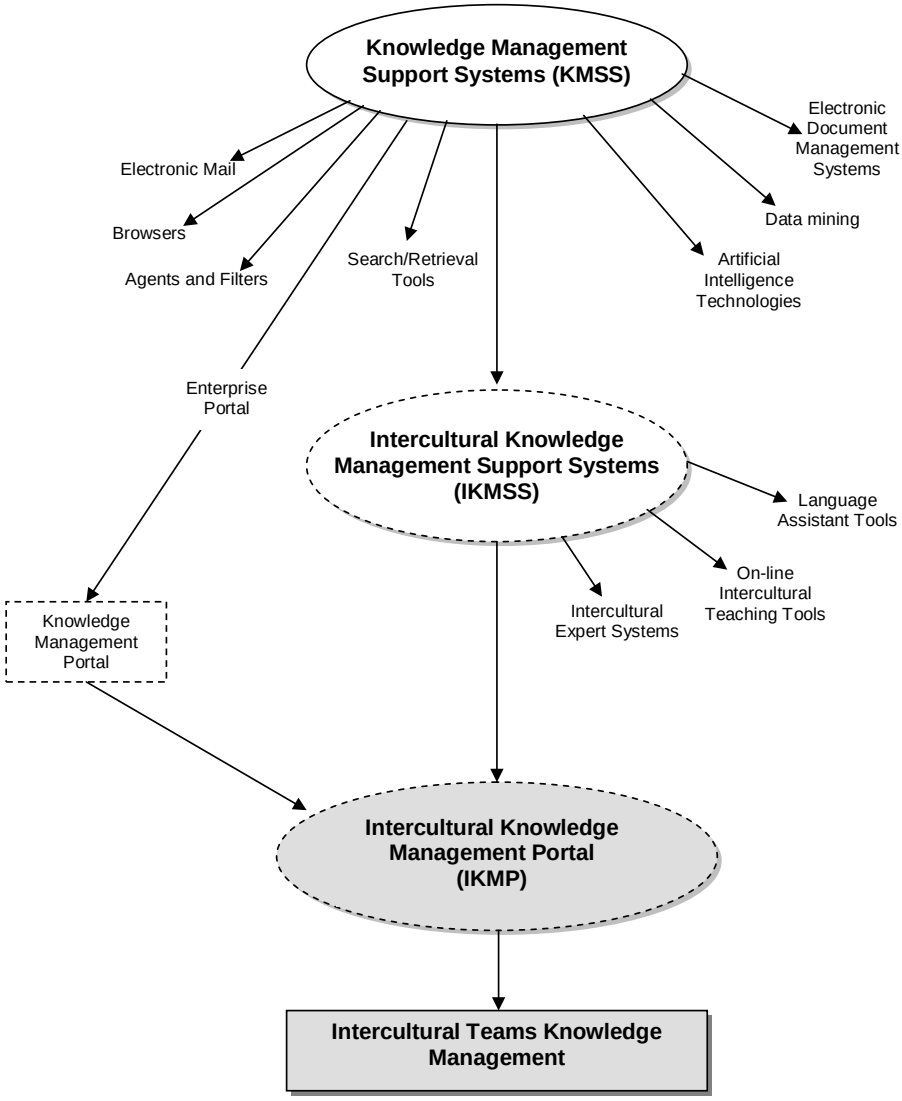
In figure 2 we present the KMSS Technologies and Tools in order to support Intercultural Collaborative Environments. In our opinion these tools can be categorized in four categories:

- **Groupware or Computer Supported Cooperative Work (CSCW)**. Groupware provides support for groups to share data, information, knowledge and other resources [4] [5]. The best groupware software tools are Lotus Notes/Domino Server, Microsoft NetMeeting, Netscape Collabra Server, Novell Groupwise, and Group Systems.
- **Virtual collaboration support tools**. Virtual collaboration 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, Blogs.
- **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 [6]. 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 [7]. 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) [3]. 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.

Figure 2. KMSS Technologies and Tools in order to support Intercultural Teams communication and Collaboration.



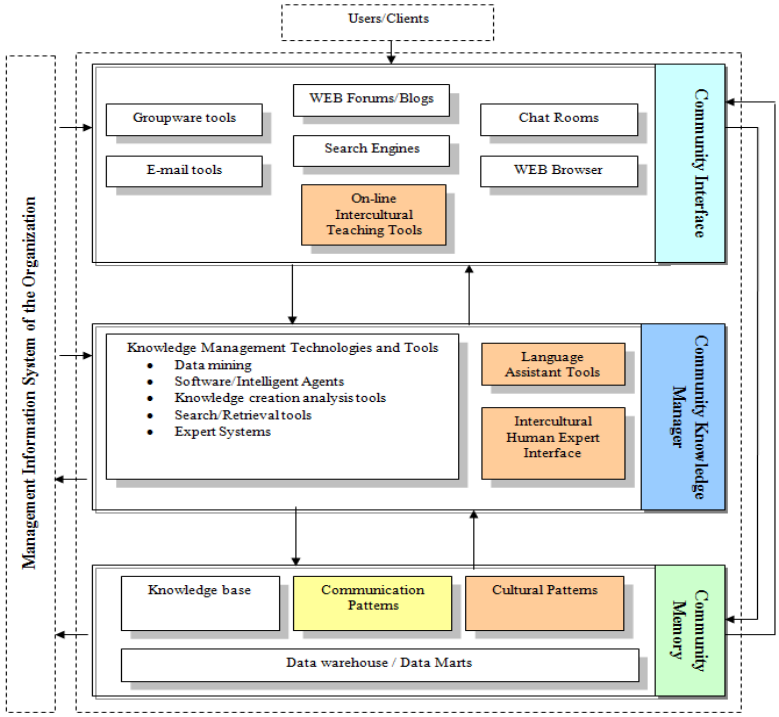
Conceptual Model of Collaborative Portal for Intercultural Teams Knowledge Management

In order to support Intercultural Teams Knowledge Management we are developing a conceptual model of a Collaborative Portal named Intercultural Knowledge Management Portal (IKMP) [3]. This portal are integrate in the same platform tools for supporting virtual collaborations, intra- and inter-organization relations and tools for supporting knowledge management in order to increase the effectiveness of intercultural teams and intercultural knowledge management.

In our opinion the conceptual architecture of IKMP is based on three major components (Figure 3).

- **Community interface (CI)**. This component is formed by software tools for supporting intercultural group communication. In our opinion the community interface consist of: groupware, WEB forums, chat and video chat rooms, e-mail tools, WEB browser and search engines. In the IKMP this component has the following functions:
    - Provide support for direct communication between individuals and/or groups (documents, messages, comments, multimedia, etc.).
    - Supports knowledge sharing.
    - Integrates different communication tools to support cross-reference capabilities.
    - Provides support for search data, information and knowledge.
    - Provides data and information retrieval from Management Information System of Organization.
    - Supports interaction between users and community knowledge manager.
    - Supports interaction between communication tools and community memory.

Figure 3. IKMP conceptual architecture.



- **Community knowledge manager (CKM)**. This component consists of technologies for knowledge management support. In this category can be included data mining tools, artificial intelligence tools (software agents, intelligent software agents, expert systems, intelligent filter applications, etc.),

language assistant tools and human expert interface. In the IKMP, CKM has the following functions:

- Captures and stores individuals and groups profiles.
- Captures and stores the community cultures profiles.
- Captures, stores and reveals community communication models.
- Captures explicit knowledge from community interface and store it in the community knowledge base.
- Provides language assistance for community interface.
- Provides human expert interface.
- Supports tacit-to-explicit knowledge transfer and store the explicit knowledge in the community knowledge base.
- Provides data, information and knowledge interchange with Management Information System of Organization.
- Provides communication assistance for community interface.
- Provides knowledge sharing and reusing assistance for community interface.

- **Community memory (CM)**. This component consists of storing support technologies such as data warehouse and data marts. Within community memory the IKMP is able to store knowledge in knowledge base, communication and culture patterns and individuals profiles in data marts for reusing it. Within IKMP this component has the following functions:
  - Stores and manages data and information from community interface.
  - Stores and provides community communication patterns.
  - Stores and provides community cultural patterns.
  - Stores and provides individuals and groups profiles.
  - Stores explicit knowledge in the knowledge base.
  - Provides data and information for Management Information System of Organization.
  - Provides retrieval capabilities.

In the Table 1 we present how IKMP architecture is in order to match the six stages of knowledge management cycle and explicit and tacit knowledge operability.

Table. 1 Participation of each IKMP components to support knowledge in all stages of KM cycle

Support tools for KM / KM Cycle	Explicit Knowledge Support	Tacit Knowledge Support
Create knowledge	CI / CKM	CI
Capture knowledge	CI / CKM	CKM
Refine knowledge	CKM	-
Store knowledge	CI / CKM	-
Update knowledge	CI / CKM	-
Disseminate knowledge	CI	-

SEQUENCE

Conclusions

Virtual communications and Collaborative Systems continue to gain popularity as organizations are becoming more engaged in global business operations, and technology for facilitating collaborative work is becoming more readily available. They facilitate better distribution of knowledge, improve planning and development cycles and create more functional and productive relationships within intercultural teams. From our point of view the Intercultural Knowledge Management Support Systems (IKMSS) will be the most powerful tools to increase multinational team effectiveness and efficiency. In the same time we are consider that conceptual model of IKMP is a good way for supporting intercultural communication, collaboration, learning and knowledge management in organizations.

ACKNOWLEDMENT: This work was supported by ANCS-CNMP, PNII project number 92-100/2008.

References

[1] Addison Y.S. Su, Stephen J.H. Yang, Wu-Yuin Hwang, Jia Zhang, *A Web 2.0-based collaborative annotation system for enhancing knowledge sharing in collaborative learning environments*, Computers & Education, Volume 55, Issue 2, September 2010, Pages 752-766.
[2] Bibu, N.A., *Building highly performing Intercultural Teams for collaborative knowledge creation, knowledge sharing and organizational learning*, Paper presented at InterKnow – EuroWorkshop II, Regensburg, Germany, 2003.
[3] Brandas, C., *Intercultural Knowledge Management Support Systems*, Paper presented at InterKnow – EuroWorkshop II, Regensburg, Germany, 2003.

[4] Chaffey, D., *Groupware, Workflow and Intranets : Reengineering the Enterprise with Collaborative Software*, Digital Press, NY, 1998.
[5] Darses, F., Dieng, R., Simone, C., Zackland, M., *Cooperative Systems Design – Scenario-based Design for Collaborative Systems*, IOS Press, Amsterdam, 2004.
[6] Firestone, J. M., *Enterprise Information Portals and Enterprise Knowledge Portals*, DKMS Brief No. Eight, http://www.dkms.com/White_Papers.htm, 1999.
[7] Firestone, J. M., *The Metaprise, The AKMS and The Enterprise Knowledge Portal*, http://www.dkms.com/White_Papers.htm, 2000.
[8] Holden, N., *Cross-Cultural Management: A Knowledge Management Perspective*, Financial Times Management, 2001.
[9] Ishida, T., *Community Computing: Collaboration over Global Information Networks*, John Wiley and Sons, 1998.
[10] Kerschberg L. *Knowledge Management in Heterogeneous Data Warehouse Environment*, http://eceb.gmu.edu/pubs/KerschbergDaWak2001.pdf, 2003.
[11] Muntean M., *Some Considerations About Portal-Based Collaborative Environments*, The 5th European Conference on Knowledge management, CNAM Paris, 2004.
[12] Muntean, M., Brandas, C., *Knowledge Management in Intercultural Collaborative Environments*, INFORMATICA ECONOMICA, Vol I. "Current Approaches in Intellectual Capital Evaluation", 2006.
[13] Nitchi, S., *Distributed, Cooperative and Collaborative support systems – a general framework*, "Innovative Applications of information technologies in business and management", PIM, Iasi, 2005.
[14] Nitchi, S., Nitchi, R., *On the paradigm of collaborative support systems*, "Collaborative support systems in business and education", RisoPrint, Cluj-Napoca, 2005.
[15] Nonaka, I., Takeuchi, H., *The Knowledge-creating Company: How Japanese Companies Create the Dynamics of Innovation*, New York, Oxford Univ. Press, 1995.