

Knowledge Networking in Global Organizations: The Transfer of Knowledge

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ABSTRACT

This article focuses on how knowledge can be developed and transferred in multinational organizations, and how ‘communities of knowing’ can stimulate these knowledge processes through global collaboration supported by information and communication technology (ICT). Former IS research findings regarding virtual collaborative work across geographical and organizational boundaries are reviewed and discussed towards established knowledge and globalization theories. A description of knowledge management initiatives in the telecommunications corporation Ericsson exemplifies the implementation of an explicit knowledge networking strategy where different ‘communities of knowing’ are the point of effort concerning utilization of the knowledge potential in the entire organization. The analysis indicates that an inter-organizational context for the communities and cross-communities communication increase the complexity and difficulties for knowledge transfer and sharing mechanisms and collaboration.

Categories and Subject Descriptors

H.4.3 [Information Systems Applications]: Communications applications

General Terms

Human Factors, management

Keywords

Knowledge networking, communities of knowing, knowledge transfer, globalization, glocal mentality, modernity, information and communication technology.

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1. INTRODUCTION

The term globalization has several meanings and definitions; but it certainly reflects the increasing interconnection of societies in terms of their economic, political and cultural aspects. Globalization means that borders become less relevant to everyday behavior. It points to something not understood and hard to understand yet at the same time familiar. It is changing everyday life with considerable force and compelling everyone to adapt and respond in various ways. A community of social scientists like Giddens, Beck and Castells, have developed globalization theories which focus on threats and opportunities of globalization, and how this contemporary phenomenon are reshaping our lives in terms of risk, tradition and family. Globalization is therefore not to be understood as a single linear process, but as an array of complex processes operating in different directions at once. These complexities have implied increasing research interest for investigation of globalization processes in terms of identifying their dynamics, and how to find successful combination of increased control, integration and flexibility [19], [37].

Large multinational organizations experience great pressure concerning efficiency and effectiveness to survive due to the increasing competition worldwide. As a result of this many organizations are undergoing radical changes which require more flexible, networked organizational forms to cope with rapid changes in business markets and increased global competition. By making several business processes global they try to generate benefits from coordination and standardization across geographical boundaries. The fact that global contexts increase the complexity and difficulties to apply appropriate corporate and local management policies suitable to a global workforce, make globalization issues difficult to understand and respond to in a proper way for the organizations.

Knowledge and competence have become increasingly relevant for organizations since the shift from an industrial economy based on assembly lines and hierarchical control to a global, decentralized, and information-driven or knowledge-based economy. Due to the global economy, organizations now work, compete, and cooperate on a worldwide scale. Therefore, they must be able to maintain and reproduce their core competencies and corporate identity regardless of the geographical distance. They must also be capable of creatively enriching such competencies by utilizing the knowledge potential developed in different local communities who are participating in the global workforce [10]. Global organizations face a range of technical

challenges to gather and integrate these pieces of information and knowledge across boundaries, and managerial, organizational and cultural aspects are involved in using this information in new ways within the organization.

The main objective of this article is to illuminate how knowledge can be shared and transferred in multinational organizations, and how a network of different ‘communities of knowing’ [9] can stimulate these knowledge processes through global collaboration supported by information and communication technology (ICT). In these multinational settings the differences in organizational cultures and business practices will increase the complexity and challenges when companies want to utilize the knowledge potential across geographical and organizational boundaries. To stimulate these knowledge processes some organizations, i.e. Ericsson [15] have emphasized establishment of more or less informal social networks like different ‘communities of knowing’. There is increasing research interest in how ‘communities of knowing’ can stimulate the knowledge processes of the organization to ensure innovation and organizational learning. However, Hellström et al., [21] argue that virtual interaction does not create lasting relations and networks compared to direct personal contact for transferring knowledge. On the other hand, extensive knowledge transfer could not happen in large global companies without the tools provided by information technology [14]. The challenge of utilization of information technologies like collaboration technology is important to enable these processes.

In this article challenges in virtual transfer of knowledge are focused, based on a review of research findings from the IS literature. This encompasses different case studies comprising globalization theories and issues related to virtual knowledge transfer and sharing in multi-site teams and communities. Knowledge management initiatives in the Swedish multinational telecommunications corporation Ericsson represent one such exemplary case. Their knowledge management strategy constitutes a knowledge networking philosophy where knowledge is developed, transferred and shared through different ‘communities of knowing’. The company’s explicit knowledge strategy illustrates how an international company is capable to utilize existing competence and knowledge through intra- and inter-organizational global networking supported by ICT. The discussion related to Ericsson does also describe some important enabling factors which stimulate knowledge sharing across geographically and organizational borders.

The structure of the paper is as follows: section two discusses topics related to different globalization perspectives, section three covers conceptualizations of knowledge and knowledge processes, followed by a discussion of global networking in chapter four. Chapter five discusses the knowledge management initiatives in Ericsson before implications are presented in chapter six.

2. GLOBALIZATION PERSPECTIVES

The term globalization is hard to define in a precise way. Giddens’ [16] definition of globalization is: *...acting and living (together) over distances, across the apparently separate worlds of national states, religious, regions and continents...*

Globalization denotes the processes through which sovereign national states are criss-crossed and undermined by transnational actors with varying prospects of power, orientations, identities and networks.

Globalization can not, or should not be treated as an ‘out there’ phenomenon which is far removed from the individual. Rather globalization is to be understood as an ‘in here’ phenomenon which influences the most intimate and personal aspects of our lives [16].

2.1 Dimensions of globalization

Both Giddens [17] and Beck [5] emphasize the necessity to distinguish a number of dimensions of globalization like communication technology, ecology, economics, work organization, culture and civil society. The complexities that these dimensions create appear in divergent ways. First, globalization involves ‘pulling away’ of power and influences from local communities and even nations, and the establishment of a new ‘global arena’. Secondly, it is also pushing downwards, creating new pressures for local autonomy. Finally, globalization may ‘squeeze sideways’, and lead to the creation of new regional zones either within or across the boundaries of nation-states (e.g. Hong Kong region).

An essential dynamic of modernity, is the separation of time and space which has been possible through the invention of various technologies like the clock, and the standardization of time activities across time zones, calendars and so on. This is essential to the coordination of activities across time and space. However, this time-space distantiation includes complex relations between local involvements and interaction across distances. Globalization is a part of this process, and connection between different social contexts and regions become networked across the earth’s surface as a whole. Globalization intensifies world-wide social relations, and link distant localities in such way that local happenings are shaped by events occurring far away and visa versa [19].

A general consequence of modernization and globalization is emergence of the ‘risk society’. Beck, [5] representing the reflexive modernity which is the contemporary phase of human development. Increasing risk means decreasing control. Both Giddens and Beck see current modernization and globalization processes as a break from earlier modernization. Traditionally, modernization implied more sophisticated control because of increased knowledge and better technology. However, in the age of high modernity and globalization, more knowledge may as well lead to more unpredictability, uncertainty and less controllability [19]. We are forced to engage actively with the knowledge produced by experts, and make reflexive choices as to the risk we decide to take and the trust we choose to invest in others. This is the key part of what Giddens [17] terms ‘reflexive modernization’, since individuals, families and institutions are finally set free from the constraints of tradition, and are forced to order and reorder their activities in the light of expert knowledge. Related to globalization, this process is fundamentally unstable; first, the reflexivity of modernity does not stabilize the relation between expert knowledge and knowledge applied in lay actions. Secondly, while reflexive modernization liberates people from tradition, the tradition itself does not simply disappear; rather it becomes a choice, not an obligation. This means that self-identity can no longer be derived simply from a given order, but has to be created and recreated on a more active basis than before. This process can never be completely stable, since self-identity is reflexive in nature, and is shaped by, while in turn also shaping, the institutions of modernity [18].

Giddens' argument to respond to this uncertainty and increased anxiety of the individuals is political oriented; the world needs more government and greater control of high (reflexive) modernity which can be achieved through further democratization of the world. This process should involve devolution of power, constitutional reform, greater transparency in political affairs, the fostering of a strong civic culture, and the pursuit of new transnational or global democratic forms [16].

2.2 A 'Glocal' Mentality

Increased globalization in business processes requires similarities, standardization, homogenization, concentration, and coordination on a worldwide basis. Johansson [25] states that there are four groups of variables that could force companies towards globalization: market, competition, cost and government. Globalization of business activities could give cost savings/reductions and lead to restructuring of international logistics operations.

It is major drawbacks of global homogeneity like the reduction of responsiveness to local needs, distance from the customers, increased currency risk, reduction of adaptation to local customer behavior and the marketing environment, and local competitiveness, all of which may be sacrificed [44].

To get a global strategy to work, it is important that the head office is familiar with local conditions, and it must be a two-way communication between head office and subsidiaries, consistent decision-making practices, ability to refute decisions, and provide explanations for final decisions.

Begley and Boyd [7] emphasize the importance and the need for a 'corporate global mind-set' to achieve international success. Establishing a corporate global mind-set requires individual managers to demonstrate a 'glocal' mentality. They must be able to balance formalization with flexibility through modular networks and 'communities of practice', and formalization with customization through distributive management [7].

Bartlett and Ghoshal [4] have developed four global business strategy models from which a multinational corporation can choose in its process of becoming global. The transitions which a company in a globalization process are supposed to follow form a sequential path which involves steps from multinational to international, from international to global, and finally from global to transnational.

Bartlett's and Ghosal's global strategy model has been criticized, because a global strategy is aiming to achieve a common, homogeneous, global organizational culture, which might be impossible [24]. Husted's [24] view of internationalization concerns the development of inter-regional, or glocal, company networks within the network society [12]. This acknowledges the manner in which work and business processes are embedded locally yet at the same time linked up with global 'flows' [39]. Thus, the concept of 'glocalization' has become highly relevant in the discussion of the balancing between global standardization versus local flexibility which are contradicting issues. An intensification of the link between the local and the global has become a necessity in this process of balancing, where a 'glocal' mentality means deepening the companies understanding of local and cultural differences [7], [36], [39].

2.3 Globalization and IT

According to Giddens [16] globalization is creating increasing dynamics and an unpredictable world which influence technological, political and cultural aspects as well as our personal lives. Coordination of complex global processes and standardization (e.g. through information technology (IT)) will be in contradiction to this dynamic and unpredictable, global environment. Cultural and language differences, lack of understanding of local policies, and lack of physical proximity are examples of issues which increase this complexity.

Globalization and IT are mutually reinforcing drivers for change. The role of IT can enhance control, standardization and coordination, which are necessary to control worldwide operations and get access to new global markets.

IT can be aligned and managed differently in each global business model developed by Bartlett and Ghoshal [4]. Following a multinational strategy companies have been investing in several foreign markets from their own national platform. The focus is on local responsiveness, local requirements, and independent global IT operation, where subsidiaries pursue independent IT systems initiatives, and common systems are the exception. A global strategy involves integration of different functions of a firm in different locations aided by uniformity and standardization of work practices. The pattern is head quarters' driving power for common global IT-solutions, implementing corporate-wide IT systems on subsidiaries. Competition pressure and the opportunity to harvest worldwide economics of scale force the firm into a global system solution. A global IT approach driven from headquarters often runs into problems if the company does not have a strong global business need. The most common approach to overcome problems is to transform the home-office or 'best-of-firms' application into a global system, which is not always the best solution for the subsidiaries. In an international strategy, the company has established strong links between home office and foreign subsidiaries based on cooperation and mutual assistance rather than management authorization. The transnational strategy is a further development of the ideas from the global strategy building on common global IT-solutions. However, the integration across sites is tighter through globally integrated applications. The transnational model is related to a glocal mentality; the model tries to combine the need for integration and control on one hand, and flexibility and sensitivity towards local needs, on the other.

Technological development is a crucial part of modernization, and the development of ICT is a crucial part of globalization. Specifically, the role of IT can be explained by the way it supports and enables time-space distances. IT enables integrated production processes that are distributed more or less globally. Control of global logistics processes such as global just-in-time (JIT) is a typical example. IT enables organizations to be distributed globally while at the same time being tied together into one organization and business processes are coordinated globally by IT. A typical example of modern IT-based control technology would be a shared SAP installation in a global corporation [19]. IT systems support flexible organizational forms, like various loosely organized networks (e.g. virtual teams, 'communities of practice') and market transactions, rather than just the flow of control information in hierarchies. This means that we could see IT, to some extent, as a communication technology rather than a

control technology [19]. But it is an illusion to believe that IT systems in general are flexible. Changing large software systems from one working and useful solution to a different one is an intricate operation. The difficulties will increase as the complexity of the software enlarges. However, some systems might be more flexible than others, at least in the ways they can be used. E-mail systems are examples of such systems because they can support almost any kind of collaborative process. E-mail is flexible because the information processed, transferred and shared, is not required to be formalized. However, Giddens' perspective is more critical to the flexibilities of technologies. The technology is controlling the users and the designers and generates 'needs' and solutions to 'problems' people never knew they had.

3. KNOWLEDGE AND KNOWLEDGE PROCESSES

Knowledge differs from information in that it resides in people and it is always personal. 'To know' means not only to understand or believe, but also to use or apply one's knowledge. Organizations' knowledge building and development depend on people's interactions like the culture of communication and collaboration [32].

Blackler [8] categorizes knowledge into five types; embrained, embodied, encultured, embedded and encoded. Embrained knowledge refers to individual conceptual skills or cognitive abilities. Embodied knowledge is the ability to carry out particular actions with the body. Encultured knowledge refers to the process of achieving shared understanding in groups, organizations and societies. Embedded knowledge is a second category of shared knowledge that is reflected in routines. Encoded knowledge refers to the explicit knowledge represented in the written language like books and digital information from databases and web sites.

In social theory of knowledge, organizations can be viewed as social collectives and 'knowledge systems' where four sets of socially enacted knowledge processes are emphasized; *creation* (or construction), *storage / retrieval*, *transfer* and *application* [23]. Organizations looked upon as knowledge systems represent the cognitive and social nature of organizational knowledge and its embodiment in the individual's cognition and practices as well as the collective practices and culture [1]. When we look at the nature of knowledge, many researchers have developed classifications of knowledge to examine the various strategies, routines, and techniques, through which different types of knowledge are created, codified, converted, transferred and exchanged. Tsoukas [40] characterizes this as a taxonomic perspective. The spiral of organizational knowledge creation is an example of a taxonomic view of knowledge; the dynamic model of knowledge creation assumes that human knowledge is created and expanded through social interaction between tacit and explicit knowledge, (building on Polanyi [34]), and define this as a process that organizationally amplifies the knowledge created by individuals and crystallizes it as part of the knowledge system of an organization [31]. Some researchers have been critical to a purely taxonomic perspective, because it treats knowledge as a set of discrete elements. An integrated perspective consider tacit and explicit knowledge as mutually constituted; total separation is impossible, since tacit knowledge is a necessary component of all knowledge [40]. Ryle [38] argues that 'knowing how' is different from 'knowing what'. This view of knowledge is relevant to

'communities of practice' since know-how is a particular ability to put knows-what in practice [11]. Orlikowski [33] emphasizes that it is a mutual constitution between knowing and practice, and tacit knowledge is a form of knowing, and thus inseparable from action. Orlikowski makes a distinction between 'knowledge' (a noun connoting things, elements, facts, processes) and 'knowing' (a verb connoting action, doing, practice) important in her argument supporting Lave [28] who gives 'knowledge' a characteristic as a process of 'knowing'.

4. GLOBAL COLLABORATION

Collaborative work and how it can be supported by ICT, has been of increasing interest due to focus on knowledge generation, sharing and transfer in organizations. Increasing trends towards virtual working and collaboration at a distance have caused implementation of groupware technologies (e.g. Lotus Notes) by a wide variety of organizations, including many transnational corporations operating worldwide [41].

Computer Supported Cooperative Work (CSCW) involves information technology supporting communication and collaboration between people. Increasingly turbulent environments in which business operates have lead to the need for better ways of organizing and coordinating work activities, with more ad hoc project groups and the need for flexible communication structures [3]. Organizational requirements are demanding better integration, updated information and easy access to the information sources independent of time and place. Groupware technologies seem to offer a high potential value for knowledge sharing in the increasingly virtual forms of co-working in a global context. Castells' [12] argument is that IT supports the pervasive expansion of networking throughout the social structure, and that CSCW-solutions provide a good illustration of this, with the promise of standardized approaches to knowledge sharing in organizations such as the transnational corporations.

However, several case studies caution against this standardization hypothesis [41]. Through a literature review of different case studies regarding the extensive spread of groupware, Walsham [41] analyses the links between globalization processes and groupware technologies and the effectiveness of these CSCW-solutions in supporting collaboration and knowledge sharing. The CSCW-solutions are supposed to support inter-functional knowledge sharing, collaboration between companies in a group, and networking between independent companies. Research findings indicated a great variance in the reported success from applying these technologies. This supports Ciborra's [13] conclusions that positive outcome from groupware applications depends strongly on the match between the plasticity of the technology and the practices of the actors in a specific context. Different motives from the organizations lead to different levels of commitment to apply the collaboration technologies.

Munkvold's [30] findings from Kværner international engineering group indicate the challenges related to developing a common culture in a global company. Language barriers and different decision-making approaches in different countries within the group made it difficult, or almost impossible to create a feeling of local community among people who worked across big distances, despite their access to advanced communication technologies.

Rolland and Monteiro [37] argue that CSCW-solutions looked upon as a universal solution, supporting global 'anytime,

anywhere dimensions' is a biased view. CSCW-solutions seem to support work in local contexts because adoption patterns and fitness between the organization and technology are related to local conditions. The formative context within which the groupware technology is being utilized is therefore crucial to the collaborative processes enabled by the technology. Networks of independent organizations can be thought of as difficult contexts to enable effective collaboration [41].

However, assuming a positive formative context, sensitivity to local community and situated work practices, together with management support in the implementation process of groupware technology, might successfully promote collaboration [41].

4.1 Challenges of Knowledge Transfer in a Global Context

The process of knowledge transfer can occur at different levels; between individuals, from individuals to explicit sources, from individuals to groups, between groups, and from the group to the organization [1]. Communication processes and information flows drive the knowledge transfer in organizations, and knowledge transfer channels can activate informal or formal, personal (context-specific transfer) and impersonal (e.g. transfer through knowledge repositories) mechanisms [22].

The complexity of the processes of knowledge generation, sharing and transfer takes on a further dimension when working in global contexts and different cultures, i.e. Walsham [41]. In the following, I point to some potential explanations why the global dimension makes the transfer of knowledge more complicated.

The concept of knowledge itself may be perceived differently in different cultural environments, and the attitude towards knowledge sharing and group interactions may vary. Tacit knowledge may be difficult or impossible to capture, and thus to encode and disseminate.

Obviously the process of knowledge transfer itself is not a straight forward process. Explicit knowledge can be embedded in procedures, documents and databases and be transferred with reasonable accuracy. But the absence of formal coding of knowledge could affect the accuracy of the knowledge content; learning problems can lead to filtering of knowledge due to the recipient's ability of processing the knowledge, interpreting the knowledge from their own frame of reference [14]. ICT support global collaboration and virtual transfer of knowledge, and thus contribute to make knowledge work easier. However computer systems offer limited capabilities for supporting knowledge transfer between different locations. Cross-cultural work involves the interaction of people whose tacit knowledge has been developed in different ways, and who have learnt different approaches to sense-reading and sense-giving [42]. These cultural differences must be taken seriously into account when knowledge is transferred between different sites.

One way to consider cultural differences is to choose a global strategy where the international company acknowledges that each of the geographical sites in the organization has its own, unique business tradition and local culture. In this concern I emphasize the 'glocal mentality' representing the global-local link focusing on local differences and cultures in an international company, rather than optimized cost reduction through standardization and homogenization. Taking on a 'glocal' mentality perspective in

terms of interpretation and utilization of knowledge (e.g. codified knowledge) transmitted from a different context; requires the knowledge receivers to consider the local conditions from where the knowledge originates. To avoid misinterpretations, the employees should thus contact the knowledge bearers from the transmitting location, to clarify any uncertainties or perceived gaps in the knowledge received.

Tacit knowledge transfer generally requires extensive personal contact. Transferring knowledge through personal conversations is important in a company to solve business problems and share ideas between individuals. In global organizations *virtual* transfer of knowledge is an opportunity to take care of this process and make it continuous and not limited to occasional face-to-face meetings. The infrastructure of tacit knowledge transfer could be supported by information technology, but should not be limited to that. Virtually transferring knowledge which is strongly context-specific could be a problem, the knowledge could lose its real meaning when it is not related to its context of origin. Orlikowski [33] also call attention to the importance of context. During her study of a globally dispersed, multinational organization she did notice that the generation of best practices which should be propagated through dispersed operations was problematic. Her view of knowing as enacted in practice, does not view competence as fixed and static objects which could be transferred to the entire organization as they were. Competence generation should be seen as a process of developing people's capacity to enact 'useful practices', where usefulness according to Orlikowski is seen as a necessary contextual and provisional aspect of situated organizational activity.

Culture-related determinants like values, norms and behaviors in each setting of an international organization are essential to the efficiency of the knowledge transfer process in a global context. Appropriation of information systems into work practice to support knowledge transfer in different contexts of a global organizational setting is challenging, and consideration of the additional complexity of norms and values of a non-Western culture in these countries must not be undervalued [41].

ICT can increase knowledge transfer by extending the individual's reach beyond the formal communication lines. Access to knowledge sources is often limited to the co-workers, but by expanding the individual's network to more extended, although perhaps weaker, connections is central to the knowledge diffusion process because such networks expose individuals to new ideas [36]. Computer networks, electronic bulletin boards, and discussions groups create a forum that facilitates contact between the person seeking knowledge and those who may have access to specific knowledge.

4.2 Network of communities

One way to stimulate the knowledge transfer process, which is important for creation of new knowledge, is to view knowledge-based organizations as a network of multiple communities with specialist expertise, denoted as *communities of knowing* [9], *communities of practice* [28], [43], *communities of practitioners* [8], and *microcommunities of knowledge* [26]. Common for these communities is that they consist of members who share information, insight, experience and tools about an area of common interest. These communities have more potential to evolve over time rather than being project or deadline driven. For

new tacit knowledge to emerge through socialization the group must be small, i.e. five to seven people [26]. To enable a context for creation of knowledge, or a shared space for network interactions, Krogh et al., [26] argue that this context is not confined to a physical space like face-to-face meetings, but also include virtual and mental spaces. In the rest of this paper I use 'communities of knowing' to conceptualize communities in international knowledge-intensive organizations like Ericsson (see next section). 'Communities of knowing' consist of knowledge experts with special skills in certain topics. The multiple 'communities of knowing' in knowledge-intensive firms overlap in complex and shifting ways, and there is often a rich structural hierarchy of 'communities of knowing' within the firm, and between the firm and its environment [9]. Divisions, functional areas, product lines, professional specialties, project teams, issue-based communities, are all possible sites for 'communities of knowing' that interweave and interact with each other across various levels of the organization. Individuals will find themselves as members of several 'communities of knowing' operating within a firm and its environment. The transfer of knowledge might be less complicated within and among communities with similar practices, but rather more challenging across different communities with distinct interests. According to Boland and Tenkasi [9], it is through dynamic interactions between such communities that new configurations of knowledge really emerge. Recognition of this complication of knowledge transfer between distinct communities has led to different proposals for facilitating knowledge sharing across communities, such as developing boundary practices [43], and participating in cross-community communication forums [9].

5. KNOWLEDGE MANAGEMENT INITIATIVES IN ERICSSON

This section builds upon a literature review of former research studies in the multinational corporation of Ericsson, and a document analysis performed in one of the departments of the company. The main source for the document analysis was material accessed from the Ericsson intranet, including strategy reports, project documents, newsletters, workshop reports, product information, implementation plans, and other internal presentation material. This provided important contextual information on the company's HR policies and knowledge management strategies like knowledge networking and 'communities of knowing'. The concept of 'communities of knowing' is here interpreted as a conceptual metaphor symbolizing that each community consists of members with highly specialized knowledge. Ericsson, as a knowledge-intensive company, has to rely on multiple specialties and knowledge disciplines to achieve their objectives.

The organizational structure of Ericsson is based on decentralized units where autonomy and independence are strongly established in the culture of the company. This has brought along and ensured local innovation patterns and emergence of local knowledge projects with little influence and monitoring from the central top management. Knowledge initiatives have grown laterally in the organization, and one consequence of this is a growth of several parallel and competing knowledge management solutions. Despite of the contemporary growth and evolution of Internet and communication technologies, the company has few centralized and general knowledge management solutions. One explanation could be the decentralized and networked structure of the

organization, consisting of distributed technological capabilities which again may simply not lend to general solutions [20], [21]. This could be an example of the intension to care for the local flexibility, protecting the vulnerable innovation patterns by using a global 'strategy', conscious or not. On the other hand, increasing pressure regarding efficiency and effectiveness requires a need for increased globalization in business processes, and enhanced culture and knowledge sharing which could be a contrast to this traditionally decentralized organization with independent units (see Baladi, [2]). Globalization issues and communication technology will both influence the organizational structure in a geographically widespread organization. To increase efficiency depends on the organizational capability to handle cooperation across different geographical departments with dissimilar cultures and business traditions. Increasing globalization could bring along an overweight of top-down decisions due to the requirements of standardization and homogenization in the company. This could again create difficulties because of the decentralized organizational structure in Ericsson which traditionally is based on independence, autonomy and decentralized management.

5.1 Knowledge management philosophy at Ericsson

The notion of 'knowledge management' is replaced by 'knowledge networking' in Ericsson, reflecting a knowledge culture in the organization based on networking. Knowledge networking is characterized as a 'philosophy' in Ericsson which is supposed to make people share and reuse knowledge and experience and to locate specialists and initiatives in order to improve organizational performance. This network is based on different 'communities of knowing', and involves global collaboration, virtually and in face-to-face meetings, for sharing experiences on a common interest. This cooperation and interaction also involves partners and customers. The culture of the company is based on local innovation, networking and knowledge sharing. One important vision is to contribute to an environment of several networking organizations, where companies cooperate together with partners, suppliers along the whole value chain to distribute ideas and risks. The transfer of knowledge to members of the network and to share information, ideas and experiences is important. The core of the network is the interpersonal connections and the common goal.

However, cooperation across organizations represents a knowledge /competence shift in the company. The aim is to create a global competence and knowledge community which could support the employees in their understanding of the new business logic and to transfer knowledge and competence to external partners outside of the company's traditional technology development culture. This could be challenging because it will require a change in attitude among the employees since they need to expand their internal teams to include external personnel. The idea is rather ambitious, and in one way it represents a centralized control of the communities which in principle should be self-organizing and emerge naturally. The main principle of these groups is mainly based on cooperation between employees on the same organizational level, which means horizontal diffusion.

5.2 Knowledge networking in practice

Ericsson's objective is to put the knowledge networking strategy into business practice, stimulating an innovative climate and supporting the tradition for transfer of knowledge. The knowledge networking initiatives comprise a variety of existing knowledge projects which is driven by local business needs. These projects are based on a combination of two types of knowledge implementing initiatives [21]. The first one emphasizes information sharing and community building and involves use of web-based and intranet-oriented tools. The second one is based on human interaction where individual competence development is the major concern, connecting people in face-to-face situations.

Some knowledge projects are centralized, like the top management decision of implementing a global IT-based competence system which is a shared SAP-installation across sites. This corporate initiative is trying to standardize the competence management process across all local units in the organization.

The corporate mission, which is described in internal documents, is to create and facilitate an Ericsson corporate network like an "umbrella" for local knowledge projects. It is important here that projects are supported from both local- and top-management. However, it is crucial for the development of the network of communities, that the influence from managers outside the community is limited.

In the community building process in the company, five critical success factors are mentioned:

1. to understand the new organizational form and the dynamics of community processes and to intentionally develop communities
2. to focus on business topics, choose well-respected coordinators, allow time to participate, build the community on existing structure, culture and core values, balance the management attention
3. to involve thought leaders, build personal relationships, develop an active passionate core group, create forums for thinking together and create systematic ways of sharing knowledge
4. to make it easy to use the technical tools available, and enable easy access to shared knowledge and practices
5. to manage to create real dialogue about cutting edge issues, to build trust and enable solving of problems together

The following section presents some examples of communities of knowing in Ericsson.

5.2.1 'Communities of Knowing' in Ericsson

Internal documents from Ericsson describe 12 major global networks and communities where approximately 10 000 members are registered including employees, customers and partners.

Some of the established 'communities of knowing' in Ericsson and their objectives and IT-support respectively, are presented in table 1. These knowledge networks – or 'communities of knowing' are using a variety of IT-based and manual tools to support their work in the communities. Collaboration technologies like Lotus Notes, e-mail, discussion groups, local intranet portals,

virtual project room, bulletin boards, and knowledge and experiences databases are typical tools which enable virtual collaboration. As a member of a network, the employees will have access to information during these mentioned opportunities which is relevant for their interest and professions.

Knowledge sharing seminars, training in specific topics, brainstorming about innovative findings (both virtually and in face-to-face meetings), network meetings to organize core teams and reference groups are examples of arrangements where the members are meeting physically.

Ericsson's strategy is to enable an infrastructure which makes knowledge visible. It is important to promote knowledge sharing from existing projects to cope with the knowledge challenges in the future. Open learning transfer, with universities, partners and customers, is one knowledge project initiative.

5.2.2 Reflecting on 'Communities of Knowing' in Ericsson

The 'communities of knowing' seem to be more or less controlled by management, which is somewhat paradoxical given that the most important characteristics of such communities are stated to be that they should emerge naturally and that they should evade the control mechanisms of the formal organizations [14]. However, it can be argued that strong leadership is necessary to make the knowledge networking initiatives work. Earlier studies in the company showed that management played different roles from being a driving part to serving more as a support function. It was clear that organizational members often needed to be pushed or strongly attracted to use this kind of initiatives [29].

Most of the established communities have a relatively large number of members, which represents a problem for developing personal relationships and trust building which is important for sharing knowledge. As emphasized by Krogh et al. [26] micro-communities seem to have the best potential for developing new knowledge. It is a challenge for the communities in Ericsson to establish small communities inside the larger groups. Several communities were based on inter-organizational collaboration across geographical borders with external members (e.g. customers, partners). As discussed in the theoretical part of this paper, networks across organizations can be difficult contexts for enabling effective collaboration [41], and to create a feeling of local community among people who are working across big distances could be difficult [30]. However, the communities in Ericsson are using a combination of virtual and physical meetings which increases the chances of building trust and personal relationship.

The concept of knowledge itself may be perceived differently in different cultural environments, and also the attitude towards knowledge sharing and group interactions may vary inside one community. Communities which include both inter-organizational as well as intra-organizational members from different geographical location could possible have different attitudes to sharing of knowledge [41]. As discussed earlier transfer of knowledge which is strongly context-specific could be a problem; the knowledge could lose its intended meaning when it is not related to its context of origin [14]. These barriers could limit a successful utilization of the knowledge in Ericsson, and represent challenges for the members and coordinators of the communities.

One challenge for the company will be to break down physical, cultural, organizational, and managerial barriers which could prevent the knowledge transfer process. This is related to the 'glocal' mentality, and emphasizes the importance that the head office is familiar with local conditions, and acknowledges cultural differences and local needs. Ericsson, as a networking organization to some extent follows a glocal policy through their knowledge networking philosophy and modular networks of 'communities of knowing'. The decentralized organizational structure of the company requires distributive management.

However, increasing demands for efficiency and cost reductions in the company may lead to fast organizational changes and top-down decisions which could have negative effects on the employees who are used to an independent way of working. Increased control mechanisms could affect the innovation patterns in the organization and deconstruct the emergence of new creative ideas.

Table 1. Examples of 'communities of knowing' in Ericsson

Community	Type of community	Members	Objectives	IT-support and Content
Vodafone-Ericsson	Inter-organizational includes customers and partners	1000	To work with customers and partners to achieve operational efficiencies, utilize global size and synergies, efficient communication and manage global – local relationship.	Internet portal Project areas, Ericsson area, Vodafone area, bookmarks, global relationship information, meeting data, minutes, news
Ericsson Foresight	Inter-organizational includes universities, experts and institutions	600 core group of 40	Focus on emerging trends in the fields of society, technology and consumers	Mailing lists, Web tools Workshops and seminars
Project Networking	Inter-organizational	3000	To support and develop Project Portfolio Efficiency, mentorship learning for introducing newcomers.	Bulletin boards Mini-networks Virtual project room Toolbox Applications Information sources Newsletters Project managers' experiences
Business Intelligent portal	Intra-organizational	All employees	Provide business information, connecting people, building new networks	Intranet portal Content Management portal products
Experience Engine	Intra-organizational	500, but available for all employees	Connecting experts with employees in work-related difficulties, deliver creative ideas, solve problems, improvements and process reengineering	Helpdesk, call centre
Java Network	Intra-organizational	30	Speed up the use of Java in Ericsson, share best practice, reuse of programming code	Meetings, e-mails, discussion groups

6. IMPLICATIONS

The discussion in this paper has revealed interesting topics regarding the challenges of transferring knowledge in a multinational context. Further investigation of the 'communities of knowing' could give more detailed information about the efficiency of the knowledge transfer process in these groups. By interviewing members from different geographical locations inside the organization and across different organizations, valuable information could be achieved regarding virtual collaboration and use of collaboration technology. Further, to reveal barriers and make an effort for enabling knowledge transfer and knowledge sharing in contexts which are characterized as complex (e.g. inter-organizational) are important.

One challenge is to develop a growing knowledge environment which stimulates knowledge transfer across different 'communities of knowing'. Even in setting where communication appears unproblematic and knowledge homogenous, the networks of individual communities differ. It is through the dynamic interaction between different communities that new configuration of knowledge, innovation and new meanings emerge. However, different disciplines and professional traditions apply unique social and cognitive repertoires which guide distinctive interpretations of the world. To establish a common collective 'language' understood across different disciplines is a challenge, and could obstruct collaboration across communities.

Other barriers like cultural differences, lack of personal relationships, trust building, different interpretation of the transferred knowledge and different attitudes to share knowledge could be investigated more in-depth searching to understand these barriers and suggest actions for improvement. It is also interesting to increase the knowledge of how the globalization processes influence on these communities and if the role of local and top-managers is significant for stimulating successful and efficient knowledge processes in different networks.

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8. REFERENCES

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