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## **ORGANISATIONAL AND TECHNOLOGICAL ASPECTS OF USAGE OF COMMUNITIES OF PRACTICE IN TACIT KNOWLEDGE MANAGEMENT AND ORGANISATIONAL LEARNING**

**Abstract:** The paper aims at presenting the specifics of communities of practice (CoPs) and the CoPs' role in tacit knowledge and organisational processes management. To meet the above objective, the nature of CoPs is firstly presented. Then, importance of knowledge and organisational learning for the organisation in question is addressed. The most important functions of CoPs in contemporary organisation along with implementation determinants are discussed as well. Finally, a list of selected information tools that allow for effective functioning of CoPs in the aspect of creating tacit knowledge and supporting group work is compiled.

### **1. Introduction to CoPs**

Nowadays it is observed that institutional activities and learning that involve applying well verified and homogeneous methods are not sufficiently effective. Informal processes along with communities of practices (CoPs) that exchange knowledge and learn on their own become more and more frequently a key success factor. They are believed to play a major role in generating and transferring new knowledge including tacit knowledge and unique abilities for organisation. Information technologies and tools turn out to be particularly useful while supporting CoPs in tacit knowledge management, processes of organisational learning and group work. Application of such technologies and tools is also justified by the fact that in many cases CoPs are of global nature and that they are created on-line.

CoPs are groups of individuals who are inter-connected by means of informal relationships and who share their experiences and knowledge of a particular domain [Sena, Shani 1998]. CoPs are created as a result of their members' joint passion for

a particular topic. The passion leads to deepening knowledge and enriching experiences of the scope selected by a particular group whose members are usually dispersed geographically but united by means of the following dimensions:

- structural, i.e. other individuals who function in the network are also taken into consideration while undertaking actions;
- relational, i.e. actions undertaken in a community are based on trust; and
- cognitive, i.e. members share common objectives.

With reference to other communities CoPs are distinguished by means of the following three dimensions [Wenger 1998]:

- What do they refer to? (What do they deal with) – the scope of activities undertaken and knowledge to be used by CoPs to get organised (domain);
- How do they function? – individuals become members of CoPs by sharing knowledge and experiences and they are inter-connected as a result of some involvement in joint actions undertaken (community); and
- What kind of skills have they developed? – a common set of means that represent material dimensions of CoPs including, first of all, procedures, sensitivities, artefacts, vocabulary, styles, etc. (practice).

Therefore, it is possible to state that CoPs are groups of individuals who are inter-connected by means of common goals and internal motivation. They are not typical task-oriented teams but rather groups of co-operating individuals who focus on, for instance, a particular project, product or service, etc. Such co-operation may bring about emergence of new standards, tools, projects, good practices and business patterns [Wenger et al. 2002].

## **2. CoPs in development of organisational learning processes and knowledge management**

CoPs are created to utilise employees' knowledge and skills. CoPs are likened to learning groups in which new observations are transformed into knowledge by means of mutual involvement in joint ventures. Therefore, it is possible to assume that CoPs remarkably contribute to creation of organisations' knowledge resources. In order to verify the thesis formulated this way, the subsequent part of this article is devoted to analyses of specifics of organisational learning. Much attention is paid to creating and transferring knowledge in organisations so that the place and role of CoPs could be shown in the processes discussed.

Originally, the very term of "learning" was associated with human traits. Due to learning human beings can transform themselves and do everything they were not able to do before. At present abilities to learn are also attributed to organisations and different community groups. A learning organisation is an organisation that improves its capacity for creating its own future [Senge 1990]. The following assumptions have to be taken into consideration while discussing any learning organisation:

- learning, i.e. a basic value of any organisation;

- “teamability”, i.e. all employees participate in the process of learning and that is why organisations must emphasise team learning;
- motivating, i.e. organisations must motivate individuals to participate in the processes of learning, creating innovations and contributing to the future of the organisations in question; and
- continuity, i.e. the very process of learning ought to be continuous and conscious.

Learning may refer to different individuals and levels. In a majority of cases four levels of learning are discussed: individual, group, organisational and inter-organisational. Individual learning involves employees who acquire new skills, competencies and values on their own. Group learning means collective interactions that are manifested in jointly realised objectives, communication and knowledge exchange by employees. As a result of group learning some common approaches to solving problems and making decisions in an organisation are elaborated. Organisational learning refers to the so-called “memory of an organisation” that is used for consolidating, institutionalising and storing different behaviours, activities, mental maps or values, i.e. results of learning undertaken by different individuals. Inter-organisational learning is also connected with the memory of an organisation although the very issue refers to a few organisations.

It seems that the levels of organisational learning mentioned above would have to include community learning that refers to different informal groups, i.e. experts, practitioners, fans or hobbyists. Knowledge that is aimed to meet needs of a contemporary organisation and processes of decision making is deposited in numerous places; the knowledge is frequently of informal nature and it is obtained interactively. CoPs are valuable sources of knowledge including tacit knowledge in particular. They are also frequently thought to be the driving force of social capital. By means of spontaneous, free and non-formalised exchange of knowledge, thoughts and experiences CoPs play a major role in the so-called empiric learning, i.e. combining different resources of knowledge that comes from dispersed locations, verifying such knowledge quickly and filtering to eliminate obsolete and useless knowledge. Significance of CoPs may also be confirmed by the so-called cybernetic learning that involves discovering new ways of perceiving and understanding the reality along with questioning and creating new visions, principles, and rules of functioning and mental constructs of people. CoPs may contribute to creating new knowledge, combining new knowledge with already existing knowledge or replacing already existing knowledge with new knowledge.

Numerous interesting observations of organisational learning and the role of CoPs in the very process may be made while analysing a Japanese model of a knowledge spiral – SECI – that involves the following processes: socialisation (S), externalisation (E), combination (C) and internalisation (I) [Nonaka, Takeuchi 1995].

Socialisation involves sharing experiences, i.e. sharing tacit knowledge that is then used for creating better ideas. Exchange of tacit knowledge is performed when

individuals stay together in the same environment and when they undertake different activities together. It is much more difficult to transfer this kind of knowledge by means of written or verbal instructions. Therefore, it is quite easy to agree with the statement that CoPs may play a major role in the process discussed.

Externalisation is a process that involves expressing tacit knowledge by means of notions available. Since transformation of tacit knowledge into explicit knowledge by means of a language is a very complex process, different metaphors, analogies and models find their application. CoPs translate tacit knowledge into an understandable form that may be assimilated by others. In the very process an individual becomes a part of the group. Intentions and ideas spread and become an integral part of the group's mental world. Combination involves grouping and combining different elements of available knowledge in order to obtain a particular system of knowledge. Explicit knowledge is usually transformed into other more complex form of explicit knowledge. On this level a key issue is to provide effective communication and knowledge transfer to particular members of the group.

On the other hand, internalisation is a process as a result of which formal knowledge in form of e.g. a product concept or production procedures are implemented in activities undertaken or in practice. There is some integration of newly generated knowledge with already existing systems of production, marketing and sales. Internalisation is a process of learning through acting. Therefore, learning through practice, trainings and exercises allows CoPs to gain some access to knowledge that is possessed both by different individuals and the whole organisation.

All the processes of knowledge conversion mentioned above may be realised in different special contexts (Ba). I. Nonaka and N. Konno pay particular attention to the following Ba [Nonaka, Konno 1998; Nonaka et al. 2000]:

- Originating Ba, i.e. some space for exchange of emotions, experiences and mental models. Due to co-operation in a group mutual trust is developed. Hence, it is possible to exchange tacit knowledge between particular individuals, which will result in creating new knowledge;
- Ba of interactions, i.e. some space where tacit knowledge is transformed into explicit knowledge. A major role is played here by dialogues and metaphors. Simultaneously, barriers related to own points of view are overcome and reflections are made;
- Cyber Ba, i.e. some virtual space of interactions that is used for filtering and coding new and already existing explicit knowledge. In a majority of cases Cyber Ba takes a form of a computer system; and
- Exercising Ba, i.e. some space that supports internalisation, i.e. learning. Explicit knowledge is transformed into tacit knowledge in the process of practice.
- CoPs that focus on individuals and social structures allow for effective expansion of already existing knowledge through the whole SECI model and in all Ba special contexts. This way CoPs provide a new perspective of knowledge management and organisational learning processes related issues.

### 3. Functions undertaken by CoPs in organisations

CoPs perform many functions in contemporary organisations, which is shown in Table 1 that presents different types of CoPs and their most important features along with consequences organisations face while applying CoPs. A detailed description of CoPs was provided by Dube, Bourhis and Jacob in 2006 [Dube et al. 2006] and it includes such characteristics as demographics, organisational context, membership characteristics and technological environment. While analysing the above description, it is difficult not to agree that elaboration and management of different CoPs that are characterised by specific contamination of values pose numerous challenges that have to be faced by managers, designers, leaders and members of the communities in question. There are also different methods of evaluating such CoPs.

Table 1. Characteristics of CoPs

Category/Feature	CoPs characteristics
1	2
Demographics	
Orientation	Operational CoPs focus on the daily operations of the organisation, such as answers to customers' problems. Strategic CoPs shape the organisation's response to important environmental changes or define new products or segment markets.
Life span	CoPs can be assembled on a temporary basis and may be initially indeterminate. They are supposed to accomplish a specific purpose, e.g. a response to and <i>ad hoc</i> environmental changes. In spite of their initially <i>ad hoc</i> nature they are created on a permanent basis, i.e. an on-going mechanism for knowledge sharing.
Level of maturity	Launching a new CoP is more challenging, as assembling community members, identifying their common interests, choosing technology, developing standards and processes may prove difficult. However, mature CoPs frequently require reinvestment when the face difficult changes.
Organisational context	
Creation process	In practice creation processes are spontaneous or intentional: in the intentional (top-down) approach managers define CoPs development framework, e.g. they define goals of a network and key members of the community, etc. In the spontaneous approach (bottom-up) the initiative to create CoPs is taken by individuals whose goal is not only to gather and share ideas and knowledge but also to help one another.
Boundary crossing	CoPs are frequently created to break organisational silos and promote co-operation, learning and information sharing. They are usually based on personal or task oriented relationships and may involve crossing boundaries across work groups, organisational units and organisations.
Environment	CoPs creation and development are influenced by many factors including e.g. organisational culture, economic environment, management styles or politics. Taking the economic environment into consideration CoPs are more required in industries where turbulence and rapid change are common, which increases the need for knowledge and lifelong learning.

1	2
Degree of institutionalised formalism	CoPs may integrate with the formal structure of an organisation and the degree of such integration may be different. Institutionalised CoPs are fully integrated and therefore treated as an organisational unit. However, CoPs do not often enjoy acknowledged existence in the organisation.
Leadership	An organisation can either create formal CoPs governance structure where individuals are appointed to specific roles or leave roles and authority relationships to emerge through interaction around expertise. However, if CoPs take important roles in organisations in the context of knowledge management and learning, it is recommended to determine roles of particular community members clearly.
Membership characteristics	
Size	CoPs may associate a different number of members. A large community is more probable if CoPs attract individuals who have diversified and distributed interests. In such a case social relationships are more ephemeral. As a result, it may be more challenging to meet the needs of all members of the community to find valuable knowledge.
Geographical dispersion	Geographical dispersion refers to the physical location of the CoPs participants. A high level of dispersion brings about additional challenges because physical distance encourages psychological distance. High geographic dispersion may mean that members are in different time zones, which makes synchronous communications much more difficult. It might also be necessary to face cultural diversity related barriers.
Members' selection process	A CoPs open membership means that each interested employee in the organisation may become a member of the community. Such an approach is more in line with the idea of organisation-wide knowledge sharing. CoPs may also function on the basis of a closed membership and then in order to participate it is necessary to meet certain criteria.
Members' enrolment	CoPs members' enrolment may be voluntary or compulsory. Volunteers are more motivated than those who are made to participate. Therefore, organisations should create an appropriate system of motivation and promotion.
Member' prior community experience	Existing networks of individuals may be the instigator of new CoPs. In such a case, members already know one another and they are used to co-operating, sharing knowledge and learning together.
Membership stability	CoPs may have permanent members but can also have changing membership. Open CoPs may experience less stability than closed ones. Stability may also be affected if key actors of the CoP are replaced by new members. The values, norms and communication patterns of new members will be confronted with the ones that were adopted by the CoPs.
Members' ICT literacy	Contemporary CoPs require ICT literacy and skills. CoPs members represent different levels of their ICT skills and that is why they prefer different technologies, e.g. some prefer to use video-conferencing, groupware systems or whiteboards. Others tend to use electronic mail only. In case of CoPs whose members are not proficient in ICT, it may turn out that exchanging and sharing of knowledge is somehow limited.

Table 1.

1	2
Cultural diversity	CoPs must facilitate integration of different communities that are characterised by various cultural attributes including national, organisational and professional attributes. National cultures influence styles of management and leadership, setting goals and priorities, decision making and inter-personal relationships, language and problem solving in communication and co-operation. Organisational culture frequently influences diversification of learning and adapting processes, knowledge sharing, employees’ expectations and preferences or evaluation systems. Integration of different professional cultures within one CoP is another cultural dimension because members of particular professional groups develop their own knowledge bases, languages and specific vocabulary, technical procedures, values and standards, etc.
CoPs relevance to members	In practice CoPs goals set by managers do not always match objectives set by employees, which does not encourage any development. Hence, it is necessary to make sure that all goals are consistent and match one another.
Technological environment	
Degree of reliance on ICT	ICT makes it possible to overcome barriers of time and space. Depriving CoPs of face-to-face contacts, especially at the beginning, may generate problems related to establishing a sense of identity and a common purpose or to development of knowledge sharing and mutual understanding in the group of all community members.
ICT availability	CoPs functionality largely depends on ICT employed. ICT that is applied provides virtual spaces where individuals can meet and discuss (synchronously and asynchronously), store documents, manage documents, co-operate, share knowledge and learn.

Source: on the basis of [Dubé et al. 2006].

Literary researches and personal empirical experiences authorize us to underline that both organisations and their employees derive benefits from CoPs application (Table 2). However, it is necessary to remember that – predominantly – CoPs [Wenger, Snyder 2000]:

- are nodes of exchange and interpretation of much information and knowledge including tacit knowledge in particular and they are used to share information, best practices, advice or tips, etc.;
- allow for storing knowledge in an active way contrary to databases and handbooks. Even if they provide some tasks and processes in a routine way, they may function in a way that matches local conditions and that is why they are so useful for practitioners. CoPs pay much attention to tacit aspects of knowledge formal systems cannot handle. Hence, CoPs are perfect for introducing novices into the world of practice;
- are used to manage competencies in order to ensure organisation competitiveness. Their members discuss innovative ideas, follow novelties of different sec-

- tors and initiate new solutions. Efforts undertaken jointly contribute to valuable membership because individuals invest their professional identity in being a part of a dynamic community; and
- are sources of identity. They are not as defined in time as teams. Contrary to business units they are focused on issues that are of much relevance to their members.

Table 2. Benefits from CoPs

Benefits for employees	Benefits for organizations
<ul style="list-style-type: none"> <li>– Learning from experts and peers</li> <li>– Developing a sense of identity and belonging</li> <li>– Improving ties with colleagues from other locations and organizations</li> <li>– Developing broader perspectives of the organization and environment</li> <li>– Developing long-term personal networks</li> <li>– Getting recognition for specific skills and knowledge not directly related to their main job description</li> <li>– Improving self-esteem</li> <li>– Rapidly identifying key knowledge sources, stakeholders, and current organizational priorities, especially new employees</li> <li>– The ideal space for self-realization and pursuit of personal passion</li> </ul>	<ul style="list-style-type: none"> <li>– Codifying chunks of knowledge carried by employees</li> <li>– Promoting focused organizational learning and innovation</li> <li>– Helping drive strategy</li> <li>– Starting new lines of business</li> <li>– Solving problems quickly</li> <li>– Transferring best practices</li> <li>– Developing professional skills</li> <li>– Helping the organization recruit and retain talent</li> <li>– Winning new businesses more quickly</li> <li>– Better serving existing clients</li> <li>– Facilitating integration of acquired companies and in post-merger efforts</li> <li>– Reducing cross-functional and cross-location cultural barriers</li> <li>– Improving organizations' social capital</li> </ul>

CoPs are also thought to be an important vehicle that allows for undertaking strategic activities because they:

- enable practitioners to take collective responsibility for knowledge management;
- create direct connection (leverage) between learning and performing;
- facilitate disseminating and sharing of tacit knowledge; and
- are not limited by any formal structures, thus creating inter-connections between individuals who do not belong to an organisation.

From a perspective of CoPs, knowledge of organisation is to be found in a constellation of learning networks. Such a structure poses a serious challenge for hierarchical structures. More and more people believe that learning networks are the first step to develop a new method of working, employing people and performing tasks.

Potential application related areas of CoPs should predominantly include the following:

- business;
- governmental institutions;

- education;
- professional associations;
- social sector;
- development of projects; and
- the World Wide Web.

All the areas mentioned above apply CoPs because of similar reasons. It is believed that CoPs will overcome bureaucracy and formalisms to facilitate better knowledge sharing. It is also necessary to note down that first applications related to learning networks were used in teaching and running courses. Such applications allowed for developing peer-to-peer initiatives. As it has already been demonstrated, the networks in question influence educational practices in three dimensions: internal (development of lectures and interactive courses), external (implementing theoretical knowledge) and life-long (learning is not limited to university buildings and semesters but ought to develop continuously).

At the end of this section of considerations it is necessary to highlight that in order to reach intended goals and benefits related to CoPs, all activities undertaken by CoPs have to be supported relevantly by organisations. That is why enterprises undertake diversified initiatives, e.g. 3M allows their employees to hold social meetings at work, American Management Systems cover CoPs related costs and Xerox ensures communications technology support.

## **4. Proposition of technology tools to support work of CoPs**

CoPs may be developed traditionally or they might be of virtual nature. It is even possible to find the term of VCoPs (Virtual Community of Practice) in the professional literature. According to the authors transferring CoPs into the virtual world is today – in the era of globalisation and geographical dispersion of organisations and their trading partners – a necessity. Moreover, development of CoPs without information and computer technologies is simply not feasible. Therefore, the subsequent section of the article presents the most important information and computer technology tools that are indispensable while working in any CoPs. Particular attention is paid to systems of tacit knowledge management and group work.

### **4.1. Systems of tacit knowledge management**

Processes of CoPs knowledge socialisation employ technologies that allow for creating and sharing knowledge while participating in processes, performing tasks and observing phenomena. It is now necessary to list all tools that allow for communicating and discussing ideas and that support holding conferences, organising group work and making collective decisions. Such tools let CoPs participate in synchronous and asynchronous forms of co-operation and are useful in structuralising and visualising co-operation and in assessing group decision making. Tools of this

type may – among others – include the following: Think Tools, GroupSystems, IBM Lotus, eGroupWare and MS Exchange [Olszak, Ziemia 2008; Ziemia 2008].

The process of converting tacit knowledge into explicit knowledge employees technologies that are able to grasp personal knowledge of individual members of a particular group in order to transform such knowledge into knowledge that would be available for the whole organisation. Tools that are used to codify tacit knowledge are supposed to save knowledge in the structural way in form of text, graphics, video or sound. The tools in question predominantly include systems of content management and tools that are used to support repository creation along with systems of documentation management, e.g. Documentum Enterprise Document Management System, IBM Lotus Notes, Hummingbird DOCS Open, Open Text or Logotec DDM9000 [Ziemia 2008].

A separate class of tools that support processes of externalisation refers to semantic networks and ontology. Semantic networks are a project that is supposed to contribute to creation and dissemination of standards to be applied while describing contents in the Internet, which should allow for automated searching, processing and transferring the very contents by matching documents with particular meaning. Ontology is an abstract and formalised description of some fragment of the reality that is used to systemise knowledge in organisations and to support searching, standardising and categorising of knowledge. To define ontology the following languages are used: XML (Extensible Markup Language), RDF (Resource Description Framework) or WOL (Web Ontology Language) [Nahotko 2003].

Internalisation processes are supported by technologies that allow for using acquired explicit knowledge in practice, which simultaneously results in generating tacit knowledge. At present electronic trainings that aim at knowledge assimilation and accommodation, analyses of solutions, performance of a task or problem solving more and more frequently are used to create tacit knowledge. Creating tacit knowledge is facilitated by utilising of explicit knowledge that is found in systems of documentation management, systems of work flows and systems of group work. Finding necessary knowledge frequently requires time consuming and complicated searches. That is why, some research is being carried out in order to analyse semantic networks and ontologies that were mentioned above. Interesting applications that analyse contents coming from different external and internal sources and then filter and personalise such contents for particular users include Compassware InfoMagnet, Excalibur Retrieval and Verity Information Server along with text mining and web mining tools [Ziemia 2008].

At present there are numerous tools that support management of tacit knowledge and they are easily available on the market. Therefore, organisations have to face some challenges related to selecting appropriate technologies and tools that are adequate to organisations' needs. It is also necessary to stress that technology is only an artefact that may facilitate or improve individuals' actions. Whether application of a particular technology generates any benefits or not, depends on the methodology

that defines the way the technology in question is used and that describes the way individuals interact with their technologies. While creating such a methodology it is necessary to pay attention to the fact that tools may be of different relevance and may play different roles depending on the context they are used in. Additionally, some tools may require a restrictive approach to their utilisation depending on the socio-technical environment they are used in because such environments may be characterised by different values, behaviours and even knowledge. It is particularly necessary to approach carefully integration of technologies that support management of knowledge from different sources – even when the same tools are used in all the sources [Olszak, Ziemia 2008].

#### **4.2. Systems of group work**

Systems of group work are the foundations of the CoPs development. Information tools that support knowledge sharing are supposed to provide both synchronous and asynchronous opportunities for individual meetings, sharing of information, knowledge and opinions, making presentations and co-operating on-line. Synchronous tools including communicators, chat rooms, whiteboards, screen sharing along with video and audio-conferencing enable two or more individuals to work together at the same time regardless of their location. Such solutions improve co-operation and meetings become more effective. Asynchronous tools that allow for communication in different time (e.g. electronic mail, forums, newsgroups, bulletins, etc.) are particularly useful for individuals whose work schedule is very tight and who work on different projects simultaneously. Each of the types of tools in question is to be found useful in the life cycle of projects or virtual relationships (as far as time and place are concerned).

The most sophisticated tools used while co-operating provide homogeneous integration of structural and non-structural data and information, voice and synchronous and asynchronous software of group work. The tools in question also provide an easy way to track history of past projects and team dynamics (not only results of a particular project). This way co-operation tools help codify some part of tacit knowledge that is developed in an organisation in order to develop indirect co-operation. As a result such tools meet requirements set by knowledge management processes, i.e. some need for building knowledge supply chains [Terra, Gordon 2003]. Tools of that category include – among others – systems of documentation management and systems of work flows.

Diversification of solutions that support co-operation and selection of the solution that would prove the most useful for the organisation turns out to be a challenging task. Organisations find it quite difficult to identify their needs with reference to co-operation and functionality required in case of software. Some help may be provided here by the model of software that supports co-operation (see Figure 1). The very model consists of four basic components: the scope of activities undertaken, communications tools, co-operation tools and management functions.

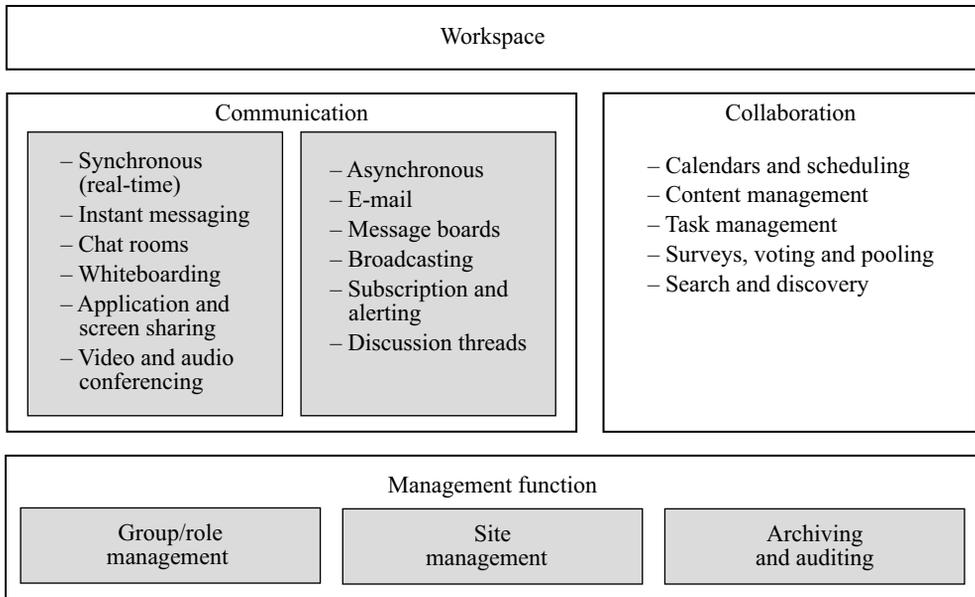


Figure 1. A model for collaboration software

Source: on the basis of [Woods 2005].

The scope of activities undertaken refers to domains that are used by particular individuals or teams to perform their individual or joint tasks. The scope means some environment that may be organised in the form of numerous teams, projects or tasks that are launch pads for co-operation. Adequately to already selected domains of actions undertaken it is necessary to configure an interface that would be different for the whole organisation, for teams and for individuals (differences are to be found in roles, tasks and personal preferences). Particular users or groups of users gain some access to appropriate co-operation and communication tools by means of a personalised interface.

Information technologies that support knowledge sharing may function in different environments including a local network or the Internet and their utilisation may be limited to selected processes or be designated for all or selected WWW users only. Figure 2 presents convergence of software that allows for sharing knowledge. The first group includes tools of the Internet discussion and communication along with systems of contents management. Both types of tools originate from the Internet and their applications are thought to be very valuable initiatives of knowledge management. Numerous organisations also use software that is aimed at group work and that does not come from the Internet, e.g. group work software to be used in LAN and WAN along with work flow systems and systems of documentation management. In this traditional software Web interfaces are currently being developed and in many cases they are thoroughly re-designed to meet the requirements of the world standard Internet architecture.

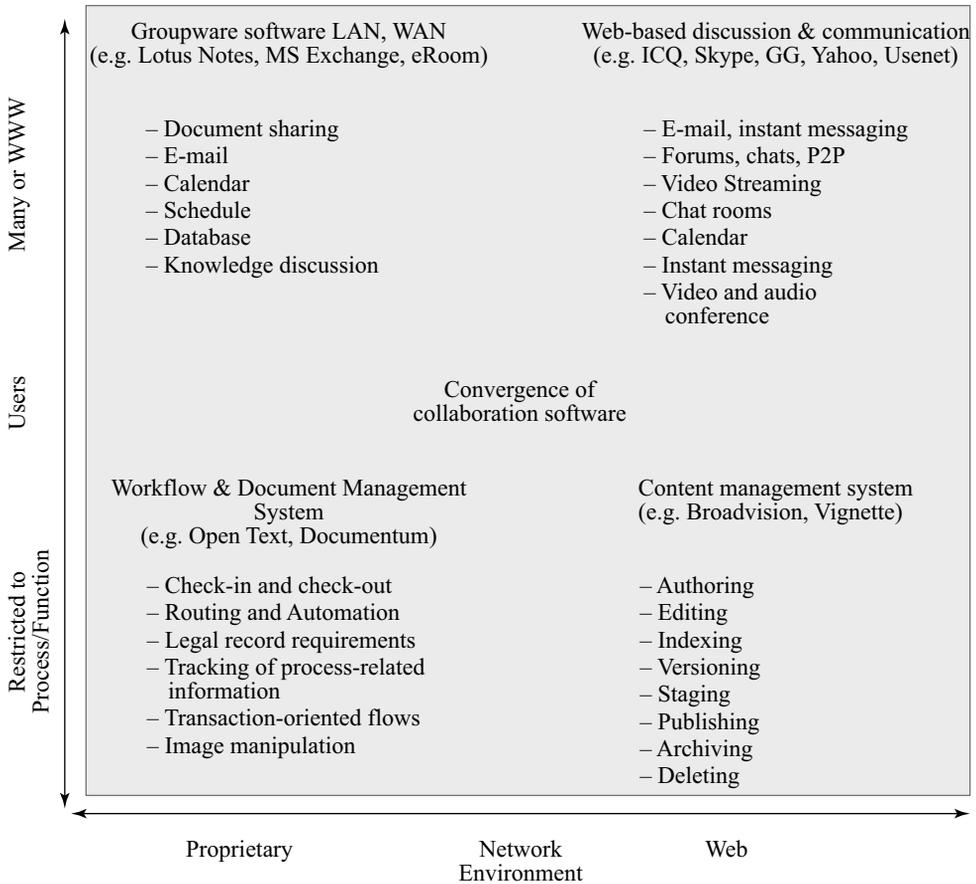


Figure 2. Convergence on collaboration tools

Source: [Terra, Gordon 2003].

Selection of particular co-operation tools ultimately depends on numerous factors including first of all already existing technologies that are applied in organisations, new functionalities required or types of knowledge to be shared (structural or non-structural, project or process-based, internal or external). Implementation and personalisation of software that supports co-operation have to be preceded by recognising and understanding actual work of target groups and teams in the organisation. Therefore, it is usually necessary to carry out a thorough analysis of formal and informal processes along with exchange of tacit and explicit knowledge.

### 5. Conditions of implementing CoPs in organisations

Development of CoPs requires organisational support and meticulous planning of technologies, processes and roles within particular groups. Below, the most im-

portant factors that affect CoPs implementation success are listed and analysed. The factors in question predominantly include the following [Terra, Gordon 2003]:

- Developing the rules (principles) of engagement for the community. Transition to the network community resembles transition to any new environment. Members of the community must learn the rules of participation in their new environment, good practices and “network etiquettes” or “netiquettes” (when and how to co-operate). The leader of the community should limit any activity that runs against the predetermined principles.
- Allowing both centralised and decentralised communities. Organisations may adopt two complementary approaches to integrate CoPs. One of them is to provide predefined community environments (with targeted content, list of individuals, co-operation tools, etc.) that are strategically and centrally planned. The other involves providing tools that allow for establishing own groups and network connections independently.
- Developing expertise maps and making sure profiles are updated. Expertise maps may include databases with lists and descriptions of the competencies of individuals within or outside organisations. New tools, for example, that mine unstructured information sources, such as e-mail, help locate experts or employees who are interested in particular topics. Ultimately, these tools facilitate sharing of tacit knowledge and the development of communities by allowing individuals to more quickly find and establish personal contacts with one another. The ability to rapidly talk to an expert, supported by the knowledge infrastructure of codified knowledge can create a strong intellectual asset base for organisations. Detailed, accurate, updated and meaningful profiles of users help establish connections and create the required levels of trust among participants. People are more willing to co-operate with others if the relationships become more personal (e.g. including photographs and personal information such as hobbies).
- Recognising different levels of participation. The recognition and identification of the different levels of participation (both quantitative and qualitative) of each individual are of particular importance to knowledge-exchange communities.
- Keeping the users motivated. Motivation requires alerting users of events, reminding them of the benefits of the community and the rules of meetings, and inviting everybody to contribute if they could enhance discussions.
- Leading by example. Participation of leaders in the activities of the community (especially if the leader is also a domain expert) certainly encourages others to participate.
- Establishing a sense of identity for the community. A sense of identity should be created through the establishment of clear purposes and specific goals, as well as through the development and fostering of a sense of history for the community. Participants should know how the community got started and who inspired and coordinated its development. All these elements are important for creating a brand. They also play a critical role in reminding members of their affiliation and promoting the goals and values of the community.

- Promoting the achievements of the community. In knowledge creating or sharing communities' community success depends largely on voluntary participation. Consequently, promoting the achievements of the community acts as advertisements for potential participants who have not joined the community yet.
- Creating special events. It is necessary to schedule online and offline social events that create important milestones and are a good reason for people to meet and establish synchronous communications. Numerous communities also invite special guests to increase participation and attract new members.
- Monitoring activities and satisfaction. It is necessary to keep statistics about participation levels of users, areas of contents most searched and visited and frequency of contributions. It is also recommended to conduct offline and online surveys to understand the needs and levels of satisfaction of members. With this kind of data available, it is possible to direct actions undertaken to discover reasons for occasional problems or diminishing participation in a particular community.

It is difficult not to notice that application of CoPs provides organisations with numerous challenges of organisational, mental and technological nature. However, taking into account that CoPs enjoy much potential of improvement in organisational learning and tacit knowledge management, it seems that wider application and promotion of CoPs in organisations are worth considering.

## 6. Conclusions

CoPs contribute to developing organisational knowledge and organisational learning. Furthermore, CoPs face challenges encountered while acquiring partners from the outside of internal networks – partners who possess unique competencies or resources of complementary nature.

First research results show that CoPs contribute to, among others, more effective problem solving, sharing experiences and best practices, mapping knowledge and searching for information, identifying gaps in knowledge resources, discussing, exchanging of opinions and developing contacts and co-operation inside organisations and with business partners.

In spite of unquestionable advantages of CoPs, they are not a widespread phenomenon in organisations. CoPs predominantly function in large enterprises. Good examples may be provided by Xerox (Eureka CoP for technicians and service engineers), Daimler Chrysler (tech club CoPs), Ford (best practice teams), the World Bank (CoP that deals with fighting poverty). CoPs that function in large organisations are supposed to regenerate organisation's social tissue that is debilitated by geographical dispersion. Unfortunately, in other organisations a level of knowledge and experience resulting from CoPs has to be evaluated as low and insufficient.

Therefore, it is necessary to undertake promotional actions that are aimed at popularising the very idea of CoPs in organisations, which encourages the Authors

to present the most important information on CoPs in this article. To make such a presentation effective philosophy of a network organisation is discussed together with importance of knowledge and organisational learning for the very model. The most important functions of CoPs in a contemporary organisation are listed and conditions of their implementations are described. Information and computer technology that ensures effective work of CoPs is suggested (particularly in the aspect of creating and sharing tacit knowledge and supporting group work). Additionally, some attempt to distinguish CoPs features that determine CoPs strategy, designing and utilising in organisations is made. Methodological aspects related to building CoPs in the context of capacities, functions and properties presented are going to be dealt with by the Authors in subsequent publications.

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