

An IT Perspective on Supporting Communities of Practice

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INTRODUCTION AND BACKGROUND

An increasing number of organisations have come to recognise the fact that encouraging and maintaining communities of professionals with common interests, aims, and objectives can reduce costs and increase profits. From enhancing customer responsiveness to increasing innovation and preventing reinvention, communities of practice (CoPs) are seen as an important vehicle to the improvement of organisational performance.

Even as the role of CoPs has been gaining momentum, the information technology (IT) community has become aware of the evolving opportunities and is consequently involved in attempting to provide the relevant software tools. This article investigates the requirements for the efficient IT support of CoPs, explores the advantages and pitfalls of supporting 'computerised' versions of these communities, reviews a number of existing software tools, and looks into emerging technologies considering their role and appropriateness.

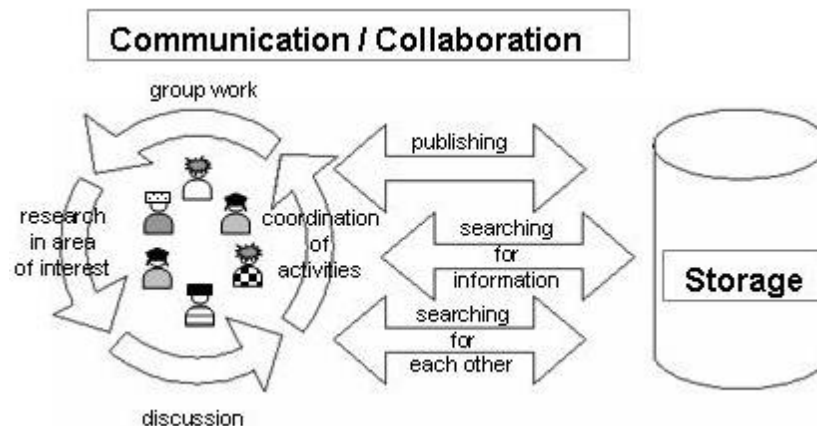
CoPs AND IT

CoPs are often viewed as a catalyst to the success of a particular organisation's KM system. Their mission is the capturing and sharing of knowledge among practitioners: a task that has traditionally relied upon communicating organisational knowledge via personal interaction and sharing of experiences, problems, and best practices.

One might question whether the deployment of IT in supporting CoPs is justifiable, and whether it would offer a clear return on investment. Those who are for IT support argue that providing easy access to critical market intelligence through, say, a portal, is always good for business. Those who are against tend to overemphasise the problems that electronic systems have created over the years for managers and users alike.

But in spite of such problems, bad press, and disaster cases that come under the umbrella of system failure scenarios, it is an undeniable fact that an ever-increasing amount of vital business informa-

Figure 1. Flow of activities



tion spends its whole lifecycle in digital format. This fact alone challenges the nature of old-fashioned communication/collaboration between the members of a group and adds to the need of consolidating the way information is handled.

While many communities are supported by Web sites providing knowledge sharing by means of online libraries, knowledge centres, specialist databases, information repositories, and white pages, only a few of them get the full necessary support. Terms like *online* and *virtual CoPs* are becoming commonplace, reflecting thus the increasing tendency to form expanded and even globalised versions of the traditional groups of people who come together to share their knowledge. Despite the spatial difference between traditional groups and their online counterparts, the actual requirements remain the same. Figure 1 summarises these requirements, and depicts the main flow of basic activities within a CoP.

Looking into the role that IT plays in assisting communities of practice, we can distinguish three (often overlapping) categories: supporting the social actions inherent in CoPs, supporting the different stages of CoPs' lifecycles, and adaptive use of collaborative computing technologies generally servicing knowledge management issues and requirements.

Supporting Social Actions

Following the framework proposed by Ngwenyama and Lyytinen (1997), the four types of social actions can be seen at work here: instrumental, communicative, discursive, and strategic. According to this division we can now look at the four action clusters from an IT viewpoint, identifying what type of software/groupware would be appropriate for carrying out their respective tasks.

1. **Instrumental actions:** This category is supported by the so-called *research tools*. These are tools that provide the person executing the instrumental action with the relevant resources—that is, the relevant knowledge. Databases, data warehouses, data marts, electronic document management systems (EDMs), knowledge bases, and knowledge servers all play the role of *knowledge repositories* under

this category. The research tools that extract knowledge from these repositories come in all shapes and guises, from database query languages and search engine facilities to data mining and intelligent agents.

2. **Communicative actions:** Traditionally, this is the earliest and possibly most efficiently supported category. Use of e-mail, list servers, Internet, corporate intranets, and even remote login facilities, file transfer, and electronic messaging are examples of communication tools.
3. **Discursive actions:** Apart from the possible overlap with the previous category—such as the use of e-mail and listserv facilities—there are dedicated groupware packages that assist the setting up, customisation, and configuration of online discussion groups. Chat rooms and e-conferencing are also popular applications. In general, collaboration services come under two categories: *synchronous* and *asynchronous*. Instant messaging facilities, e-conferencing, and all sorts of audio and/or video streaming belong to the former category, whereas discussion forums, calendar postings, and e-mail belong to the latter.
4. **Strategic actions:** These form the last category, the only one with no evident IT support. Although closely related to instrumental actions to the extent that they both strive to achieve rational objectives, the two categories differ in their view of the opponent: the person executing the instrumental action treats the adversary as an organisational resource and not as a person capable of intelligent counteraction (Ngwenyama & Lee, 1997), which is the case in the strategic action. This “quirkiness” alone makes things hard as it predefines a requirement difficult to resolve with conventional IT tools. The solution is likely to come from the artificial intelligence community, with the use of intelligent agents. These are adaptive computer programs capable of reasoning and learning, and are collectively known as *bots*. There are many types of agents, each performing specific, specialised tasks (search bots, chatter bots, shopping bots, etc.). Their potential to support strategic actions derives from the fact that they are sociable—they can

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