

# LEARNING FROM THE ICT INDUSTRY REAL-LIFE CONTEXT

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**Abstract:** The ICT industry has faced many radical reorganisations and transformations during the last few years. This has pressured managers to renew their leadership cultures and practices. Action research driven results are interpreted in this paper to reflect the kind of learning challenges that are to be transferred in real-life learning situations. Different examples and potential solutions are discussed.

**Key words:** ICT Industry, real life learning, university-industry collaboration.

## 1 TURNAROUND EVOLUTION IN THE ICT INDUSTRY

After the ICT bubble period it seems that industry has moved to a new phase of evolution. Complexity and ambiguity have increased and the lucrative image of ICT has diminished (Earl 2003). Investors now understand more about the nature of the ICT industry and think more carefully of using their money. Information systems are now more integrated which demands not just nice multimedia properties: there are also difficult combinations of different age transaction systems. Internal systems renewal is just a start for whole industry-level changes (Kalakota & Robinson 2001).

The ICT industry is also growing towards a service business. In service business you need different leadership skills to face customers. Customization and bundling of service and product knowledge are needed (Pine 1993, Pine & Gilmore 1999, 2003) Companies need to upgrade their

service processes as when crossing borders value chains, a help desk is not enough (Davenport & Beck 2001, Norris et al. 2003). The ICT industry needs to become a partner relationship: part of their customers' knowledge networks (Barney 1991, Dyer & Singh 1998, El Sawy et al. 1999).

Management and leadership need to change, too. Lucrative and open organisational culture was favoured some years ago. People were friends together and spent their free time together, maybe even in office parties. Sweet family culture is now very often broken and the grey reality of taking care of cash funds, thinking of your future with budgeting and keeping your staff in work, are dominating. Learning of qualitative work and leadership cultures needs close collaboration with ICT companies. Universities and other educational institutions need to build competencies to recognize and share these challenges. One way of doing this is to involve students in small field works and even action research projects. In this paper an attempt is made to discuss topics and learning areas in which this particular leadership culture is dominating.

## **2 LEADERSHIP CHANGES IN ICT COMPANIES**

### **2.1 A Need for Contextual Understanding**

The ICT industry went through a period of strong turnover of personnel which occasionally resulted in poor quality management, and productivity problems. Business know-how was too often sacrificed for Initial Public Offerings (IPOs) (Kühl 2002, 2003). Hence, growing importance is now on sensibility of the work, work community, organisational culture and management style. The proposed framework (Fig. 1) serves as a theoretical lens for exploration. Competitive requirements make companies aware of good quality and project deadlines. Personnel differences refer to differences in age, culture, job career, professional backgrounds, even gender, and race in some contextual settings. This framework serves as an eye-glass for reviewing each company's situation. The dimensions are i) external variety i.e. growing competition, more complex business models and even harder requirements for products and services, and ii) internal variety i.e. growing divergence of personnel which is emphasized in more difficult customer service situations and ICT industry convergence evolution.

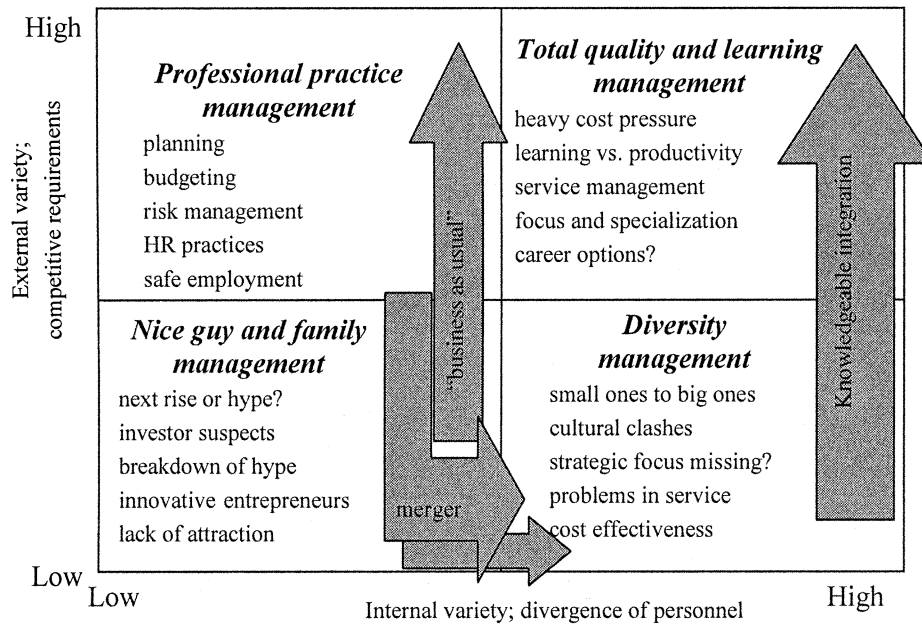


Figure 1. A framework for knowledge work & leadership management

The framework is proposed after a three-year action research project in three Finnish ICT companies with follow-up of the whole ICT industry evolution (Ruohonen et al. 2003, Ruohonen et al. 2004). Contextual dimensions describe four generic types of leadership cultures. They are introduced below and discussed from the learning challenge view.

### 3 REAL LIFE CONTEXTS AND LEARNING CHALLENGES

#### 3.1 Nice Guy and Family Management

This context is represented in typical start-up ICT companies, such as the so-called new media companies of the 1990s. Customer intimacy might be very intensive and knowledge sharing is easy due to small company size. Knowledge workers participate in joint problem solving and meetings. However, recognition of complementary competencies is seldom done

explicitly. Governance of projects might be poor, quality of project management low and timetables flexible. Quality management becomes a problem, although there might be high motivation for new projects. People management is based on “nice guy feelings”, managerial structures are often neglected and systematic administrative processes do not exist. Management follows the values of friendship or even family culture.

Most of these companies from the 1990s have now gone through a major change. They have either been bought or merged to a larger company or they have been forced to create more organised business management. Many of the “happy family” values have now disappeared and ICT workers have aligned themselves within a larger and probably a more bureaucratic working environment. They might also have been competitive enough to stay independent in the markets but have reorganised their internal processes, such as planning and budgeting principles. Knowledge workers might feel loss of freedom or innovativeness under the stress of profitability and deadlines.

**Contextual learning challenges.** This kind of work context was, and is, still very tempting for young students, at least in those times when things were better. Nice cars, flexible working hours, positive publicity, young heroes of ICT business have now turned to cost-effectiveness, boring work, failures and burn-out professionals. It is a highly risky environment, where students need to recognize the reality of running a business. Many of these success stories have now failed and people have lost their money.

Therefore all business start-up’s and incubation arrangements for entrepreneurially oriented students need to have good business knowledge/know-how content. This content needs to be aligned with your curriculum in a way that integrates knowledge to the company context. For example exercising with real company data or running business games with real-life contents can reveal more about the operations and management of a small, growing company. Topics such as finance and accounting, quality management and running of projects combine these things together.

### **3.2 Diversity Management**

This context is typical for some of the fast growing dotcom-companies. After having increased their size, acquired smaller firms and got Initial Public Listing (IPO) their rapid growth has caused communication problems and a clash of cultures. Many “family” companies have been “chopped in pieces”. Relation-specific assets grow but they are fragmented. Customers are not instantly customers of the new merger-based company. Projects are more diverse in nature and demand variety of personnel competencies. Experts might dominate their own domains of knowledge and do not

collaborate. Key people might leave and set up a new company to compete with the previous one. Knowledge sharing might grow problematic due to rapid growth and different learning styles of personnel. Governance can still be poor, affecting quality standards. The challenge is diversity management, both projects and human resources become more diverse and managers need to know more about different psychological, social and cultural phenomena. ICT projects are increasingly tying together many professional fields such as IT security and infrastructures, domain applications, communications networks, and even understanding of human behaviour. Diversity management is increasingly moving towards knowledgeable integration.

**Contextual learning challenges.** This context proposes many important topics for students. Fast growth and constant re-organisation of your business pressures you to understand better the inner movements of industry. In order to change companies need to have a long term view of the future. They need to activate strategic actions and not just react to the current situation. It means a follow-up of industry changes and interpretation of the news which might show weak signals for understanding change. Strategic planning exercises with a real-life company feedback will help. Making a merger or an IPO plan would also focus on issues which are relevant when growing. Diverse culture management can be improved by mixing managers and knowledge workers together with exchange and local students. This will also help in explaining the human resource management challenges in a diverse business context.

### **3.3 Professional Practice Management**

This is the direction for rather homogenous company personnel in an increasing competitive situation. Companies can create systematic approaches, improve strategies, structures, and processes in line with customer demands. Especially project managers need to be aware of project deadlines, strong enough to resist “last minute changes” and “over-quality”. The advantage of these companies is customer relationships. Professional rules, patterns, and even support systems can help sharing knowledge inside the company and within customers. Complementary competencies are identified and constant review of service quality is done. Governance is more systematic but enables freedom when necessary. In these companies world-class innovations are possible. Professional practice management develops the company further. Kühl (2003) confirms that diverging needs, personal plans and group egoism can inferiorate organisation, if it is not fast enough to renew its decision making.

However, companies are in danger of being bought by a larger player or a growing industry giant. Then they need to learn buying company’s rules and

procedures while unlearning all their own routines and processes. For professional companies it might be more difficult to adopt new rules than for a happy family type of company. The greatest risk is to lose key people due to this change. However, if the professional company is competitive enough it can stay independent and concentrate on its relation-specific assets in order to maintain financial health. On the other hand if they have no inimitable resources, they must accept the industry transformation.

**Contextual learning challenges.** One of the most important findings in this context is customer and service management. In order to be successful in your business you need to follow and even create your customer needs. For students this is one of the challenging areas, while you need both buyer and seller companies in order to understand the situation. Market research and customer surveys are useful but sometimes you need to contradict some of the assumptions made by seller companies.

Administrative rules, documentation and a more professional way of planning can be introduced by comparing and benchmarking different industry practices. It also provides some space for innovations. We can, for example, benchmark emergency health care and Internet service provision i.e. try to transfer contextual practices. We need also to understand organisational change and its implications to knowledge work management.

### **3.4 Total Quality and Learning Management**

This context requires both the management of competitive forces and also different personnel management approaches. These companies are normally big players with diverse personnel also working abroad. They need to take care of both old legacy systems and emerging new e-business systems. Often these organisations take care of outsourcing and application service provision and also may hire people for customer companies. Relation-specific assets are usually managed by customer account managers. Projects and customers are categorized. Companies have initiated both formal and informal knowledge sharing practices. Complementary resources are gained through team building, task forces and evolving organisational arrangements. Governance uses total quality management.

These companies are in danger of becoming too bureaucratic, therefore active learning and innovation processes are needed. Constant quality and learning management means both keeping costs and schedules and enabling creativity and professional learning. It has been easy to recruit or even pick up ICT professionals from companies reviewed before. They are now attractive as “a safe company” in the new economic situation. However, innovation-oriented people do not necessarily stay in these companies if they are not actively motivated. People might leave or consider setting up or

joining a smaller ICT company. The greatest risk of these established players is non-innovative culture. New competence building might stay hidden and the company become too mechanistic.

**Contextual learning challenges.** Management of innovations in the same time as quality demands a combination of project, process and human resource management. It also means development of career and other competence building programs. Learning by doing, incidentally or outside the workplace comes very important. For students this field is challenging while you need a quite long period of experiences in order to reflect professionally. One possibility could be a long term “godfather” type of collaboration with some selected companies in the ICT sector. This will enable long enough observation of the company. Students can continue their participation year after year and finally get a job from that company. Understanding of organisational culture and environmental change pressures demand tacit knowledge development. It is difficult to deeply simulate the organisational routines and embedded actions if you do not know the background and history of business.

#### **4 CONCLUDING REMARKS**

Real-life learning challenges were examined in the context of the ICT industry. One of the most challenging issues is leadership in emergent situations. Contextual changes can be due to competitive factors or evolution of the personnel variances. As start-up companies need IT competence and high level motivation of creating new artefacts in an inspiring atmosphere, a fast-growing IT company needs a more controlled and systematized way of doing business. “Clashes of culture” mean that knowledge is needed when companies outsource or merge together.

Strategic learning tasks in the changing ICT industry context are increasingly oriented towards human resource management. Service orientation demands learning of customer intimacy. A knowledge-intensive way of doing business relates to learning for sharing practices, reflection on past experiences and creating knowledge in communities of practice. Service and knowledge-based innovation are enabled through customer relationship intensity. A product and technology driven economy transforms to an experience economy which means that our learning systems need to be aware of industry changes and live together with real-life situations. However, there are no “quick-fix solutions” in the manner of: “just ask a company manager to give a lecture”. Joint experience needs work assignments for students, reflection practices steered by senior teachers, sharing of problems in a discussion forum and mixing together company

people and students. It is a systematic building of social infrastructure between universities and companies.

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