Knowledge Management:
Concepts, Methodologies, Tools, and Applications

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Chapter 3.3
Intranet and Organizational Learning

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INTRODUCTION

In this article, we will analyze the cultural dimension of intranets as knowledge management tools within organizations. An intranet is an information communication technology (ICT) based upon Internet technology (http://www, TCP/IP). The intranet phenomenon was introduced in the early 1990s following the idea that it can integrate all the computers, software, and databases within a particular organization into a single system that enables employees to find and share all the information they need for their work (Bernard, 1997; Cortese, 1996). Intranets function as a computer-mediated communication (CMC) tool and are used as computing networks used for sharing organizational information. While Internet technology is leading, access is restricted exclusively to organizational members (by means of electronic firewalls). In a study to the role of in-

tranets in strategic management decisions, Curry and Stancich (2000) define Intranets as "…private computing networks, internal to an organization, allowing access only to authorized users" (p. 250). The term private indicates that an intranet is a network that can be accessed only by members of a particular organization. The term network emphasizes the connection between computers that enables corporate communication. Intranets run on open but controlled networks that enable organization members to employ the same WWW servers and browsers, which are distributed over the local area network (LAN).

In recent debates on strategic management and learning, an organizational learning culture has been introduced as one of the main 'critical success factors' underlying the effective use of intranets (Carayannis, 1998). The aim of this article is to analyze the cultural aspects of intranets as tools in organizational learning processes. It

is not so much a presentation of the instrumental effects of intranets for the learning organization culture—the way an intranet influences organizational learning processes is not taken for granted, but studied by the way it is used in different settings. We will present a framework for analyzing the cultural dimension of intranets within specific organizational contexts.

Many studies of intranets dealing with the effectiveness and efficiency of knowledge sharing and knowledge management take a static and deterministic point of view. That means that the focus is on structural constrains, without paying attention to the actual use of intranets. In contrast with this, we plea for an approach focusing upon communicative actions, and stress the communication between people on the intranet on the basis of normative agreement and feelings of mutual understanding and belonging. We furthermore highlight three dimensions from which this cultural context of an intranet can be defined, studied, and analyzed. These dimensions, which indeed apply to any enterprise system (ES) and which in a way also represent historical phases in the development of technology (Silverstone & Haddon, 1996), will in our contextual analysis be specified as the 'constitution' of an intranet, the intranet as a 'condition' of the learning organization, and the (unintended) 'consequences' of intranet use. An analysis on these levels is crucial for those scholars who want to grasp the cultural dimension in the actual use of intranets as a knowledge management tool.

INTRANET AND ORGANIZATIONAL CULTURE

Often, the objective for the implementation of an intranet is that it will facilitate knowledge sharing among members within a single organization. There is a growing body of publications that see an intranet as a tool for organizational learning (e.g., Carayannis, 1998; Curry & Stancich, 2000; Scott,

1998; Sridhar, 1998; Ottosson, 2003). With regard to knowledge management, it has been analyzed in terms of knowledge banks, e-learning platforms, expert networks, online information sharing tools, and the like. Recently, intranets were identified as an infrastructure supporting knowledge management (Harvey, Palmer, & Speier, 1998; Damsgaard & Scheepers, 2001). In this body of literature, intranets are presented as promising knowledge management ICT tools in the sense that intranets will be complementary to or even replace existing information and communication carriers within and among organizations. In addition, intranets are seen as promising instruments for information sharing and collaboration across departments, functions, and information systems (Damsgaard & Scheepers, 1999). Internet-based ICTs like an intranet are even introduced as radical and disruptive innovations, since the implementation is intended strongly to influence the knowledge base of the organization (Lyytinen & Rose, 2003; Mustonen-Ollila & Lyytinen, 2003).

Together with the stories on the promising aspect of intranets, however, came the stories about organizational restrictions, misalignments, and user resistance. Discussions can be found about organizational constraints, such as the lack of standards, immature interfaces, weak linkages to other information systems, bandwidth availability and information overload, and the lack of an internal organization to authorize, support, and organize the quality of the information. On many occasions, it is the organizational culture that has been introduced as an explanation for misalignments or as a condition for a successful implementation and use of intranets (Damsgaard & Scheepers, 2001, p. 5). Curry and Stancich (2000) state: "To obtain maximum value from an intranet, both the 'soft' cultural issues of information sharing and change in work processes must be addressed alongside the 'hard' systems issues of managing the intranet as an information system and a business resource" (p. 255). Moreover, it has been argued that a cultural shift to information

sharing is necessary to solve problems of information sharing by means of intranets (Harvey et al., 1998). A positive culture, in this respect, is the motivation to create, share, and use information and knowledge to solve problems with each other within the organization.

It is, however, difficult and often misleading to establish direct causal links between organizational culture and the performance of intranets, since we must realize that culture is part and parcel of the entire organization and affects all kinds of actions and relations (Alvesson, 2002). The definition of 'organizational culture' is itself problematic. It has been described in the literature as a pattern of shared assumptions often produced by top management (Schein, 1992). Such a description of culture as a set of shared assumptions is rather oversimplified (Martin, 1992). Empirical research provides us with a far more complex picture, and shows that tensions can grow and remain between the individuals' interests and organization aims. Because of cognitive and normative diversity within an organization, the attribution of meaning (which is an important part of the cultural process) is complicated and leads to integration as well as fragmentation, and unity as well as diversity.

In line with this, organizational culture has been defined as a sensemaking process (Weick, 1995). That means that we have to study how individual workers give meaning to their actions. In using intranets, like texts such as reports, statistics, protocols, and minutes, the organizational members give meaning to their activities. In this way "…we can understand such interpretations as stemming from the very use of intranet itself" (Edenius & Borgerson, 2003, p. 131). The use of an intranet can generate a kind of consensual knowledge and, as long as different workers get into mutual trust, this can lead to a feeling of belonging. To use an intranet is making sense of experiences, routines, and insights. On a more abstract level, Wenger introduced the term 'communities of practice' to describe the process of

people who share common goals or interests and how the people interact with each other to learn how to do better. These communities are formed by people who engage in a process of collective learning in a shared domain of human endeavor (Wenger, 1998; Wenger, McDermott, & Snyder, 2002). Communities of practice enable practitioners to share knowledge, to create a link between learning and performance, and to make connections among others across structural organizational boarders. Because of this, we will discuss intranet and organizational culture in terms of 'shared' meaningful work practices, while at the same time recognizing the existence of multiple working cultures dealing with intranets.

INTRANET AND ORGANIZATIONAL LEARNING

As argued above, an intranet can facilitate knowledge sharing among organization members. The idea is that the knowledge put on the intranet is explicit knowledge (in the terms of Polanyi) that can easily be shared by members of the user group. However, the term 'knowledge sharing' is problematic, because the people's tacit knowing—that is, how to do things—is never fully shared (Walsham, 2002). Only if the data (the explicit knowledge) on the intranet is connected to the tacit knowing, then can the intranet offer something interesting to that user—it can generate a kind of consensual knowledge. That implies that the user must have the skills and competence in selecting the appropriate explicit knowledge. In other words, the knowledge is not in the computer system, but within the human being. It is the end-users that give sense to the data and messages on the intranet by means of their tacit knowing.

Like other ICTs, intranets are the outcome of choices made by individual actors or groups and of organizational constraints that together influence the character of this particular technology. This is known in the literature as the

process of mutual shaping (Williams & Edge, 1996; Orlikowski, 2000). While using intranets, actors produce and reproduce communication and information patterns within organizations. Organizational learning on intranets thus can be analyzed as a social process of structuration (in line with Berends, Boersma, & Weggeman, 2003). From this structurationist framework it has been stressed, in particular by Orlikowski (2000), that individual actors are always situated actors. In using ICT tools actors reproduce at the same time important normative and power relations. Thus linkages can be specified between on the one hand the meanings attributed to technologies and on the other hand the normative prescriptions and power relations of organizations.

It has been argued before that an intranet is as good as its content (Curry & Stancich, 2000; White, 2004). Intranets facilitate communication and information sharing among organization members only if the employees can find the data they need, can judge the information to be valid and current, and can trust the persons—gatekeepers—who are responsible for the content of the intranet. However, Edenius and Borgerson (2003) argue that this idea of the intranet as being a container-like tool, where knowledge is seen as a stable stock of fixed information, takes a conventional rational discussion about knowledge management as a starting point. According to them, this view underestimates that an intranet works as a dynamic configuration that also produces knowledge. In other words, the use of an intranet is part of the living act of knowing.

The use of intranet as a tool for knowledge management needs actors who creatively realize learning practices and communication patterns as part of organizational cultures. That means that organizational learning consists of changing organizational practices via the development of knowledge, realized in social practices (Gherardi & Nicolini, 2001). The benefit of knowledge sharing (i.e., learning processes) throughout the organization via an intranet cannot be reduced to individual learning, or individual learning plus something extra such as the sharing of knowledge. Individuals will benefit from intranets in terms of information sharing only if the technology 'fits' into their daily routines embedded within organizational cultures. In this perspective, the organizational knowledge is part of and lives in a constellation of communities of practice (Wenger, 1998). The intranet can be a challenge for these communities, because it offers a platform for sharing knowledge and mutual understanding.

In defining an intranet from this point of view, three different but mutually related dimensions should be taken into account. These dimensions include the constitution of the intranet (stressing the redefinition of learning practices), the intranet as a condition of organizations (stressing the virtualization of organizations), and the intended as well as unintended consequences of the intranet (stressing the globalization of organizations and power relations). In the interaction between these three dimensions of intranet, we find how organizational cultural aspects shape this technology and how this technology in its turn influences organizational cultures.

THREE DIMENSIONS OF AN INTRANET

The first dimension in our approach is the study of the constitution of an intranet. This dimension refers to the material, time-spatial, appearance of intranets. It concerns the artifacts and persons intranets are made of, including PCs, cables, mainframes, software packages, interfaces, reports, and intranet programmers and operators. Similar to the argument Downey (2001) makes for the Internet, intranet workers can only be revealed if we consider the artifacts, labor, and space simultaneously. Therefore a cultural study of the intranet should pay serious attention to

the material and geographical aspects of these systems. Conceptions of organizational culture usually not only refer to values and rules, but also to material artifacts (Schein, 1992), which increasingly consist of ICT systems. In line with the discussion above, the evolution of intranets can only be interpreted by studying the interests and perceptions of the various actors that use this ES. An intranet is not a given technology, although it has some scripts (i.e., standard procedures for users), but is a malleable tool shaped by social forces within the organization.

The second dimension, the intranet as a condition for organizations, refers to the functional integration of knowledge (sub)systems by the use of an intranet. An intranet may contribute to the development of 'network enterprises', defined by Castells (1996). This type of organization is rather flexible because it can both reallocate its means of production and change its goals. The intranet, as a knowledge-sharing tool, can function within network organizations as an enabling tool to reconfigure themselves. Like the Internet, intranets create new patterns of social behavior and communication (DiMaggio, Hargittai, Neuman, & Robinson, 2001). Knowledge sharing within network organizations is facilitated but not determined by ICT systems like intranets. In this respect, the borders within and between organizations are constantly reinterpreted, because the structure of the intranet makes it possible to bind people working at different locations together—it is the virtual space of the intranet that is the new condition for a learning environment. In a way, intranets link employees, divisions, and companies, and provide information anytime and anyplace, and enable and reinforce network structures. The aspect of an intranet as a virtual dimension of an organization where partners are located over a wide area linked seamlessly together, however, is yet to be reached due to the relative recency of the system (Kim, 1998).

The third dimension highlights the consequences of the use of an intranet for organizational culture and the wider environment. This dimension refers to the actual effects of an intranet, and concerns the intended as well as unintended consequences. Effects concerning the scaling-up and globalization and the managerial control over knowledge flows seem particularly relevant for the cultural analysis of an intranet. Organizations are embedded in extended networks and operate often in global markets. In some way they have to control these global operations and manage knowledge flows in this context in a coordinated manner. The intended and unintended use enhances the capacity of panoptic control and disciplinary power—an architecture of power closely associated with ICT systems (Zuboff, 1988). Management can use the stored information on the intranet to monitor and interfere with the performance of individuals and groups. At the same time individuals can be empowered by the system and carry out their tasks with more responsibility based on their own insights, preferences, and information from the intranet. However, there are unintended consequences due to these virtual aspects. While the use of an intranet can lead to a sense of belonging, a possible decrease in face-to-face communication is the other side of the coin (Hine, 2000). This can easily lead to a loss of shared identity and weaken social relationships with colleagues within the same organization. Participation on the intranet in this respect is rather anonymous, without much engagement, and therefore maybe less effective as a tool for knowledge management.

FUTURE RESEARCH

Intranets are likely to be further developed in many organizations in the near future as a new communication infrastructure. It is presented both within popular management literature as in international journals as another promising bandwagon for organizations (Lynch, 1997). There is a growing number of managers that implement intranets as a solution for knowledge

sharing within the organization. Future research should study the consequences of intranets as a tool for knowledge management to understand the organizational cultural aspects in the way it is presented in this article. It is the people who work with the system that give meaning to the data on an intranet. To understand how people give meaning to the (data on) an intranet, we have to follow the evolution of intranets (within specific contexts) over a longer period of time. This means that "attempts to create unified, universally applicable models or 'best practice' guidelines for designing and implementing intranets are futile. Instead we have to recognize organizational diversity and that the technology is embedded in, and shaped by, its social context" (Bansler, Damsgaard, Scheepers, Havn & Thommesen, 2000, p. 18). We want to argue that it is necessary to integrate both the individual contributions (i.e., the use of technology), group dynamics, and the organizational cultural aspects in a well-balanced manner during the implementation and use of intranets in the process of organizational learning.

Important questions to raise in this respect are inspired by the way Hine (2000) questions the 'virtual life' on the Internet:

- How do the users of an intranet understand its capacity, and how do they interpret it as a medium of communication?
- How does the intranet affect the organization of social relationships within the organization, and is this different to the way in which 'real life' is organized?
- What are the implications of an intranet for the authority and power relations within the organization?
- How do people define the boundary between the real data and the virtual data on the intranet?

CONCLUSION

Because users give meaning to the intranet, "…organizations need to carefully consider how their intranet should be deployed so as to reap the maximum benefit in terms of knowledge creation" (Damsgaard & Scheepers, 2001, p. 11). Intranets are not a pre-given and unproblematic tool for knowledge management. Instead, the implementation and use of an intranet as a tool for knowledge sharing needs a careful understanding of its social-cultural impact and at the same time has to be seen as a cultural phenomenon in itself. This means that an intranet should not be treated as the explanans (the thing or solution that explains the communication problem); in other words, with the help of the intranet, we can solve our communication problems—but rather as the explanandum (the thing or solution that has to be explained): What are the cultural features that shaped the intranet, and in what way does the use of intranets shape and reshape communication patterns within the organization?

In order to understand the cultural aspects of intranets, we have to incorporate the sensemaking processes both during the managerial implementation process as well as in a socio-cultural analysis. In our approach this means a careful analysis of the condition of intranets (what socio-technical choices are made to build the technology), intranet as a constitution (what kind of organization is made possible by the intranet), and the consequences of intranets (how the intranet affects the communication patterns within the organization). This perspective offers the possibility to integrate the 'virtual' communication on the intranet with the patterns of social behavior in the 'real' world.

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