

# IT-SUPPORTED COMPETENCE MANAGEMENT: A CASE STUDY AT ERICSSON

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**This article highlights the potential benefits and challenges related to implementation of IT-supported strategic competence management as part of a human resource management system. A case study of the implementation of a competence management system in the global telecommunications company Ericsson reveals several implementation challenges, and also shows how the system supports Ericsson's knowledge networking strategy, through locating experts and stimulating emerging "communities of knowing."**

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**O**VER THE PAST TWO DECADES, THE ROLE of human resource management (HRM) in organizations has shifted from measuring individual productivity among the employees toward strategic management of the human resources, focusing on competence development, human learning management, knowledge management, and learning organizations (Berardine, 1997; Hagan, 1996; Hendrickson, 2003).

Competence management (CM) involves the planning, implementation, and evaluation of initiatives to ensure sufficient competencies of the employees and the company to reach the objectives of the organization (Nordhaug, 1993). Competence management constitutes an important element in knowledge management (KM), which focuses on systematic and innovative methods, practices, and tools for managing the generation, acquisition, exchange, protection, distribution, and utilization of knowledge, intellectual capital, and intangible assets (Montana, 2000). Managing knowledge and competencies is increasingly important for innovative organizations, and

may be critical to uphold a strategic advantage (Davenport and Prusak, 1998). Competitive advantage also results from effective integration of the specialized knowledge of employees (Grant, 1996). Increasing globalization implies tougher competition and more dynamic markets, but also offers the possibility of increasing the capabilities of an organization through utilizing competence from different geographical locations in the global workforce (Borghoff and Pareschi, 1998). Strategic competence management should thus be a high priority among managers (Bergenhengouwen et al., 1996; Niederman, 1999; Pickett, 1998).

Information technology plays a fundamental role in supporting knowledge work in organizations. The term "knowledge management systems" (KMS) (Alavi and Leidner, 2001; Bowman, 2002) refers to a broad range of information systems supporting the creation, transfer, and application of individual and organizational knowledge. This article focuses on *competence systems*, which are a particular type of KMS providing an integrated picture of the organization's total competence resources that

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can be mapped against competence requirements and used as a basis for planning and implementing competence development actions. Competence systems may represent an important resource for the knowledge management processes of an organization, by serving as the "knowledge yellow pages" of an organization in terms of "who knows what," identifying the knowledge bearers (Alavi and Leidner, 2001; Borghoff and Pareschi, 1998; Marchand, 1998; Schüppel et al., 1998), and tracking different competence development initiatives (Lindgren et al., 2003).

IT-supported competence systems vary in scale, from single-user PC-based systems, to submodules for competence planning and management integrated in complete solutions for HRM that also support payroll, recruitment, and other basic HRM functions. The latter type of integrated HRM solution is also offered as part of enterprise resource planning (ERP) systems, again integrating HRM functions with other business functions and processes. For example, major ERP systems such as SAP and PeopleSoft offer HRM modules, which comprise modules for competence management (PeopleSoft, 2004; SAP, 2004).

An increasing number of companies are becoming aware of the strategic potential of implementing competence systems. However, this is a comprehensive process, and the resources required to identify, register, and maintain the required competence data have made several companies realize that their initial ambitions regarding the scope of information to be stored in these systems have been too high. Despite the increasing interest and strategic emphasis on this type of HRM system (Beradine, 1997; Kallis, 1999; Totty, 2001), there are as yet few published examples from the field on organizational experiences related to the implementation and use of competence systems.

This article discusses the potential benefits derived from implementing IT-supported competence management, based on a case study in the telecommunications company Ericsson. The company is in the process of implementing a global competence management system that will replace the locally developed solutions and will support global competence sharing and "communities of knowing" throughout the company. The integrated focus on competence management and knowledge networking in Ericsson serves to illustrate the potential role of competence management in knowledge management. Finally, the case study also provides insight into potential challenges related

to the implementation of this type of global competence management system. As a backdrop to the Ericsson case, we first highlight the key principles and elements of IT-supported competence management.

## OVERVIEW OF IT-SUPPORTED COMPETENCE MANAGEMENT

The HRM function in organizations has gained increasing strategic emphasis, and the importance of aligning HRM strategy and business strategy is well acknowledged (Agarwal and Ferratt, 1999; Lengnick-Hall and Lengnick-Hall, 1988; Ulrich and Lake, 1990). Effective HRM is vital for being able to meet market demands with well-qualified employees at all times. Competence management is an important part of HRM practice, where the aim is to generate competencies that provide the organization with the right mix of talent to meet existing and future needs (Nordhaug, 1993; Ulrich and Lake, 1990). Further, the core competencies of the organization should provide guidelines for the competence management process to increase sustainable competitiveness (Bergenhengouwen et al., 1996; Hagan, 1996). In a competence-based organization, the description, stimulation, and development of the individual competencies of the employees are highlighted, rather than focusing on job descriptions and duties (Lawler, 1993).

Organizations wanting to establish long-term employment need to focus on career development and long-term goals for their employees. This requires an overview of the competence of each employee, an area well suited for IT support. A competence system typically includes the following functionality:

- Registering competence data (formal education, skills, experiences, etc.)
- Mapping of present and future target competence levels for business units and employees
- Analyzing competence gaps at various organizational levels
- Recording the outcome of personnel discussions
- Suggesting, storing, and tracking competence development actions
- Serving as a repository for CVs (curriculum vitae), training, and course offerings

These systems also offer various search capabilities, such as for conducting organization-wide competence searches related to global staffing

**C**ompetence systems give indispensable information about where the knowledge resides.

(Wiechmann et al., 2003; Ryan et al., 2003), as well as extensive report generating options.

With the "E-wave" also reaching the area of HRM, the terms E-HR or E-HRM are increasingly being used when referring to the next development stage in IT-based HRM (Karakanian, 2000; Lengnick-Hall and Moritz, 2003; Ruël and Bondarouk, 2004). This involves the use of Web technologies for redistributing HR activities from the HR department to the entire organization, and integrating these with other corporate processes such as finance, supply-chain management, and customer service (Karakanian, 2000). Several point to how e-HRM may involve different approaches, representing steps in a development process (Lengnick-Hall and Moritz, 2003; Ruël and Bondarouk, 2004). The first step is focusing on operational HRM, such as publishing information, administering payroll, etc. The second, higher-level form involves automation of basic processes such as recruiting, training, and performance management. The third stage is of a more transformational nature, involving HR activities with a strategic character. Typically, activities related to strategic competence management and strategic knowledge management fall into this third category. Other reports on E-HRM in large companies such as IBM, Ford, and Dow Chemicals mostly focus on the operational stage, emphasizing cost reduction and efficiency gains, rather than strategic competence management (Ruël and Bondarouk, 2004).

A recent development in the functionality of HRM systems has been the transition from client/server-based systems to Web-based access. This has resulted in new options for "self-service" routines, where managers and employees themselves can be responsible for registering and maintaining their CVs, as well as filing and tracking time/attendance, leave permits, and payroll information online (Hendrickson, 2003). This functionality increases the perceived usefulness of the system, and relieves the HRM staff of some of the more routine everyday jobs that instead can be replaced by more strategic tasks (Berardine, 1997; Totty, 2001).

Global companies may experience problems with locating their most talented employees, and global competence systems can be used to provide a detailed overview of the employees in the entire organization. This type of system also enables common definitions and standardization of data across the company, thus contributing to the streamlining of the organizations' HRM processes (Greengard, 1995). However, as this form of standardization

can conflict with the local practices and culture of the different offices, such as those related to defining and evaluating the needed competencies, resistance to adopting these standards in some units is not uncommon (Greengard, 1995; Hellström et al., 2000; Hellström et al., 2001; Rolland and Monteiro, 2002; Ruël and Bondarouk, 2004).

IT-supported competence systems may also contribute to the knowledge management processes in an organization, through supporting identification and distribution of knowledge and competence (Davenport and Prusak, 1998). Marchand (1998) focuses on how knowledge-based organizations use meta-information to develop so-called knowledge maps, providing information on who possesses what knowledge and competence in the organization. In this sense, competence systems give indispensable information about where the knowledge resides rather than providing access to the knowledge itself, thus supporting the network model of KMS (Alavi, 2000). This may form the basis for developing "communities of knowing," defined as a network of specialists sharing knowledge, experience, and tools within a common area of interest (Boland and Tenkasi, 1995). It is also argued that competence systems may affect the socialization process among employees, by providing awareness of communities of individuals with similar interests (Lindgren and Stenmark, 2002).

#### **CASE STUDY: COMPETENCE MANAGEMENT AT ERICSSON**

In this section, the principles and possibilities for IT-supported competence management are illustrated through a case study of an ongoing implementation project in the telecommunications company Ericsson. Ericsson is a global company, operating in more than 140 countries with approximately 52,000 employees (Ericsson, 2003).

Our data collection mainly took place in the Norwegian branch of Ericsson, comprising 700 employees at the time of study. Two thirds of the Norwegian employees were working on research and development, mainly in mobile communication, mobile commerce, and mobile phones. In 2002, Ericsson Norway started implementing the SAP Competence Planning module. We collected data during a five-month period, which involved semi-structured interviews and document analysis. The interviewees included the implementation project manager,

**TABLE 1** Details on Research Methods

Nine on-site interviews were conducted over a five-month period, using semi-structured interview methods. The interviews lasted from one to two hours, and were taped and transcribed. The interview transcripts were then e-mailed to the informants for verification and adjustments. The interview questions focused on Ericsson's competence management practices, expected benefits from the new competence system under implementation, and its significance for the company's knowledge management strategy. Challenges experienced from the early stages of the implementation were also discussed. To complement the implementation experiences, we also conducted a telephone interview with the competence manager in Ericsson Croatia, who was a key person in one of the first pilot implementations of the competence management system in Ericsson.

The main source for the document analysis involved material accessed from the Ericsson intranet, including strategy reports, project documents, newsletters, workshop reports, product information, implementation plans, and other internal presentation material.

as well as key users such as competence managers, the HR manager, and the IT/IS manager. The document analysis involved material accessed from the Ericsson intranet, which provided contextual information on the company's HR policies, knowledge management strategies, training and development programs, as well as the implementation project. More details on the research methods are provided in Table 1.

The following sections present Ericsson's competence management process and current initiatives for implementing related IT support. The relationship between competence management and knowledge management is discussed, and potential benefits from the competence management system are highlighted.

**The Competence Management Process in Ericsson**

The Competence Management (CM) process in Ericsson is established as part of the organization's strategic process. In Ericsson, CM is defined as keeping informed on the existing competence situation; defining future competence needs related to strategy plans, visions, goals, and scenarios; and continuously working on filling the competence gap. In addition, CM encourages continuous competence development. The CM process in Ericsson is divided into three stages:

□ Analysis:

- Identifying the organization's strategic (long-term), critical (short-term), and obsolete/declining ("phasing out areas") competence requirements by analyzing future market and technology demands, based on the Ericsson Strategic Plan.

- Assessing the present competence situation (i.e., the organizational and individual competence levels).
- Personal development discussions used for individual assessments, where managers and employees come to an agreement about the present situation.
- Defining the *competence gap* between the competence requirements and the present competence situation.

□ Planning:

- Preparing a competence development plan for the organization as well as each individual, based on the competence gap. The development plan describes the competence requirements, the present level, the competence gap, and the actions to be taken to bridge this gap. The plans are updated and reviewed regularly.

□ Implementation:

- Establishing a more detailed plan for competence development, concretizing different action programs in terms of theoretical courses, further education, practical learning, job rotation, and project participation in different locations. Outcome evaluation is important in this stage, implementing follow-up and corrective actions where needed.

Operating in a dynamic market, Ericsson constantly faces new competence requirements. People and units move frequently and projects are often run across organizational as well as national boundaries. This creates an urgent need for sharing competence and communicating on competence issues in a structured and flexible way, and has resulted in the development of a common competence model. This model provides a structure and terminology that support the communication on competence issues throughout the organization. The





**T**he  
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**competence**  
**areas.**

model includes dimensions of professional, business, and human competencies as the main categories. Examples of professional competencies include technical expertise related to certain operations or tasks, financial expertise, or quality management. Typical business competencies involve understanding the core businesses of Ericsson, knowledge about the customers, and mastering the business language. For human competencies, the employees' interaction and communication abilities are important, emphasizing their attitudes toward teamwork, knowledge sharing, and cultural awareness. Further classification of these categories defines the competence areas and competence elements in detail. A common scale is applied for assessing competence, comprising five competence levels from trainee to expert. When assessing the competence level for each relevant competence, a competence chart can be prepared.

The model supports the aim of getting a clear picture of relevant competence requirements, and provides a flexible framework for competence assessment on both the individual and organizational level. On an organizational level, the model can be used to describe the strategic and critical competencies, the present situation, and the competence gap for the entire organization.

#### **The Global Competence Planning System**

Although the CM process is well established in the company, the lack of a common IT system for supporting CM on a global basis has limited the efficiency and speed of this process. In line with the decentralized nature of the Ericsson group, the different Ericsson companies had developed their own local solutions for IT-based competence management (Hellström et al., 2000). For example, Ericsson Norway had been using an Excel-based application in combination with manual, paper-based solutions for supporting its local CM process. Several different Web-based applications were also in use in the different business units for managing competence and personnel. An example of this is the Talent Tool, developed by Ericsson Business Consulting (Baladi, 1999). Intended as a common application for Ericsson, this supported CM both at the individual and organizational level. However, due to the lack of a unified strategy mandating use of a common support tool in the CM process, this application had only been used in some countries.

To improve this situation, Ericsson has selected the ERP system SAP R/3 as a global solution integrating all major business functions, including the HRM area. The intention is to standardize processes and supporting applications in the entire organization. Implementation of SAP HRMS (Human Resource Management System) as Ericsson's global HRM system was initiated in 2002, with the objective of discontinuing further use of all local competence management systems. This HRM system includes a Competence Planning (CP) module that has been adapted to the Ericsson competence management process, representing a further development of the principles in the Talent Tool application (which was later phased out together with the other local competence systems). The CP module is a shared installation on a global basis, supporting the competence management process throughout the company.

#### **Functionality of the CP Module**

The design of the CP module is based on the stages in Ericsson's competence management process and the competence model. The Ericsson Strategic Plan provides input to the IT system in terms of strategic and critical competence areas. A global competence catalog constitutes the foundation for the CP module, containing information on business-related, professional, and human competencies. In addition, there exist local competence catalogs, comprising elements that are not part of the global catalog.

The employees' competence level, assessed according to the five-point scale from trainee to expert (O, A, B, C, and D), is stored in the system as a result of the personal development (PD) discussions. These discussions constitute a vital element in the CM process. The preparation for the PD discussions is conducted through the system, with the competence manager and the employee presenting their goals and needs for further development. The system also provides access to historical data from previous PD discussions, making it easy to follow up, evaluate, and improve competence development actions when needed. The outcome of the PD discussion is an individual competence profile, comprising the existing competence level and future competence goals, and a competence map showing the competence gap and development need for each employee. The competence profiles for all employees are aggregated to an organizational competence profile representing

**TABLE 2** Potential Benefits from Global Competence System

**Organizational benefits:**

- Supporting systematic development of strategic competence
- Identifying competence gaps for each business unit to ensure global competence development in targeted business segments
- Basis for developing individual competence plans supporting the strategic goals
- Supporting talent management (i.e., global search for identifying employees with high levels of expertise) to further develop these
- Supporting location of experts, facilitating exchange of employees, and competence building across locations and units

**Management benefits:**

- Providing detailed overview of organizational competencies, through competence profiles and statistics for employees, positions, and organizational units
- Increasing flexibility, speed, and accuracy, by identifying who knows what on a global basis, and improving effective utilization of the overall human resource potential
- Supporting staffing of project teams with specific competence demands

**Employee benefits:**

- Increasing consciousness and focus on personal competence development — pushing management harder for support and development
- Increasing visibility of know-how and possibility for marketing this in the organization
- Exposing previously hidden/unknown competencies, giving possibilities for new and interesting assignments

the present level of all competence areas in detail, and the competence gap that needs to be filled to achieve the future organizational requirements.

Summing up, the CP module has a wide range of functionality, including among others:

- Organizational analysis of strategic competencies
- Common access to individual data for PD discussions
- Competence gap analysis, and suggestions for development needs and action plans
- Extensive search functionality (e.g., for competencies on certain levels, individuals meeting certain competence requirements, and people currently working in a specific job area)

**Potential Benefits from the Competence System Implementation**

The rationale for Ericsson’s implementation of the new global competence system resides in a comprehensive set of expected benefits for various levels of the organization. These benefits are summarized in Table 2.

**Relationship between Competence Management and Knowledge Management in Ericsson**

As illustrated by the following statement from one of the competence managers, Ericsson sees a clear link between its knowledge

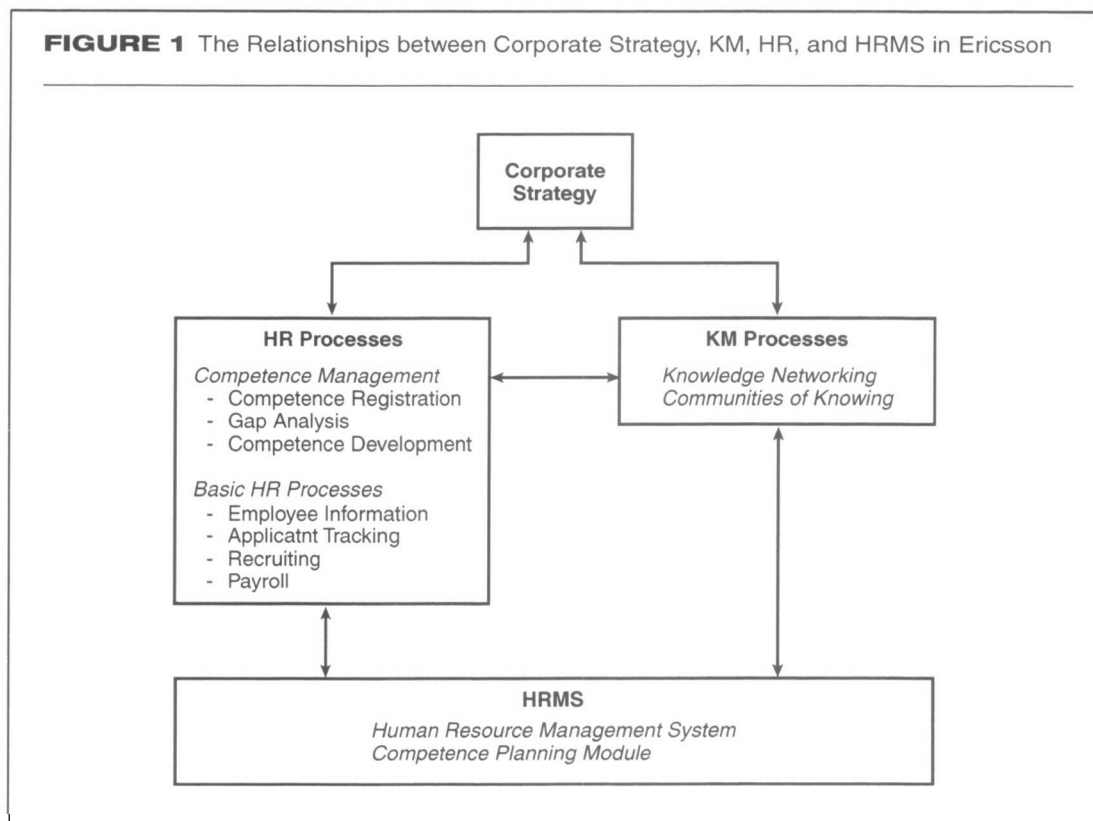
management processes and the new competence system:

“I think CP can play an important role in knowledge management. You can search for persons with certain competencies very easily through that tool. People having the same competencies and interests can be accessed and get together and they can more easily come to some kind of virtual conclusions and discussions.”

— Competence Manager, Ericsson Croatia

Figure 1 illustrates how the competence system supports processes related to both HR and knowledge management in Ericsson, and the need for these processes need to be aligned with corporate strategy.

A key concept in Ericsson’s knowledge management strategy is Knowledge Networking — the company’s philosophy for encouraging employees to share and reuse knowledge and experiences, and establish networks of specialists to improve organizational performance and innovation. These networks consist of different “communities of knowing,” representing Ericsson’s adaptation of the Boland and Tenkasi (1995) term, that involve global collaboration both internally in the company and with customers and business partners. The knowledge networks are based on interpersonal connections, taking place both virtually and face-to-face. The virtual interaction is supported by a

**FIGURE 1** The Relationships between Corporate Strategy, KM, HR, and HRMS in Ericsson

variety of IT-based collaboration technologies (Munkvold, 2003), such as e-mail, audio and video conferencing, local intranet portals, virtual project rooms, bulletin boards and discussion groups, and knowledge and experience databases. For face-to-face interactions, "manual" collaboration techniques and forums in use include knowledge-sharing seminars, training in specific topics, brainstorming, and network meetings to organize core teams and reference groups. Through the common focus on facilitating interpersonal communication, this blend of face-to-face and IT-supported interaction addresses the potential limitation of a "technology-centric" approach to supporting communities of knowing (Walsham, 2001a).

The competence management process is a key activity in the knowledge networks, and the functionality of the CP module contributes to the emergence of new communities of knowing by making employees with similar interests aware of each other. We identified several examples of employees in Ericsson Norway participating in such communities on a regular basis, such as networks of senior engineers, HR managers, and competence managers. Former research in Ericsson had identified several important factors related to the implementation and management of knowledge management

initiatives in the company (Magnusson and Davidsson, 2001). The employees' motivation for searching and sharing knowledge, the perception of the value of knowledge, and the capacity to absorb new knowledge were identified as critical issues in the process of knowledge exchange. The role of management in this process was identified as to ensure alignment of the communities' efforts with the goals and strategies of the organization, and stimulate the development of the communities. This requires a difficult balancing of control and facilitation, because the basic philosophy is that these communities should emerge naturally and not be subject to the formal control mechanisms of the organization.

#### IMPLEMENTATION CHALLENGES

This section discusses some potential challenges to the implementation of a global competence management system, based on findings from the Ericsson case and previous research. These challenges are broadly categorized into three major issues: (1) designing a competence framework, (2) tensions between global standardization and local practices, and (3) gaining commitment from the employees.

**Y**et, defining a global competence catalog proved to be a challenging task.

### Designing a Competence Framework

A competence management framework in terms of a well-defined competence management process is necessary to achieve effective utilization of the IT-based tool (Houtzagers, 1999; Pickett, 1998). This framework also needs to include a competence catalog, specifying the different skills and competencies needed throughout the organization. These entities form the base for specifying job profiles. Organizations often tend to lose scope in the definition of these entities, resulting in a level of detail that finally could "choke" the system (Houtzagers, 1999; Pickett, 1998). Defining too many competence elements results in an "over-specified" competence catalog, and the process for mapping, registering, and maintaining this becomes too resource-demanding so that the system risks not being used. A focus on the competence areas of most critical importance for the organization's performance should guide the identification of central competence elements (Houtzagers, 1999). In Ericsson, the existing competence model and process provided a good foundation for implementing the system, as the employees were familiar with these and the related terminology. Yet, defining a global competence catalog proved to be a challenging task.

### Tensions between Global Standardization and Local Practices

Several informants in Ericsson raised concern about the new global, standardized competence management process not being able to support local needs. They pointed to the risk that the common global competence catalog might be too general, losing the necessary local detail. In Ericsson Norway, the existing competence tool now being phased out offered the possibility to define needed competence elements locally. The new, global HRMS module controls the local competence catalog and its development, which was not considered favorable:

"We do not want to be managed in our choice of competence elements. We would want to select those elements that we need. We would rather not be governed in the local catalog."

— Line Manager,  
Ericsson Norway

However, one informant also pointed to the need for taking on a more holistic perspective on the possible global benefits for the company

from a standardized competence management process:

"We are working under the NOBA umbrella [Nordic and Baltic cooperation]. So we have to admit that we are part of a larger unit, and we need to wear a common company hat instead of the preference of isolating from the overall company."

— Competence Manager,  
Ericsson Norway

Another dilemma between local and global practices is related to local creativity versus global dissemination of best practices:

"Spontaneity and creativity could be the losers in some areas by implementing global solutions. However, the 'Best Practice' policy in Ericsson concerns capturing good ideas, which of course may come from other areas in the organization."

— HR Manager, Ericsson Norway

These expressed concerns indicate that global homogeneity and standardized solutions could result in reduced responsiveness to local needs and flexibility. Effects from increased globalization in business processes and application of common information systems are widely discussed in the literature (e.g., Hanseth and Braa, 2000; Rolland and Monteiro, 2002; Walsham, 2001b). By making several business processes global, organizations try to generate benefits from coordination and standardization across geographical boundaries. However, implementing IT to support global processes in general can influence the organizational structure and can be a struggle (Hellström et al., 2000; Hellström et al., 2001). The organizational structure of Ericsson consists of decentralized units where autonomy and independence are strongly established in the culture of the company. This has stimulated local innovation patterns and emergence of local knowledge projects with little influence and monitoring from the central top management in Ericsson. The implementation of a global competence management process thus requires a careful balancing of attention to local culture and traditions of HRM practices in each unit against the need for centralized coordination and standardization. National and cultural differences in labor law and work policies (e.g., regarding compensation, employee selection, or career development) may pose further requirements to the adaptation of



**L**ocal champions may play an instrumental role in fostering commitment among the adopters, and in maintaining a continued focus and interest in competence management in times of high market turbulence.

the global competence management process to local practices.

### Gaining Commitment

Several informants point to the need for changing the attitudes among the employees and management toward increased understanding and focus on competence development, to be able to increase organizational performance through utilization of a global competence system:

"We have a job to do to gain commitment from the employees towards the system. It will require a change in their mindsets: they must take responsibility of their own competence development. We need to motivate them: we want to build individual competence and qualifications to increase their efficiency."

— Line Manager, Ericsson Norway

However, creating behavioral change is a challenging issue (Blumenthal and Haspeslagh 1994). Further, because Ericsson currently is experiencing a severe market decline, the main focus in the company is not on the competence management process:

"Despite the top management and project leaders having motivated the employees to use the CP module, this is not considered business critical. There is a risk of not prioritizing the CP system. There are other tasks that are more important for making money."

— IS Manager, Ericsson Norway

The economic situation of the company has also affected the implementation process of the CP module, leading to some delay in the registration and training activities. Our findings from the early stages in the Ericsson implementation indicate that local champions may play an instrumental role in fostering commitment among the adopters, and in maintaining a continued focus and interest in competence management in times of high market turbulence.

### CONCLUSION

The findings from Ericsson and related discussions have highlighted the potential role of IT-supported competence systems for supporting strategic competence management, and in contributing to knowledge management processes in the form of *knowledge networking* and *communities of knowing*. Compared to manual or

nonconforming local competence management practices, a global standardized competence management process supported by an advanced IT system, such as the CP module currently being implemented in Ericsson, represents a large potential for improving the efficiency and effectiveness of competence management in the organization. Gaining systematic, global access to the company's competence resources may also increase innovativeness and stimulate new learning processes.

However, the study also illustrates how realizing this potential may be a challenging effort, involving specification and design of a competence catalog that includes competence levels that cover both global and local needs, and the redesign of local competence management processes to align with global processes. Centralized, top-down initiatives such as the SAP CP implementation in Ericsson face a difficult challenge in balancing standardization efforts toward allowing sufficient flexibility for stimulating continued local innovation. Gaining acceptance and commitment from employees at various levels for the related organizational changes is of key importance here. Evaluating the long-term impact from IT-supported competence systems on the strategic management of competence and knowledge in organizations is an issue that should be addressed in future research. ▲

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