

Networked economy

Effects on organisational development and the role of education

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Abstract: The knowledge-based, networked economy demands new forms of collaboration between experts and organisations. Different domains of knowledge need to be integrated in order to create a new multidisciplinary approach for managing the challenge which we here call 'e-thinking'. Knowledge-based change is facilitated by the platform of modern ICT (Information and Communications Technology) and demands new and innovative concepts from the domains of e-business, e-work and e-learning. In support of a comprehensive e-thinking evolution at least these three domains of expertise need to be understood. Problems with the implementation of each of those "e-domain" approaches will be discussed and the rationale for integrating them is emphasised. Successful implementation of knowledge-based professional development is argued to be the alignment of organisational objectives, understanding of work and business processes, and knowledge about learning at work.

Key words: e-business, e-learning, e-work, organisational development

INTRODUCTION

Following the hype of the digital economy a large number of “dot-com” and also e-learning companies have suffered a serious downturn. Investors have not been satisfied with the financial results of this industry. At the same time problems with implementation of ICT-based processes in working life are being reported. Critical observers say that the development of our knowledge society has just been the development of technology platforms, without taking account of processes and contents.

One of the problems might be that comprehensive change of organisational activities relies both on organisational learning and appropriate use of ICT. Hence, a combination of technical and social understanding is needed. In the following we evaluate new phenomena in our knowledge society such as e-business, e-work and e-learning and discuss the integration of these domains.

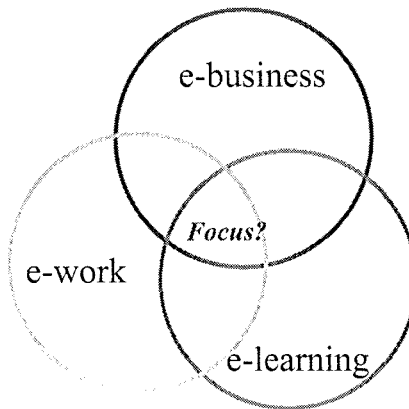


Figure 1. Focus of Knowledge Society development

REALISING INTER-ORGANISATIONAL COMPETITIVE ADVANTAGE

The use of ICT in organisations has emerged as an important managerial issue. In addition to improving cost-effectiveness, it also provides great potential for innovations and organisational change (Ruohonen & Salmela 1999). The e-business imperative is guiding the change process in which organisations must think about operational models, organisational processes and new ways to serve the customers. Functional hierarchies turn into

organised networked structures. Advanced collaboration and outsourcing strategies are gaining importance (Kern & Willcocks 2002). However, collaboration is not just networking of transactions, it also implies sharing of knowledge, uniting and integrating processes, and development of joint performance measures. These structures can be described as “knowledge management (KM) networks” (Ruohonen & Salmela 1999; Warkentin et al. 2001).

Products and services, involving ICT and digital contents, provide opportunities for new innovations, provided that a strong commitment and an ability to network reliably with partner organisations are present. The building of knowledge networks demands new qualities both of organisations and of their managers. Dyer and Singh (1998) have proposed four quality factors which are important for inter-organisational competitive advantage:

1. relation-specific assets, i.e. investment in the specific relationship of partners;
2. knowledge-sharing routines between partners;
3. complementary resources supplementing core competencies of each partner; and
4. effective governance of the relationships

Knowledge creating companies should manage all four qualities, especially so in situations where the company either cooperates within an ICT-based system, or has a constant outsourcing service relationship with a partner company.

Relation-specific assets

Co-operation relationships between organisations are not just formal agreements or just aimed at price control; organisations more and more look for long-term cooperation. For instance, outsourcing of services often is started on the basis of issues as pricing of services, cost control and exit provisions which provide a good start for closer cooperation with many options to change this relationship. The challenge is that the service provider organisation must be able to learn the business model and processes of the customer organisation. Customers on the other hand have to be ready to deal with products and service alternatives on a deeper level than transaction cost. The service organisation should take account of the customer's schedules and timetables. Commitment is needed to invest continuously in such a relationship, both economically and mentally. The success of the cooperation is especially strengthened by mutual trust and social exchange which is

claimed to be a necessary condition to the genuine cooperation project (Kern & Willcocks 2002).

Knowledge-sharing routines between partners

Some new branches build their information system services behind web-based business service portals. In many cases these portals are just cyber-crossroads, i.e. the customer “drives” to the crossing, selects a new road, drives on and never returns. It is far better to have shared knowledge creation where the exchange of knowledge is a two-way process. Stakeholders must learn from each other to improve service for the customers and for better competitiveness. A dominating partner often uses such portals as a bulletin or bill board. However, from the problem-solving point of view a working portal requires a common knowledge sharing practice of the partners and customers. Many companies that have operated in this way, have a long time service development towards pro-activity, right pricing of services and anticipation of customer needs. The added value is not just control of transaction costs or reduction of intermediaries as was argued in the early days of e-commerce. There is a search for new value creation models.

Complementary resources or capabilities

Resource-based theory of businesses focuses on resources which are valuable, rare, difficult to copy and effectively organised from a competitive point of view. The core competence of a business is often created in the long run, self-steered and sometimes even by chance. Particularly for the management it is difficult to see the importance of competencies created on the business floor. Working knowledge is very often emerging from working and business processes (Davenport & Prusak 1998). However, these competencies can become obsolete, if competitive or technological changes affect our business environment. An inter-organisational setting which is based on learning in alliances (Larsson et al. 1998), also provides a good setting for developing competencies. Competitive advantage of knowledge networks is created through the clustering process in which two or more organisations with complementary competencies begin to compete against other competitors’ clusters with similar interests (Ruohonen et al. 2003a).

Effective governance of relationships

Inter-organisational competitive advantage will not be achieved if the costs of cooperation and governance exceed the level of other competing clusters. Governance practice must be created, while different stakeholder groups control their own interests. Very often an independent mediating organisation or an official broker manages the service portal, based on agreed partner relationships. However, the growing role of context-related knowledge makes the contribution of an “independent broker” problematic. It is a dilemma both to stay neutral between collaborating partners and to become deeply knowledgeable on substantial industry issues. Practice implies that just delivery of contents is not enough, you also need to manage community building and develop and share contextual knowledge. The operational actions, appointed to particular persons in charge of the organisation, and the processes must be clear and explicit to every partner. The broker must be able to operate fast without constantly arranging meetings when the cooperation proceeds and the customer interface changes. Situations in which this customer setting has to be evaluated and checked will be created continuously.

E-WORK: COMMUNITY OF PRACTICE VIEW

Knowledge is created within communities

The problem in current developments of knowledge society is that knowledge creation is seen as technology-driven process and not as a work-driven process. Community of Practice (CP) experts emphasise contextual development of organisations (Wenger 1998, Brown & Duguid 2001). However, many organisations still rely on technology-driven knowledge creation and numerous databases (Wenger 1998). Contextual knowledge involves interactions, conversations, actions and interventions. Integration of working and learning demands focusing on formation and change of working communities. In organisations people acquire not only explicit knowledge, but also encultured knowledge to be able to act as a community member (Blackler 1995, Davenport & Prusak 1998, Brown & Duguid 2001).

A CP consists of three basic elements (Wenger web portal 2003):

- a) *What domain it is about*—the domain of knowledge that gives members a sense of a joint enterprise and brings them together. The joint enterprise reflects the members’ own understanding of their situation.

- b) *How it functions as a community*—the relationships of mutual engagement that bind members together into a social entity. Members learn with one another and interact. The degree to which any group is a community of practice depends on how they function together; this cannot be decided in the abstract.
- c) *What capability its practice has produced*—the shared repertoire of communal resources that members have developed over time through their mutual engagement. Communal resources include, for example, routines, lessons learned, sensibilities, artefacts, standards, tools, stories, vocabulary and styles. This repertoire embodies the community's accumulated knowledge.

CPs can easily cross formal organisational boundaries. Therefore a broader context should be considered of social learning systems, such as industries, regions, or alliances comprising multiple communities in interaction (Wenger 2003). Relationships among members are based on collegiality, and the community's purpose is to develop knowledge, not to allocate resources or manage people in order to deliver a product or service to the market. This multiple membership is crucial to the creation of a learning process that connects the development of knowledge and the work (Wenger 1998, Wenger & Snyder 2000). Managers should focus on bringing the right people together, identifying potential communities that will enhance the company's strategic capabilities, providing an infrastructure in which communities of practice can thrive, and using non-traditional methods to assess the value of the company's communities of practice (Wenger & Snyder 2000).

Miscommunication and misunderstanding are common at boundaries, because different communities have different ways of interacting. This creates a space for intercommunity learning in boundary processes and for the production of new knowledge (Wenger 1998). Multiple membership allows people to act as knowledge brokers across boundaries. Boundary objects can accommodate multiple perspectives, boundary activities, interactions and practices that force people of various communities to confront their experiences and perspectives. Technology platforms can make communication across boundaries easier. Boundary objects not only serve to coordinate, but to record and signal changes in one own community's practice (Brown & Duguid 2001).

Stewarding knowledge in communities of practice

CPs can vary in the extent to which they explicitly undertake the stewarding of knowledge (Wenger 2003). CPs might just be content to exchanges tips and lessons learned on an ad hoc basis. Some communities take responsibility for establishing and developing their practice and their community. Communities can evolve to be strategic in their thinking, explicitly viewing the development of their practice as a strategic move on behalf of the organisation. And in the last step some communities undertake to transform the organisation with the insights and new practices they have generated.

These levels do not represent a progression toward an ideal state. Each level has its value and is appropriate for some communities. But it is useful to see the range of what is possible and to be aware of the issues that communities face as they transition from one level to another. Understanding the value of CPs as stewards of knowledge is not always easy because the effects of community activities on performance are often indirect.

E-LEARNING IN THE CONTEXT OF WORKING ORGANISATIONS

Converging challenges of e-learning and e-training

In the IFIP TC3 E-training conference (Nicholson et al. 2004) it was stated that in the case of e-training and e-learning, many instructional programs are transmissive, viewing learning as passive, and focusing on individual learning, rather than as interactive and engaging — important attributes for the promotion of higher order learning.

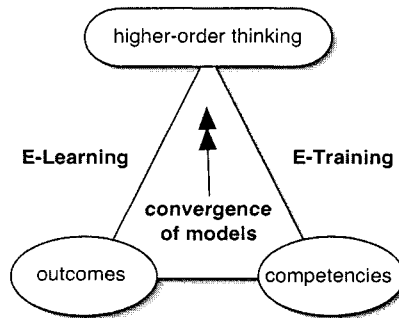


Figure 2. Convergence between E-learning and E-training models (Nicholson 2003)

Refocusing on the attributes of the underpinning learning models allows cognitive perspectives. A blended solution of cognitive strategies to support interactive and social learning is needed to maximise the potential for optimal learning and training. Nicholson (2004) states that we can expect to see a convergence of models as these both attempt to achieve similar kinds of outcomes (e.g., higher-order thinking) with an increasing focus of e-training on the knowledge-era workplace and of e-learning on real-world contexts. (Figure 2.) Nicholson suggests a new emphasis on developing effective learning models for both school and workplace learning, with the essential differentiation being in the context rather than the methods used to achieve learning outcomes, i.e., that cognitive aspects of learning should be central to both education and training models.

Learning in working life context

As noted many of the e-learning activities have been conducted in the school setting. However, a growing need is in the area of organisations and working life.

According to Järvinen & Poikela (2001) the most important task of management is to create an environment supportive of group activity, innovation and creation of new knowledge. However, there is also a growing discrepancy between cost-effectiveness pressures and mastering of innovations and knowledge creation. Finally you need to act as an acrobat to balance total quality and learning management (Ruohonen et al. 2003b). One of the opportunities is to foster informal and incidental learning at the workplace. Järvinen and Poikela (2001) propose a process model of learning at work (see Figure 3.) based on experiential and organisational learning models.

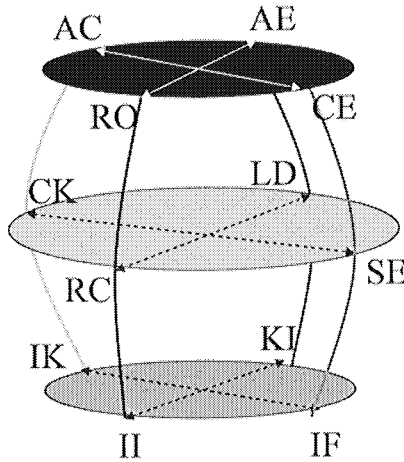


Figure 3. The process model of learning at work (Järvinen & Poikela 2001)

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| CE= Concrete Experience | SE= Sharing of Experience | IF= Intuition Formation |
| RO= Reflective Observation | RC= Reflecting Collectivity | II= Intuition Interpretation |
| AC= Abstract
Conceptualization | CK= Combining New
Knowledge | IK= Integration of
Interpreted Knowledge |
| AE= Active Experimentation | LD= Learning by Doing | KI= Knowledge
Institutionalization |

Management should be aware of four different processes: social, reflective, cognitive and operational, which bind together individual, group and organisational learning. Experiential learning in a work organisation can be refined into a process description in which these processes follow, influence and shape each other in a process of continuous learning. Järvinen and Poikela (2001) state that this new description brings a new kind of modelling, in which an organisation is seen as being composed of processes instead of being seen as levels and hierarchies. Ruohonen et al. (2003) propose that many of the social and reflective processes are neglected in the current working life. The use of ICT enables and even dominates cognitive processes, such as intranet and other communication media and furthermore operational processes, such as enterprise and logistics systems. However, knowledge creation also demands social and reflective processes in order to foster social innovations.

CONCLUSION

It was stressed that a comprehensive understanding of different domains of “e-thinking” knowledge is needed to allow focused professional development of business, work and learning. Quite a lot of effort has been put into development of technology platforms. However, after the bursting of the hype-bubble, the nature of work communities and work-related learning are again highly relevant.

We have to avoid unrealistic top-down planning, while communities of practices are driving the knowledge creation process in which the members of the community decide on boundary objects between organisations or even alliance structures. In knowledge society most of learning is in the real-life setting i.e. incidental or informal learning. We need to understand more systematically the nature of learning at work. Otherwise we will lose sight of how development should go, either by focusing too much on top-down approaches or by just believing in liberation of work or by basing ourselves on technology-driven school pedagogy.

To be effective in engineering the Knowledge Society, our development efforts need to influence the three domains of knowledge, i.e. e-business, e-work and e-learning. Development slogans such as digital competence development or network learning (see Nicholson et al. 2004) confirm these ideas and show that some organisations are already ahead along these lines. Now we need to take it to the development agenda at society level.

BIOGRAPHY

Dr (Econ) Mikko J. Ruohonen is professor at the University of Tampere and a teacher at the Turku School of Economics and Business Administration in Finland. He has worked in the field of information resources strategy since 1984. Besides his teaching and research on information strategies, electronic business, knowledge management and inter-organisational learning he is active in several management executive programs such as the Executive MBA TIJO Program for CIOs and the Pori Management Development Program by the Tampere University of Technology. He has published four textbooks, over a 100 articles and lately prepared an e-business strategy report for the Finnish technology industry. He is the Chairman of International Federation of Information Processing (IFIP) Working Group 3.4. and Chairman of the Board of the Center for Extension Studies at the University of Tampere.

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