# Enhanced Mobility - Augmented Possibility? Developments in Co-operative Work

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# Enhanced Mobility - Augmented Possibility ? Developments in Co-operative Work

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# Enhanced Mobility - Augmented Possibility ?

# Developments in Co-operative Work


**ABSTRACT**

*This paper enlightens enhanced mobility and the ongoing changes in collaboration forms. It reports on studies of communication and co-ordination in a work setting, including discussing the implications of the observations for enhancing mobility in co-operational work. In the analysis this paper use a framework developed by Lyytinen and Yoo (2001), in order to analyse a heterogeneous interconnected technological and organisational environment, which enables both physical and social mobility of computing and communication services between and across organisational actors. In response to earlier ignoration, the issues of large-scale design and integration to the existing installed base of services and infrastructures, both technical and social, are here put into focus. The framework consists at the fundamental level of three technological trends that drive the developments in mobile technology: mobility, convergence and mass scale. These factors influence in turn the developments in infrastructure and services, which encompass both technical and social elements. The empirical study took place in an IT-organisation, in one of the world's leading Internet consulting companies. In the networked organisation the work practice is dependent on the co-workers ability to co-operate from various, constantly shifting, locations. This paper suggests that utilise Web-based Information Systems as communication media could initially provide necessary means to support mobility in their co-operational work. Our conclusions are that mobility is a fast-growing phenomenon, which will considerably change the terms and developments in co-operative work. Further, that the organisational culture will have deep impact on how the technology features are accepted and incorporated in the work practice. There is diversity in the use of the concept mobility, in relation to research. To meet this, the authors suggest a general Framework of Interaction Patterns model. The overall organisation of the framework is build around a dichotomy of variables, and it can be used normative in a design context or for descriptive purposes.*



**Keywords**

Mobility, co-operation, communication, nomadic environments, Web-based systems, case study.

## 1. PAPER CONTEXT

This paper is the second in a trilogy of papers derived from a case study in an Internet consulting company. The first paper, "*Web-based Information Systems - Infrastructures and Co-operational patterns in a Networked Organisation*", focused on portraying the different competencies and roles in a full-service Internet consulting company (Hoffmann & Rosander 2001). In this second paper, the focus is on how distributed communication and co-ordination are carried out in specific, and the implications of enhancing mobility in co-operative work in general. The third paper, "*Towards Mobility - Implications of Communities of Practice*", will elaborate on the discussion of how technology supporting mobility in collaboration influences the organisational culture, adding the element of implications of communities of practice entailing co-operation.

## 2. INTRODUCTION

The use of IT in organisations is headed towards increased mobility; thus people are more mobile in their work today. Workers are to a higher extent bound together by being linked through communication networks. Today work frequently is a mobile activity realised through new applications like Web-based Information Systems (WIS), which enable new ways of acting and co-operating when mobile. This study aimed to explore new ways of using IT in mobile work settings. Mobile workers and their activities were in focus, in the case study that investigated Web-based systems' impact on co-operational patterns.

## 3. BACKGROUND

*Mobile Informatics* is a field concerned with exploring new and innovative ways of using IT in mobile settings (Kristoffersen & Ljungberg 1999). The importance of mobile communication support is increasing, as new organisational forms are emerging where mobility is recognised as an important facet of co-operative work (Bergqvist 2000). Dahlbom (1998) describes a trend towards a higher degree of nomadicity; by the use of new information technology people will be able to move around and work wherever they are independent of time and space. Portable computers, and technologies like WAP and Bluetooth, also conduce to enable these new phenomena. New standards, like UMTS and TCP/IP (v6), will provide the means for fast widespread interactions through geographically dispersed computers.

There is an emergence of new organisational forms that consists of dynamic networks of offices, which coalesce to produce a product. For instance, this appears in the Internet consulting business. It is suggested that the emergence of new communication technologies provide the relevant support for these flexible and contingent organisational forms (Heath & Luff 1998). These technologies could support companies, allowing organisational activities not to be so focused within a particular office. Web-based systems would appear to correspond with and facilitate such developments, offering the kind of support geographically dispersed individuals need. These systems could provide the means for having access to distributed colleagues, in a shared environment, as well as enabling the ability to share and exchange documents and information, thus enhancing an individual flexibility.

Not until fairly recently has mobility in collaborative work been put into focus, or featured in empirical studies of work and communication (Heath & Luff 1998). Mobility is a term here used to describe a flexible state of being, transmitted into reachability; all-the-time, everywhere. The

trend in CSCW to enhance collaboration by providing increasingly complex support on conventional computers appears to run counter to the findings of many workplace studies, which have demonstrated how participants, as a matter of co-ordinating their activities with others, rely upon their own mobility and the mobility of artefacts (Heath & Luff 1998). Further, Heath and Luff (1998) claim that the ways in which mobility features in collaborative work has largely been overlooked within the field of CSCW, accordingly in their study they examine the emergent issue of requirements to support mobility within collaborative activities.

In recent years Web-technology has become a widespread platform for organisational information systems, in connection with notions such as electronic commerce, Intranet and Extranet. These Web-based Information Systems are to a high extent crucial for the company's effectiveness and competitiveness in the new IT-era. Related to this is the ongoing change towards more dynamic and flexible organisational and co-operational forms. This new medium for human communication provides a universal user interface and supports co-operative work at any time and any place, through making space for a flexible and mobile work context for knowledge workers. The WIS will have an increasingly significant impact in organisational contexts, particularly on how people communicate, collaborate and co-ordinate their work both internally and externally (Lyytinen et al 1998). Emerging new companies are using WIS for regional networking and the technologies bring new conditions and possibilities that pose both organisational and technical challenges (Lamb & Davidson 2000).

## 4. CASE STUDY DESIGN

Current research has emphasised the need for establishing a deeper understanding of the actual work practice when designing new systems. Using different techniques in the design process compared to traditional software engineering approaches and conducting ethnographic studies enable getting a rich picture of the work practices for the purpose of informing design (Blomberg et al 1991; Greenbaum & Kyng 1991; Simonsen & Kensing 1998; Suchman et al 1999). Hence, the ethnographic approach is becoming widely used in connection with workplace studies with the objective of informing designers. The artefacts are set in different social contexts and in making sense of the patterns it is necessary to include this context when studying technology-in-use. Relationships between technology and work practice have consequences for how organisations design and use information technologies to support their work. To understand technologies ethnographically it is required to locate artefacts within a site and their relations in everyday use (Suchman et al 1999).

Communication between individuals is affected by introducing new technologies and should therefore be in focus (Suchman 1987). Suchman's conclusion is that because an action or event always is dependent of a certain social and physical environment the understanding for and the attention on this environment is important when that action is to be interpreted and understood. There has been an increasingly need for communication between people in different locations. Use of new technologies enable new possibilities for long distance communication and co-ordination through creation of virtual places for co-operation and mutual activities. The authors therefore suggest designers to develop an enhanced knowledge about the implications of new interaction technologies in work place settings.

In understanding complex social phenomena, a case study allows an investigation to retain the holistic and meaningful characteristics of real-life events (Yin 1994). An explorative case study investigated following research questions: How has the development within co-operative work changed in recent years? How does enhanced mobility affect co-operational patterns? The purpose of the study was to analyse and present how people currently are working with WIS, further the implications of this in terms of co-operational patterns in a networked organisation. Distributed work is a term that here is used to describe work life that is less dependent of concrete workplaces. The unit of analysis was a Scandinavian consulting company. In mobile systems, as in other areas of human-computer interaction, it is not sufficient to focus on the specific interface of a device that operates within a broader context including; the network and computational infrastructure, the broader computational system, the application domain, and the physical environment (Dix et al 2000). Further, they suggest that one aim of the growing focus on context is to allow the highly situated nature of interaction devices to be reflected in the design of such systems.

In the design of an explorative study the criteria by which an exploration will be judged successful should be stated (Yin 1994). Hence, the criteria for interpreting the findings in this study were to define if the employees' experienced that their co-operational patterns have changed in any ways, as a result of enhanced mobility, in recent years. Through the use of a selection of qualitative research techniques and sources of data-collection the study took an ethnographic approach to develop an understanding of everyday activities of particular communities of people (Blomberg et al 1991). The research method used was case study as it enables a collection from a variety of sources in order to get a rich empirical base (Yin 1994). The techniques employed were observation, qualitative interviews, descriptive field notes and document analysis. In the discussion the studies of the co-operative work are related to different theoretical perspectives, including mobility as a phenomena, and influences of the organisational culture.

## 5. CASE STUDY

The empirical study was carried out in an IT-organisation, in one of the world's leading Internet consulting companies. The employees are organised in small units in several countries, where the study focused on the units in Sweden and Denmark. The study focused on how the use of Web-based Information applications support the co-operative work and exchange of information between actors, who are interdependent in their work and co-operate in, distributed national and cultural work settings (Hoffmann & Rosander 2001). In exploring work and communication in this environment, considerations were further made about how individuals are dependent on mobility in their co-operational activities. This led to an extended study, which forms the basis for this analysis.

The company has had an aim to organise itself in small units of fifty employees each in so-called cells. The idea behind this was that it would promote close internal relations and create a flat organisation with short distance between the employees and the division leaders. The limited number of employees in each cell facilitates communication and makes the decision-making process short. This makes the cells to small, dynamic and innovative work places. They claim that between the cells there is an ongoing exchange of knowledge and ideas, for example through

their common Intranet. Often several cells co-operate in a shared customer project, in a networked manner. In these projects the customers are typically selling a global brand, hence the corporation can be between employees from the other offices in Bulgaria, Denmark, France, Holland, Italy, Norway, Switzerland, Spain, Great Britain, Sweden, Germany, USA, and Austria.

The company is not hierarchically organised; instead the employees are working in a form of project organisation. A project consists generally of several employees and includes a project leader, a technical project leader, a graphical designer, an interface developer, systems developers and the centre for user experience. They use Web-technology foremost because of the platform independency. This new computing platform will, among other things, result in a ubiquity of services, i.e. services will be available at any time and at any place (Lyytinen et al 1998). In this way it could provide a basis for more flexible and mobile co-operational patterns. The ubiquitous and emergent nature of Internet-based technologies (Lyytinen et al 1998) could inspire new innovative use possibilities. Though, just due to the fact that there is an Intranet does not necessary induce an efficient utilisation, there is still need for incentives and motivation. Especially, similar to the conditions in this case, when an organisation is comprised of a large number of semi-autonomous entities in various locations, Intranet integration could become problematic according to Lamb & Davidson (2000).

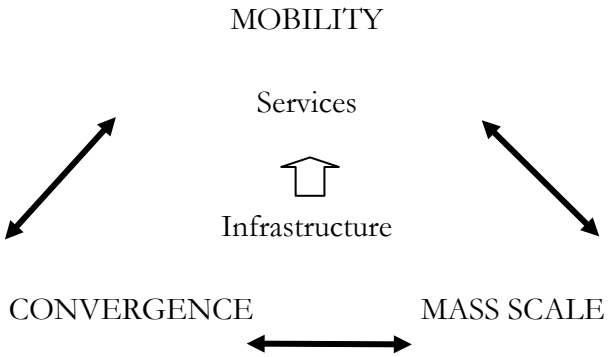
## 6. FRAMEWORK FOR ANALYSIS

Lyytinen and Yoo (2001) claim that concepts like pervasive or ubiquitous computing enabled by developments in mobile and wireless communication technologies, such as WAP, Bluetooth, and 3G mobile phones, enable new types of nomadic and flexible information environments. Further that those new tools allow personalisation of knowledge for individual knowledge workers, and provide possibilities for accessing knowledge and information in organisations as well as communicating them with others on the move. In the analysis this paper use a framework developed by Lyytinen and Yoo (2001), in order to analyse a heterogeneous interconnected technological and organisational environment, which enables both physical and social mobility of computing and communication services between and across organisational actors.

In researching nomadic information environments, one need to study the environment in order to create an understanding about how individuals behave when supported by various services and infrastructures (Lyytinen & Yoo 2001). Given *the personalised and localised nature* of nomadic information environments, they further suggest that research in this area require close examinations of phenomena as it happens, using intensive research methodology like ethno-methodology and such kind. Further, given the *globalised* nature of nomadic information, to include the interrelationship among various individuals and technological tools dispersed in time and space. Hence, the ethnographic approach in this paper should form a fruitful basis for developing a worthwhile discussion. The case study is in the remainder discussed from these, above mentioned, different perspectives.

In response to earlier ignoration, the issues of large-scale design and integration to the existing installed base of services and infrastructures, both technical and social, are here put into focus. The framework consists at the fundamental level of three technological trends that drive the developments in mobile technology: mobility, convergence and mass scale. These factors

influence in turn the developments in infrastructure and services, which encompass both technical and social elements.




*Model 1:* A framework of nomadic information environments (Lyytinen & Yoo 2001).

Following analysis of the case company is based upon this framework, and its accompanying discussion, suggested by Lyytinen and Yoo (2001).

### 6.1 Mobility, Convergence and Mass scale

*Mobility* includes both physical and social mobility, i.e. the way in which individuals move across different social contexts and social roles, still being supported by the technology and services. It will be equally important to consider the social mobility while designing services and creating the infrastructure for nomadic knowledge work (Lyytinen and Yoo 2001). At the case company the employees often are involved in multiple projects simultaneously, that might have unique and distinctive social structures. They differentiate between two dissimilar types of projects; concept development and business-oriented projects. In a concept development project there is focus on idea or concept development with emphasis on design, communication and evaluation among typical users from the target group. It can be campaign sites, on-line communities as well as portals. The business-oriented projects normally involve development of an integrated system solution, where a Web-based front-end system is integrated with the customers' existent IT-systems. As the employees are allocated to many different places and contexts in a week, they have to adapt and take in much information within these. The employees believed Web-technology to be suitable for co-operating across competencies, although the study showed a strong connection between social infrastructures and sharing of information among employees (Hoffmann & Rosander 2001).

The recent *convergence* between mobile phones and personal digital assistants (PDAs) is an illustrative example of the ongoing technical trend. These devices can transmit many different types of information (text, audio, video, etc). Critical for convergence are open standards, such as TCP/IP, WAP, and Bluetooth. These lead to a convergence of devices that is essential to support physical mobility, but however not enough to support social mobility. Organisations need to define the meaning of social roles, behaviours and organisational contexts, including with technical as well as social elements. At the company the Intranet was utilised by different types of users, and furthermore, there existed several Intranets. A local Intranet was used for information, reports, handbooks, role descriptions, telephone list, attendance, and reservation of premises, and

a worldwide Intranet where the article database along with time registration, discussion forum, and Human Capital could be found. Even though the Intranet is supposed to support knowledge sharing, and contains all documents, reports of best practices and vital information, it seldom works well for this purpose. The management does not know why there is this tardiness, but think an active use demands reflection and "*taking a step backwards*" which takes time they do not have during the project processes. The general opinion is that knowledge is hard to spread in the organisation.

Mobility and convergence implies that the deployment and use of these environments will take place at a global level on a *massive scale*. The diffusion of Internet/Intranet and peer-to-peer computing tools demonstrate the difficulty of using traditional theoretical models to predict the diffusion of large-scale systems. In the global case company there exists awareness that it requires incentive structures to activate the use of the Intranet facilities, but so far they do not feel that they have succeeded in creating such structures across the boundaries.

**6.2 Infrastructure and Services**

Nomadic information environments are created on two layers where the *infrastructure* provide a stable platform for mobile computing, meanwhile *services* need to be configured to meet personal needs of users in the context of physical and social mobility. Different systems will be combined during the work, for example desktop computers, portable computers and mobile phones, in the company, personalised to the specific needs at the time and of the task in question. In the future an Intranet portal service could be reached from a PC, or a mobile PDA, that will adjust accordingly to the device. However, organisations cannot adequately manage the complexity of mobile services without a stable infrastructure reflecting both social and technical dimensions. An Intranet could be seen as foremost a communication technology rather than just an information system. The meaning ascribed to networked technologies by actors is highly context-specific, and also affected by the local organisational culture and supporting infrastructure. Thus, these new technological infrastructures mean an increased openness and exchange between actors in different locations and communities. Hence, the material infrastructure should support existent social systems. In understanding the connections between all the complex infrastructures in the organisation, by enlightening that growing co-operational patterns are firmly linked to the social infrastructures, the necessary awareness about the dependencies can be created.

Computing is still often related to a fixed office environment, as a result individuals are not able to utilise information when and where it makes most sense. An interesting example, which also where found at the case company, is the failure of desktop group calendar systems. The usefulness is severely limited since the users have to use PCs to access the system, which makes it harder to use during meetings to co-ordinate schedules. In the company the facilities of a company-wide electronic calendar were implemented, but were however not particularly used due to the employee's resistance, this could possibly be connected with the employee's strive towards a feeling of autonomy (Hoffmann & Rosander 2001).

The company's statement is that to keep the creativity and neighbourhood-feel of a small business they *must operate globally, but act locally*. With the cell structure they balance the advantage of working in a small, coherent office with the benefits of a large organisation. This is necessary

in order to preserve the speed and flexibility of a small enterprise. They are building one large, powerful business out of many small offices. That gives a local organisation with evolved independence, and still encourages the thriving entrepreneurial spirit. This decentralised organisation also offers the company the stability it need, to enable a rapid growth. The future vision is that individuals can be connected to the global communication and service network, and equipped with mobile communication tools to access corporate knowledge and resources independent of location. This could permit new levels of both localisation and globalisation of knowledge simultaneously in the organisation.

Following Lyytinen's and Yoo's (2001) framework for research issues in nomadic information environments, the following section's focus is primarily at the team level, where the support for local and remote mobility through transactional memory systems, co-ordination mechanisms, and awareness support demand novel and scalable infrastructure services. Transactional memory is a concept to understand knowledge and learning in teams. It is a meta-knowledge about other individual team members' expertise, hence encompasses knowledge about who knows what in the team. The employees at the company are valued with regard to earlier experiences and tool skills, on the Intranet there are possibilities to search for someone with specific competence. In order to find necessary knowledge resources to solve a given problem within a project they simply try to contact another employee, who is thought to be able to help, "*then you call someone who has that knowledge*". Hence, much of the knowledge sharing is dependent on human networks and further also linked to individual employees. At the team level, nomadic information environments both necessitate and provide awareness of the status of knowledge resources in the organisation (Lyytinen & Yoo 2001). It is important to include both human and technological elements in order to improve the team performance. Services at the team level must provide flexible mechanisms that enable a co-ordination of activities and sharing of ideas across temporal and spatial limits. Two salient issues for the adoption and use of nomadic information environments at the team level will be team level acceptance of such environments and new team processes and configurations (Lyytinen & Yoo 2001).

## 7. DISCUSSION

The design challenge within social innovation is to understand user needs in a new information rich nomadic environment, enabled and supported by multiple technologies, services and pervasive infrastructure (Lyytinen & Yoo 2001). These mobile systems are particularly problematic because of the various ways in which they break assumptions that are implicit in the design of fixed-location computer applications, leading to new design challenges for human-computer interaction (Dix et al 2000). In the following discussion the case study findings and mobility in general are related to and discussed from without the different theoretical perspectives.

### 7.1 Mobility as Phenomena

Theories of mobility as phenomena (Dahlbom 2000; Lyytinen & Yoo 2001) may suggest that mobility is part and parcel of future organisations. This implies that a new perspective on mobile technologies and information system is needed, while considering the conditions of mobile work and what kind of technologies there are to support distributed actors in an organisational context.

When reading the literature on mobility - within the broaden field of computer science - different islands emerge, with variance in languages and applicability. Given the complex nature of nomadic computing an examination of the phenomena is vital. *Mobile Informatics* is put forward as a research discipline focusing on *mobile work, mobile services* and *mobile IT-use* (Dahlbom 2000; Dahlbom et al 1999). Attention is further drawn towards *physical and social mobility of computing and communication* (Lyytinen & Yoo 2001); they feel that it is critical to take into account both kinds of mobility while researching these issues and to understand mobility as a socio-technical design issue. Other concepts like *mobile communication*, *mobile staff*, *remote and local mobility*, drawing on the well-established green of shared workspace, media spaces etc within CSCW, are also part of the emerging picture (Heath & Luff 1998).

*Who* are moving *what* - and *when* and *why* seems to be the questions, when doing research on mobility. But is the concept *mobility* attached to the *who* and *what,* or the *when* and *why*? This appears, to the authors of this paper, to be somewhat indistinct in the majority of literature on mobility. One way of clarifying this is in the following presented through a framework, developed on the basis of an analysis on the conceptualising of mobility, as well as on the empirical material.

Besides being a concept often used in physics, with reference to movement of particles, the concept mobility has two main usages. The first falls somewhat out of the scope of this paper, as mobility is defined in the terms of: *The mob or the lower classes* and of *persons ability to move between different social levels that exists in a society*. Mobility is defined as follows in the Oxford English Dictionary Online:

**1**. a. *Ability to move or to be moved; capacity of change of place; movableness. Also, facility of movement.*

b. *Of the limbs or organs of the body: Freedom of movement; absence of fixity or rigidity; occas. liability to be abnormally displaced.*

c. *Transf. and fig. of immaterial things.*

**2.** *Ability to change easily or quickly; liability to fluctuation; changeableness, instability; fickleness.*

**3**. *Mil. Of a field force and its equipment: The quality of being able to move rapidly from one position to another.*

The definitions in Oxford English Dictionary Online mirror the diversity in the use of the concept mobility, which makes the need for clarification even more consequential. To meet this diverse set of concepts, used in relation to research in mobility, a framework is suggested. The different elements in this general framework of Interaction Patterns can be used normative in a design context or for descriptive purpose, as the following examples will show. The overall organisation of the framework (illustrated in model 2) is build around a dichotomy of variables, thereby making a discussion of the wide spectrum of Interactions Patterns applicable.

| Elements to consider | |
|---|---|
| *Place* | Home <-----> Office(s) |
| *Space* | Personal <-----> Social |
| *Time* | Synchron <-----> Asynchron |
| *Sphere* | Focal <-----> Periphery |
| *Information* | Private <-----> Public |
| *Genre* | Entertainment <-----> Work |
| *Connection* | Autonomy <-----> Net-based |
| *Security* | Low <-----> High |

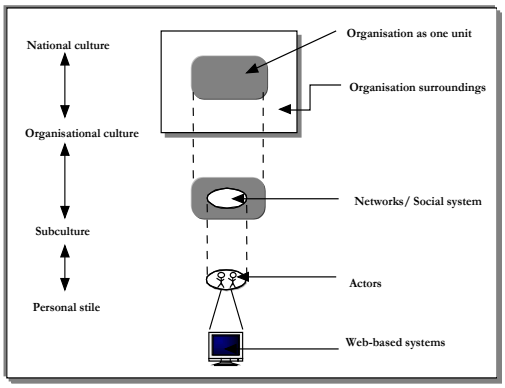
*Model 2:* A framework of Interaction Patterns (Rosander & Hoffmann 2001).

**7.2 Influences of the Organisational Culture**

The authors propose that theories on communication and organisational culture (e.g. Mumby 1988; Orlikowski 1995; Schein 1992) may help identifying potential communicative and cultural boundaries in a discussion of the perspectives when having human-to-human interaction through a WIS. This would lead to suggest either a change of the corporate culture or, perhaps more preferably, to design WIS that fit the particular culture.

Discussing possibilities for technology to support mobility in collaboration, Heath and Luff (1998) suggest that the emergence of new communication technologies could provide the relevant support for flexible organisational forms, while not questioning the diversity in working either as an academic, journalist, surveyor, inspector or web-consultant. The practical consequences of using certain technology should be explored, as they also are affecting co-operational patterns and the possibilities for seamless communication between the actors.

By way of introducing how the organisation could be seen and understood in a broader cultural perspective, an illustration of the organisation and cultural boundaries (illustrated in model 3) is presented. The schematically reflections on the cultural boundaries between the network or social system and the surroundings can be used for general considerations. For the purpose of this paper it will be presented through the specific observations from the Web-company study.




*Model 3:* An overview of the organisation and cultural boundaries (Rosander & Hoffmann 2001).

The model illustrates a simplified abstraction. Naturally any given organisation should, as point of departure, be conceived as being unique, and bearing upon the historical background for its establishing. But, also aspects such as the national location, size and ownership have significant influence on the culture of a specific organisation. Hence, the left axis in the model has a span from national culture to personal stile. The reason for regarding especially the national factor as significant is, that different norms exist in different part of the world in regard to staff participation and considerations for the single employee's attitude, for instance towards changes in the work practice routines.

There can be several ways, in which a requirement for changes arises in an organisation; it can be motivated by outside forces such as technological processes of development, governmental authorities or changes in demands from the market. But, the requirement could also come from within the organisation, where the employees articulated a need for innovation. In the study of the Web-company there was a combination of external and internal factors, that instantiated the requirements for improvement in the communication infrastructure. In addition to the technological developments in Web-based system supporting the consultants working in a distributed organisation, the customers were frequently changing their demands with regard to requesting more detailed reporting of the products and the development process, which already carried a heavy part of the costs. The internal requirement for having a shared workspace was articulated by several of the employees. They used different terminology, but for instance one of the key account consultant identified *"a need for a shared project room"*.

Returning to model 3, the hypothesis that the implementation of a technological solution has to be seen and understood in a broader cultural perspective, will be discussed in the following. When interviewing the more creative staff they said candidly, that they would never use any kind of formal method or storage facility. Even though sharing of important design decisions through e-mail, different LAN drives or papers were formulated as a potential problem, the cultural bias against formalisation continued to prevail. This attitude was common amongst the creative consultants, with the longest employment and experience, and enjoyed the highest formal as well as informal esteem. When facing employees, who are unwilling to change their work practice, the prosperity of a shared WIS is impossible to predict. Can employees' engagement be the main boundary to overcome for a successful technological implementation, which supports changes in the work practice including enhanced mobility?

In the organisation two quite different communities of practice were identified. One very improvisational and creative community represented by the art directors and graphical designers, and another more logical and structured one represented by the technicians and economist. The different perspectives on how to commanding a work practice are almost totally incompatible in the company, which has attracted highly qualified, educated and creative employees, as well as offering a specific lifestyle and work environment, supporting autonomy, responsibility and fastness. Working in a 'Fast company' is not synonymous with having a work force with a preference for being fast and flexible towards internal changes.

## 9. CONCLUSIONS

As pointed out by Lyytinen and Yoo (2001), both the development and use of nomadic computing are socially constructed and embedded, and therefore analyses of its use and design must be placed in a social context. Here the authors have tried to connect contemporary theories about mobility with the empirical findings from the case study at the Web-company. Our conclusions are that it is a fast-growing phenomenon, which will considerably change the terms and developments in co-operative work. Further, that the organisational culture will have deep impact on how the technology features are accepted and incorporated in the work practice and co-operational patterns.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