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Learning from the Environment: Exploring the Relation Between Organizational Learning, Knowledge Management and Information/Communication Technology

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Introduction

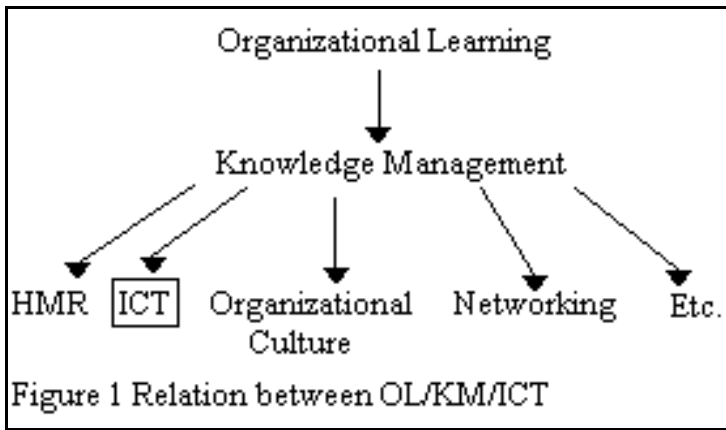
The aim of the paper is to contribute to the ongoing discussion on Organizational Learning (OL) and Knowledge Management (KM). We will do this by focusing on a specific domain of OL: 'external learning' or the exchange of knowledge between organizations. In general, KM is seen as a method organizations and managers can use to improve the knowledge *within* the organization. Surprisingly less attention is given to the way KM might improve the knowledge that is being exchanged and created between the organization and the environment.

We will first introduce our interpretation of the two concepts: OL and KM, and how they are interrelated. Secondly we will go in more detail into one specific aspect of KM: the information/communication technological (ICT) aspect. We argue that although there seems to be an intuitive link between KM and ICT (Pentland 1995), statements about how ICT can support KM should always be preceded by an analysis of the learning needs and learning problems of the organization in question. Because of the promising possibilities that Internet might offer, we will center the discussion on various usage's of Internet technologies.

Organizational Learning and Knowledge Management

The significance of the concept of OL has become increasingly accepted among researchers within the field of organizational studies. Nevertheless, convincing and commonly accepted understandings of the meaning of the concept still seem to be lacking. The way OL is approached heavily depends on the perspective taken. In general, the various ideas on OL can be reduced to two perspectives: an outcome perspective and a process perspective. An outcome perspective focuses on how positive results of learning can be fostered, while a process perspective is directed on the actual process through which organization construct and reconstruct organizational knowledge, such as shared values, technologies, paradigms, practices, etc. The process of learning might result both in positively valued outcomes such as intelligence and improvement as well as negative valued outcomes such as self-destruction, inertia (Huysman 1996). Our ideas are centered on the latter approach to learning because such a perspective illustrates the dynamics of learning and reveals the traps and obstacles organization might face during learning. In this paper, we treat OL as the process of organizational knowledge (re)construction. Emphasizing the construction of collective knowledge is in line with other recent contributions to the field (Brown and Duguid 1991; Nicolini and Meznar 1995; Pentland, B.T 1995) and is inspired by the social constructivist approach to knowledge (Berger and Luckman 1966; Gergen 1994, Schultz 1971). Central is the way through which individual or local knowledge is 'incorporated' into collective knowledge or organizational knowledge. We refer to organizational knowledge as practices, procedures, stories, technologies, collective opinions, paradigms, frames of references etc., through which organizations are constructed and through which they operate. What is important is that organizational knowledge is independent from the individual actor. This is similar to the position of Attewel (1992) who argues that "the organization learns only insofar as individual skills and insights become embodied in organizational routines, practices, and beliefs that outlast the presence of the originated individual". KM is a means through which OL processes can be supported. This support of learning should be done in such a way that learning results in positively valued outcomes. This implies that KM should always be preceded by an analysis of organizational learning processes. KM can be approached from different angles which means that the 'KM-toolkit' should be interdisciplinary. For example, KM has implications for the design of information systems, the development of networks, the change of the organizational culture, the creation of training-courses, etc. Hence, the concept is of interests to a diverse group of organizational practitioners ranging from software houses and network specialists to trainers and human resource practitioners. In this paper, we limit our attention on the ICT aspect of KM (see Figure 1), and in specific on Internet technologies.

There are two processes that make up organizational learning: internal learning: the learning within the organization and external learning: the learning between organizations (Levitt and March 1988). In practice, the two learning processes are often intertwined. Deviding learning into these two types of learning is therefore mainly conceptually of interest. When KM is related to OL (or vice versa), most often authors implicitly refer to internal learning; KM is generally perceived as a technology to enhance the creation and exchange of knowledge *within* the organizations. Although we agree that KM has indeed the possibility of enhancing internal learning, interesting possibilities are lying open in relating KM with external learning.



Knowledge Management Supporting External Learning

Figure 2 depicts the various actors in the field in which organizations learn from others. With “third actors” we refer to all does relevant actors besides consumers or customers of the organization.

For example, we could think of the government, supplier organizations, competitors, cooperating organizations, etc. With a “community of clients” we refer to a - often ‘virtual’- group of real or potential clients or customers of the organization. With the arrows, the figure refers to the various (reciprocal) ways in which knowledge is exchanged within the field. Arrows pointing to the organizations, refer to an organizational learning process in which the organization learns from actors within the environment:

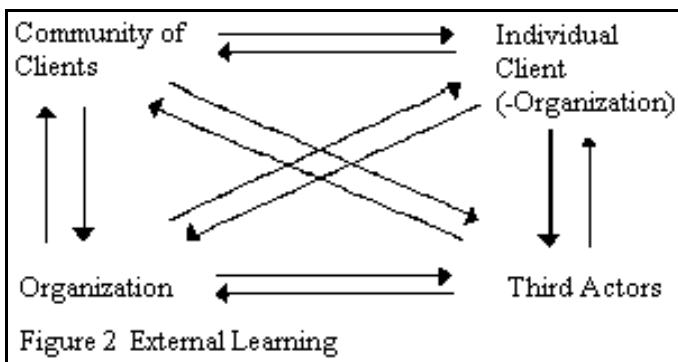
external learning. An organization learns for example from third actors when it imitates a competitor within the field who is changing its port-folio. The organization learns from an individual client for example when it learns from a consumer that it should replenish its supply of beverages. The organization learns from a community of clients when it reacts to the responses of for example, citizens on social experiments.

There are various reasons why this external learning might be problematic, which all have the do with a lack or shortage of knowledge about the various actors within the field and their interrelationship. This ‘handicapped learning’ can be challenged by gaining more insight into the various streams of knowledge within the field. This awareness would reduce the risk of the occurrence of the following problematic learning situations:

Table 1. Aspects of Problematic Learning (Huysman 1996)

Filtered learning	Actors filter the knowledge that they exchange
Egocentric learning	The organization interprets information from its own frame of reference
Unbalanced learning	The organization learns only from a selected group of actors
Autonomous learning	Actors do not learn from the organization

An organization can reduce the risk of these types of ‘handicapped learning’ by gaining more information about the actors within the field and their interrelation with other actors. This is represented in Figure 2 by all arrows other than those pointing to the organization. A public organization learns for example from the community of clients that they should improve their services. It is however important to know whether these clients are indeed reacting to the delivered services of the organization or that their reaction is more a result of reacting to other environmental actions, such as negative publications in the mass media.



As mentioned, KM requires an interdisciplinary approach necessitating a continuous interaction between the representatives of the various attention-fields. For example, Human Resource Managers will construct a different picture than ICT professionals. Given the possibilities that the Internet might offer to enhance communication with and between environmental actors by providing information, we will restrict our presentation to a discussion of the use of Internet technologies.

Internet Usage's And External Learning

In this section we will analyze how Internet might support external learning processes as part of knowledge management. It can be argued that the use of Internet

technologies has the potential to increase the occurrence of positively valued outcomes of learning. As mentioned, all forms of problematic learning (see table 1) are caused by a limited access to information. Since Internet technologies offers the possibility of gaining broader and deeper access to information, the use of Internet will, at least in theory, increase efficient and effective learning processes. Box 1 provides a short example of a case of organizational learning from the environment through the use of the Internet.

Table 2. Examples of Fields of Knowledge Supported by Interent Usages

To From	Organization	Third Actor	Client	Community of Clients
Organization	Intranet	Internet Clipboard, E-mail (1-1 or 1- n), Extranet	E-mail (1-1)	Clipboard, FAQ, Intranet, Internet, Information broker, Conference
Third Actor	Internet, E-mail (1-1)	X	Internet, E-mail (1-1)	Discussion groups, forum, Clipboard
Client	E-mail (1-1), Discussion group, Electronic questionnaire (push)	Individual web- sites, Clipboard, E-mail (1-1 or 1-n)	X	E-mail (1-1 and 1-n), Forum, Clipboard
Community of clients	Forum, Discussion group, Electronic questionnaire (pull), hits	Forum, Discussion group	Forum, Discussion group	Electronic Communities

BOX 1 Example of external through Internet usage; “Parentsoup”, an Electronic Community on the Internet

A father experienced some negative effects of using a particular cough syrup. Through a Parentsoup forum, parents became aware that many other parents experienced similar problems. As the problems all seemed to do with a cough syrup of a particular brand, Parentsoup contacted this producer on behalf of its members. The producer agreed in constructing a website, facilitated by Parentsoup, containing research information specific to the problem. This specific website stimulated Parentsoup members in turn to communicate to the producer their personal experience with the product. As a result of this accumulated knowledge, the producer changed its method of preparing the cough syrup.

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