

## INTRODUCTION

### Chapter 1: Spaces, places and communities of practice

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#### INTRODUCTION

In profound societal transitions changes in work, employment and occupational structures have been an expression and indicator of systemic change. In the present stage, which has been described with a number of phrases such as the emergence of an information society, knowledge society or network society, we can observe substantial changes in work and labour organisation as well as in organisational forms that structure work processes in new ways.

The increase of service jobs and decrease of manufacturing jobs has been a thoroughgoing tendency in advanced countries during the last few decades, with different speed in different countries (Castells 1996: 215; World employment report 2001: 5, 109). The development path is clear but the interpretation of the kind of change behind the numbers is more ambiguous. Manufacturing jobs and service jobs as statistical categories have become uninformative. The diversity of activities in the service jobs category has expanded and the dividing line between manufacturing and service jobs has become more diffuse. Special attention in the development trends has been paid to the increase of the information content of work and even a special statistical category “information occupations” has been suggested (Porat 1998). The interest in the information content of work has been based on the notion in social theories that ongoing development is characterised by accelerating informatisation of all spheres of social life and the increasing importance of the ability to use and generate knowledge both in production and in society at large.

The desire to capture the dominant trend of development via the identification of information occupations and their share of wage employment has run into a definition problem: what to include and what to leave out. Also the discussion around the term “knowledge worker” has suffered from the same problem, even though the scope of the concept is more confined, referring mainly to expert tasks which require creativity and innovativeness (Alvesson 2001; Blackler 1995; Blom et al 2001; Cortada 1998; Davenport and Prussak 1998). The main difficulty in the definition has been the lack of knowledge on the real work contents and work contexts. This lack of an empirical basis has also prevented tackling seriously the core question, what information or what knowledge counts as a definition criterion, a question that can only be answered in relation to the process of doing work activities.

This book focuses on doing and being at work. To such an aim important information about doing and being at work includes, besides occupational positions, also types of employment contracts, organisational forms in which work takes place, and the role of technology. All these conditions have undergone substantial transformations during recent years. Statistics from the OECD countries and the European Union have shown an increasing tendency toward an increase in the proportion of temporary and part-time workers (World employment report 2001: 17). These indications belong to the picture of

the reduction of security and predictability of employment relationships. There are also signs of individualisation of work, which has been pushed forward by management practices through which management tries to reduce long-term employment relationships and which have resulted in a decrease in employees' loyalty to an organisation. Instead of increasing this loyalty, they have produced greater attachment to personal careers (Cappelli 1999: 1-2; Carnoy 2000: 3-5).

Flexibility is nowadays the guiding principle in business strategies in the striving to adapt to market conditions. Part-time and temporary work and other new types of employment contracts provide labour flexibility, while new organisational forms provide flexibility in work processes. The need for tightening cooperation in rapidly changing situations has resulted in new organisational forms, from team and project organisations to virtual organisations which cross traditional boundaries of organisational structures. The integration of production processes has been supported by information and communication technologies, which have helped to cope with information flows and to overcome constraints related to time and space.

In writings on information or the knowledge society, much emphasis has been placed on the role of information or knowledge in society. Castells (1996: 17, 21) has used the concept "informational paradigm" to stress not only the important role of information and knowledge but the emergence of "social organisation in which information generation, processing and transmission become the fundamental sources of productivity and power because of new technological conditions emerging in this historical period". The informational paradigm opens up visions and challenges for alternative ways of organising work processes. The positive perspectives in the visions are still far from realisation in the actual forms of flexibility.

The book presents cases from traditional and new types of organisations and organisational settings which give a view on manufacturing and service jobs, IT-expertise, project work and telework. New information and communication technology plays an important but different role in each of the cases. In some cases, the technology is a prerequisite for the very form of the activities, in some others it is an element which gives new possibilities for the organisation of the work process.

Cornfield et al (2001, ix-x) have argued that workplace and workplace community give a contradictory starting point for social scientific studies due to transformations in employment relationships and work arrangements. This book focuses, instead, on spaces. The increase in the intensity of connections between economic actors and demands of complex ways of using knowledge at every level of work organisation have transformed networks and relations between actors, giving rise to new kinds of social and cultural spaces. The book approaches the spaces through an agency perspective, which in its broadest sense generates the question whether the actor has an influence on the events around himself/herself and what kind of influence. The book asks: How is it possible to create spaces that satisfy multifaceted knowledge needs in working life? How is it possible to create spaces that increase rather than restrict human agency at work? What is the role of technology in these new working spaces? How are spaces and communities of practice related? What do the changes mean for changing forms of competencies? And what kinds of impacts do the changes have on individual selves, identities and gender orders?

The cases come from Finland, a country with a Nordic-type welfare state and a highly advanced technological infrastructure. Through the cases it is possible to read expressions of an informational paradigm in doing and being at work.

## **INFORMATION SOCIETY**

For the writers of the book, the discussion around the "information society" has been one context in which the case experiences have been reflected on. In contrast to a large number of macro-level writings, this book focuses on local practices. The information society discussion has dealt with the increase of information in different fields of society, flows of information, the connectedness of actors in different parts of the world, the shrinking of time and space, changes of production and occupational structures and the role of information and communication technology in shaping practices and processes in society. These are questions which this book also touches on, in the specified context of working life, and as seen through the eyes of the multiple actors of working life.

Discussion on the information society has taken place in two waves. Daniel Bell's (1973) epochal book "The Coming of Post-industrial Society" paved the way for the first wave in the 1970s. Both concepts of the information society and knowledge society (Drucker 1969) were in use in the discussion, which forecasted a move from the production of goods towards the production of services, and resulting changes in occupational structures; forecasted the rise of the information economy and the increased role of knowledge as the competitive edge; and touched also upon questions of technology and the global order of the economy. The second wave of discussion starting in the 1990s has been backed by governments' and international organisations' increased interest in the potential of the information society. The idea of the information society has become part of the strategic thinking around development in the industrialised countries, as reflected in the strategy documents in the US, e.g., in the "National information infrastructure programme" (NII) 1993, in the EU "White paper on growth, competitiveness and employment" (1993), and related documents in many other countries, which serve as examples of this line of thinking.

It is characteristic for the present-day discussion on the information society that it includes a mixture of political talk, utopian talk and talk by social scientists. Politicians' interest in the information society has guaranteed wide publicity for the discussion. Utopian discussion has given wing to visionary speculations in a variety of forums. Especially the role of technology in future developments arouses passions, with Alvin Toffler (1980) and Masuda (1980) as oft-cited authorities. Among social scientists, there have been reservations whether the concept of the information society (or knowledge society) is a valid expression. Webster (1995), for example, has distinguished analytically five definitions of the information society which proponents of the idea have used. Developments diverging from the criteria embedded in the definitions do not convince Webster that the status of information society has been attained.

The most often used definition of the information society is based on technological development. It is a plain fact that the application of information technologies has spread to virtually all fields of society and especially the convergence and imbrication of telecommunications and computing has opened the channel for links within and between offices, banks, homes, shops, factories and schools. The question which Webster poses

is, how much IT is required in order to identify an information society. He has not found any satisfactory answer in those writings which use a technological definition.

Another popular definition of the information society looks at the share of the information sector of the whole economic activity of a country. Webster's scepticism towards this kind of information economy claim comes mainly from measurement problems. How to categorize informational and non-informational domains? Which economically assessed characteristics are more central to the emergence of an information society? These are questions which according to Webster have not been answered adequately yet but which need to be settled if we are to arrive at reliable conclusions about the predominance of the information sector.

Another perspective used to look at economic activities has been to examine occupational change. According to this definition we have attained an information society when the predominance of occupations is found in information work. This definition runs into parallel problems as those found in the studies focusing on distinguishing between the information sector and other economic functions.

The spatial definition of the information society places major emphasis on the information networks that connect locations and have substantial effects on the organization of time and space. Webster agrees that information networks are an important feature of contemporary societies but challenges commentators to specify why information networks, on which there has been a long-term dependency, comprise a qualifying feature for a new type of society just now.

As the fifth type of definition, Webster mentions the cultural characterisation of our everyday lives. From a cultural perspective it is easy to see the media-saturated environment in which we live, as well as the expansion of the informational content of everyday life and social intercourse. As compared to the four other definitions, this conception of the information society is least measured and the lack of agreed-upon criteria limits the persuasiveness of the arguments.

Behind the different perspectives on the information society, the overarching theme in the writings is the emphasis on the key importance of information to the modern world. Of course knowledge and information have played an important role in all societies. Subscribers to the notion of information society claim, however, that the significance of information differs from that in hitherto existing societies. Castells (1998: 338-9) presents this argument by saying that in the information mode of development, both culture and technology depend on the ability of knowledge and information to act upon knowledge and information, in a recurrent network of globally connected exchanges. In explaining this assertion (1996: 17) he says that informationalism is oriented towards technological development, that is, towards the accumulation of knowledge and towards higher levels of complexity in information processing. Considering the salient role of information in the present era, Lash (2002: 2) suggests focusing on the primary qualities of information itself, on flow, disembeddedness, spatial compression, temporal compression and real time relations when trying to understand the information society. Lash argues that the term "information society" is preferable, for example, to postmodernism just because the former says what the society's principle is.

Finland provides a special context in which to study issues related to the information society. On a number of measures Finland is in the forefront of the development of an information society. Quoting Castells (2000: 72): "The Finns have quietly established themselves as the first true information society, with one website per person, internet access in 100 per cent of schools, a computer literacy campaign for adults, the largest diffusion of computer power and mobile telephony in the world, and a globally competitive information technology industry, spearheaded by Nokia".

In international comparisons new information technology applications such as Internet use and the spread of mobile phones are often cited measures. On such lists Finland and other Nordic countries are at the top (World employment report 2001: 335-49). The true significance of Finland's experiences in the information society context is not, however, simply based on the extent to which certain types of technology are used. More interesting is the development path that has resulted, among other things, in the advanced technological infrastructure, which is concretely visible in the statistical figures. The development of Finland up to the present stage of "information society" has taken shape as a consequence of several interacting factors. Both long-term and short-term processes can be found behind the development, such as transformations in industrial structure, technology policy, labour market relations, and cultural traditions in the face of crises (cf. Kasvio 2000).

Finland is a small and open economy and developments in the global economy are strongly felt in the whole society. A recent experience from the beginning of the 1990s provides a good example: the consequences of the worldwide economic depression were exaggerated in Finland by the simultaneous collapse of the former Soviet Union. As a neighbouring country, Finland had extensive bilateral trade with the Soviet Union. When the trade suddenly reduced to a fraction of the former level, Finnish companies were forced to find new markets for their products. This new challenge hit especially some labour-intensive branches severely (e.g. the textile and clothing industry, the construction industry). The unemployment rate rose in a short time from 3 per cent to about 20 per cent. The depth of the economic depression was a national crisis, which demanded a wide consensus in seeking paths leading out of it. The labour market bargaining system with the government involvement in the frame-negotiations ensured that also the labour market parties shared the crisis consciousness. Putting it in broad terms, the solution was twofold; to develop the industrial structure and related infrastructure and to save the Nordic-type welfare state.

The Finnish economy has traditionally been heavily dependent on the country's rich wood resources and wood-related industry. The Finnish paper industry, for example, has been and continues to be a big player on a global scale. The industrial structure, however, changed substantially in the 1990s. Now the wood and paper industry is only one of the three major export sectors, the other two being electronics and other metal and engineering (Statistics Finland 2002). Electronics is the most spectacular success story in Finnish industrial activities. The growth is mainly based on mobile phones and other telecommunication equipment.

The successful orientation to the world market after the crisis was not just a lucky coincidence. It was preceded by a number of supportive actions. Developments in science, technology and innovation policy, in education policy and in R&D investments are noteworthy in this regard. Throughout the 1980s many discussions within the industry

raised the need to seek competitive advantage rather from knowledge intensity and technological development than from cost efficiency as such. The discussions concretised in the rapid increase of R&D investments. The science, technology and innovation policy shared the same objectives. Finland was the first country among the OECD countries which adopted a systemic approach on the policy by using the concept of a national innovation system as a framework (Ormala 1999). Other OECD countries have made similar kinds of efforts in adjusting their policy and in seeking an adequate role for the governments in facilitating and providing infrastructure (OECD 1997). On a pragmatic level it has meant an attempt to deal with all the elements that contribute to the generation, diffusion and application of new knowledge simultaneously within the same framework. The educational policy has been in a dialogic relationship to the national innovation policy and the educational system has been able to provide the competences that have been needed in the knowledge intensive high-growth areas.

Technological development as the factor which opens future prospects has wide support among the Finnish people (EVA 1999). National strategies for the information society in different countries have a strong technological element, especially related to advances in information and communication technologies. The same applies to Finland. In fact, the first strategy document (Suomi tietoyhteiskunnaksi 1995) was formulated by a committee that was originally commissioned to deal with technological concerns. After the publication of the US strategy and the start of the discussion in the European Union, the committee autonomously broadened its tasks. After this somehow adaptive start, the continuation has been active and dynamic. Different kinds of actors have been involved in the strategy work both on national and local levels and the significance of the strategies is widely acknowledged in the public discussion. In addition to the technological concerns, the discussion has moved more also towards social concerns.

Balancing between technological and social orientations is of major concern throughout the world on many levels and among different kinds of actors, including academics, industrialists and policy makers. As a challenge to the discussion, Kasvio (2000) thinks it would be worth it if, as a counterpoint to a market-driven transformation process which seems to have a tendency to divide citizens sharply into winners and losers, the benefits of an egalitarian social structure and democratic education would be considered. This kind of comparison is also in Castells' mind when he presents Finland as an example of an information society from which other countries might learn. The above quotation from Castells continues: "At the same time they have kept in place, with some fine-tuning, the welfare state." By this statement he refers to the fact that along with the plans and actions striving towards technological superiority, Finnish people have been committed to the welfare state and related values of social solidarity even during the years of economic crisis and under the pressures of substantial reduction in public expenditures. An information society strategy with an emphasis both on technology and the welfare state has become in the minds of Finnish people a kind of identity project which has an imprint of survival over difficulties but at the same time a strong orientation toward the future, as Castells and Himanen (2001) have analysed.

The book focuses on the daily life of organisations and their actors, taking macro-level policies and orientations as its contextual framework. Macro-level strategies and policies define conditions for agency, on the one hand, by providing the means and producing competencies for access to the technology and structures of the information society. (Wyatt et al 2000; Lash 1995: 182-3.) On the other hand, they also define conditions for

agency by shaping general orientations as to how surrounding circumstances can be influenced. The cases open a view to learning and problem-solving situations, which nowadays are often characterised as problems of knowledge management, and to challenges in providing the workforce with competences which to an increasing extent are social. The cases are both from traditional and new kinds of organisations, both of which continue to function in the "information society". The conditions for action to be described in the cases are specific to the organisational settings but the identities of the actors and their experiences of action competencies are rooted in the wider context.

## **SPACES**

Space is the research focus of many disciplines. It has become a major concern of social theory relatively recently due to the emergence of new forms and processes of cultural and social spaces. The questions that have been highlighted relate both to physical/material and social/cognitive/mental aspects of space. Teamwork, project-based work, telework and work crossing organisational boundaries locally or globally are examples from working life which have needed new kinds of thinking about how to organise relations of actors in ways which are most appropriate for the activities, what kind of material support is needed for the network of relations in work organisations and how people cope with the new social settings.

Manuel Castells (1996: 411-12) has introduced the concept "space of flows" as one of his key concepts in the analysis of societies in the information age. He argues that our society is constructed around flows: flows of capital, flows of information, flows of technology, flows of organisational interaction, flows of images, sounds and symbols. He thinks that flows are the expression of processes that dominate our economic, political and symbolic life. From this line of thinking follows his hypothesis of the emergence of a new kind of space, which supports these dominant processes in our societies. He defines the space of flows as "the material organisation of time-sharing social practices that work through flows". By time-sharing social practices he means that space brings together those social practices that are simultaneous in time. The definition aims to account also for material supports of simultaneity that do not rely on physical contiguity. In the information age such social practices are increasingly important.

The concept of space has multiple meanings. It has, for example, a different content in physics and geometry than in the field of sociocultural phenomena. Sorokin (1943: 122) argues that in order to be adequate, the concept of sociocultural space must be able to define the position of any sociocultural phenomenon among other sociocultural phenomena or in the sociocultural universe.

Castells (1996) derives his concept of space from the analysis of the informational mode of economic activities. According to him, transformations in time and space take place under the combined effect of the information technology paradigm and social forms and processes induced by the current process of historical change. Giddens, who has also been one of the influential promoters of the space theme in social theory, grounds his ideas concerning space on the comparison of premodern and modern societies. He has emphasized that notions of time and space have to be brought into the core concerns of social theory (Giddens 1989: 275). Giddens (1990) considers that the examination of recombinations of time and space, separation of time from place and space from place is

crucial to understanding the dynamism of modernity. According to Giddens, time and space refer to the contextualities of social interaction, or to the intermingling of presences and absences in the conduct of social life (1989: 276).

Characteristic to modernity has been the stretching of social relations across time and space, a process which Giddens calls time-space distancing. In pre-modern cultures time was linked with place, "when" was connected with "where". In addition, space and place largely coincided, since spatial dimensions of social life were dominated by localized activities. The emergence of the uniform dimension of "empty" time, separated from place/space, coincided, according to Giddens with the expansion of modernity. The advent of modernity also started increasingly to tear space away from place by fostering relations between "absent" others, locationally distant from situations of face-to-face interaction.

If Giddens' work is judged on the basis of its stimulation of the discussion on how to build time and space into theoretical thinking about the nature of social life and the social system, it has been thought-provoking both for advocates and critics. One critical comment, which is of special importance for the approach adopted in this book, is made by Gregory (1989: 187). He claims that Giddens' theory remains close to the analytics of spatial science and has little to say about senses of place and symbolic landscapes. Furthermore, he claims that Giddens is virtually silent about the "production of space".

Lefebvre (1998) has devoted his attention especially to the production of space. In everyday usage space is used in the meaning of specialized spaces; as well leisure, work and play as transportation are spoken of in spatial terms. Spatial disciplines like geography, architecture, urban planning and urban sociology each give their own definitions to space. Lefebvre has been unsatisfied with this splitting of knowledge and has instead striven for a unified theory of space, unified in the meaning that it encompasses physical, mental and social aspects of space. As an analytical tool he has suggested a conceptual triad, three moments of space, which he argues should be looked at simultaneously: perceived, conceived and lived spaces, or in spatial terms spatial practice, representations of space and representational spaces (or spaces of representation, a term suggested by Soja (1996) instead of the English translation "representational spaces").

Spatial practice is defined as producing a spatiality that "embraces production and reproduction and the particular locations and spatial sets characteristic of each social formation. Spatial practice ensures continuity and some degree of cohesion. In terms of social space, and of each member of a given society's relationship to that space, this cohesion implies guaranteed level of competence and a specific level of performance" (Lefebvre 1998: 33). Lefebvre goes on to argue that the "spatial practice of a society secretes that society's space; it propounds and presupposes it" (1998: 38). And further: "Spatial practice is that aspect of space which is empirically observable: it is observed, described, analysed on a wide range of levels, in architecture, in city planning, in the actual design of routes and localities, in the organisation of everyday life" (1998: 413).

A representation of space defines a "conceptualized space, the space of scientists, planners, urbanists, technocratic subdividers and social engineers, as of a certain type of artist with a scientific bent - all of whom identify what is lived and what is perceived with



what is conceived" (1998: 38). Representations of space are abstract but they also play a part in social and political practice (1998: 41).

Spaces of representation embody "complex symbolisms, sometimes coded, sometimes not". They are "linked to the clandestine or underground side of social life and also to art" (1998: 33). This is a space which is "directly lived through its associated images and symbols, and hence the space of inhabitants and users, but also of some artists, writers and philosophers, who describe and aspire to do no more than describe." (1998: 39). While Lefebvre described conceived space as dominant, lived space is dominated, and hence is passively experienced space, which the imagination seeks to change and appropriate. It overlays physical space, making symbolic use of its objects.

Lefebvre's approach takes as its starting point the realities of the present: the forward leap of productive forces, and the new technical and scientific capacity to transform natural space so radically that it threatens nature itself (1998: 65). His conceptual work is rooted in an analysis of the dynamic of social life as seen from the perspective of the contradiction-filled interplay between the development of the forces of production and the social relations that are organized around production, and their continued renewal. From this basis he follows through his striving to link historicity, sociality and spatiality in a strategically balanced way and from this basis comes also his hypothesis "every mode of production produces a space, its own space" (1998: 31, 46). In this expression space should be understood in the meaning of dominant space and not as a denial of particular, different kinds of spaces.

In bringing together separate fields of knowledge concerning physical, mental and social space, he introduces the concept "production of space", both as a theoretical concept and practical reality. For him (social) space is a (social) product (1998: 26) and the space thus produced serves as a tool of thought and action. He makes an assumption that spatial practice, representations of space and spaces of representation contribute in different ways to the production of space, each according to the society, or mode of production in question, and according to the historical period (1998: 46).

Lefebvre's call to look at the dimensions of the physical, mental and social, or perceived, conceived and lived, simultaneously is not easy to put into operational terms. Soja (1996) compares Lefebvre's solution to a musical composition, with a multiplicity of instruments and voices playing together at the same time (1996: 9); more specifically to a polyphonic fugue based on distinct themes which are harmonized through counterpoint and introduced over and over again in different ways through the use of various contrapuntal devices (1996: 58). In fact, Lefebvre uses the term "social space" in two different meanings, as Soja remarks. It is for him both a separable field distinguishable from physical and mental space and also an approximation of an all-encompassing mode of spatial thinking, a transcending composite of all space. Relations between the three moments of the perceived, the conceived and the lived are never simple or stable in Lefebvre's descriptions.

Soja has developed further Lefebvre's conceptual triad on space, making it more comprehensible on the empirical level and as a research strategy. Soja (1996) introduces a new term, "Thirdspace", in dealing with the problems of multifaceted inclusiveness and simultaneities of social space (1996: 58). According to him, the mainstream imagination has revolved primarily around a dual mode of thinking; one perspective fixed mainly on

the concrete materiality of spatial forms, on things that can be empirically mapped; and the second fixed on thoughtful representations of human spatiality in mental and cognitive forms. Soja (1996: 10) claims that these coincide more or less with Lefebvre's perceived and conceived spaces, with the first often thought of as "real" and the second as "imagined". Lived space, which according to Soja is the preference implied by Lefebvre (Lefebvre doesn't explicitly place any preferences between the three moments of space), as it is by Soja himself, has not received the attention it deserves in research practices. The definition given by Lefebvre of lived space (spaces of representation) "lived through images and symbols" might give a misleading interpretation if one forgets Lefebvre's characterisations of these as spaces as vitally filled with politics and ideology, with the real and imagined intertwined. Soja has taken the latter characterization as his main emphasis and stresses lived spaces as chosen spaces for struggle, liberation and emancipation (1996: 68), as spaces of resistance to the dominant order. His primary interest is in fully lived spaces, which are simultaneously real and imagined, actual and virtual, in the lifeworld of individual and collective experience and agency (Soja 2000: 11, 351). He calls his focus Thirdspace, since it gives, according to him, an alternative third perspective that draws upon the material and mental spaces of the traditional dualism but extends well beyond them in scope, substance and meaning (Soja 1996: 11).

While Castells talks about the construction of society around flows and Lefebvre poses the hypothesis "every mode of production produces its own space", Wise (1997) starts his book by talking about a variety of spaces. These differences in emphasis (space/spaces) are a natural consequence of the starting points of the writers. While Castells starts from the informational mode of economic activities and Lefebvre from the interplay between the development of forces of production and social relations, Wise takes as his starting point the notion of agency. From this episteme, social spaces seem open and permeable spaces, which are created through the interaction of multiple humans over time. Wise's understanding of agency is partly based on actor-network theory (1997: xv) which examines situations in terms of the social effectivity of actors. Both humans and non-humans shape our social life and both are considered in this episteme as actors. Wise defines social space as a network of relations between actors (1997: 70). Wise is especially interested in how technology and social space intertwine, interact and are mutually constitutive. In defining social space he states that "social space is not just discursive patterns of 'imaged', 'imagined' or symbolic communities...but neither is it only physical aggregates of individuals and constructed space... social space is the stratification of the two and can be described as a series of actor-networks...Social space always consists of Technology and Language in particular configurations. But it also means something in addition to this configuration. It also means the embodiment of that configuration." (1997: 70.) In Wise's usage Technology and Language refer to two kinds of agency; Technology refers to corporeal agency, the ability to achieve effects through physical contact and Language refers to incorporeal agency, the ability to achieve effects without corporeal means.

Wise argues that human social space is composed of the stratification of Technology and Language. Important questions to him are: what is the relationship between the two types of agency; what kinds of shifts occur between them in the surroundings of new technology; and what does it mean for human agency? In empirical investigations of social space, he considers Lefebvre's three perspectives on space to be valuable. Wise thinks that if social space is an actor-network, it would consist of practices that make it

up, renew it and transform it, as well as concepts of network itself and the representational experience of the network.

This book has been written in the spirit of the view that there is essential spatiality to social life. The book has been influenced in its spatial sensitivity by a number of writings on social space. Examples of time-space zoning given by Giddens show how to look at temporal and spatial organisation of daily practices and routines. Urry's (1985) analysis of spatial divisions of labour also gives illuminative examples how to conceptualize social relations with the understanding that such relations are both temporally and spatially structured in a number of ways. Castells has made visible the global ties between economic activities in the formation of spaces. Lefebvre's and Soja's work have shown routes to comprehend physical, mental and social aspects of space in a unified way. Wise has illustrated with his examples the intertwining of technology and social space. The cases in this book represent examples of such temporal and spatial organisation of activities which have gained importance in the development towards the information society (e.g. telework, crossing organisational boundaries, virtual organisation). Our interest is not, however, in spaces as such, as given arenas for social life, but rather in the lived world of actors in working life, with the approach of spatial sensitivity.

## **PLACES**

In spite of the emergence of new forms of spaces (e.g. virtual spaces, spaces of flows) people's living experiences are overwhelmingly place-based. Still, the separation of space from place has given new meanings both to space and place. Castells (1996) has differentiated between the space of flows and the space of places. For him, a place is a locale whose form, function and meaning are self-contained within the boundaries of physical contiguity (1996: 423). Castells emphasizes the differentiation between spaces of flow and spaces of place based on his hypothesis that function and power in our societies are organised in the space of flows (1996: 428). He thinks that the structural domination of its logic essentially alters the meaning and dynamic of places. He is concerned about the break between these two spatial logics, as a consequence of which experience, by being related to places, becomes abstracted from power, and meaning is increasingly separated from knowledge. Soja (1996: 215) sympathizes with Castells' political intent to mobilize the progressive political power of the space of places, but he rejects the dichotomized and totalizing conceptualization of the space of flows versus the space of places. Soja argues that there are examples of movements and practices that recombine abstract flows and concrete places and which are opening up new and different real-and-imagined spatialities of resistance and contention.

As an analysis of the tension between place-based and global activities, Castells' statements are insightful, but from the perspective of the lived world of actors we join in Soja's critique of the problems with the dichotomy. Wise (1997: 124) has defined the relationship between place and space by saying that space is a practiced place, a place with actors. This view doesn't draw a sharp distinction between place and space; according to it, activity actualizes potentialities of place and thus creates social space. This line of thinking is congruent with the approach of this book, in which the understanding of space includes also meanings attached to places.

## **ACTORS AND TECHNOLOGY**

Technology and presently especially information and communication technology are inseparably part of the changes that can be observed in employment structures, organisational forms and workplace activities. In order to understand these ongoing changes, we need to keep technology in mind. The difficulty, pointed out by Wise (1997) in analysing the role of ICT is that it seems to be everywhere and still it disappears out of sight and out of the analysis. Wise himself uses actor network theory (ANT) in order to take a stance on technology. Also this book utilises perspectives that the spatial interpretation of technology suggests for a research orientation.

ANT grew out of the academic field of studies of science, technology and society ( B. Latour, M. Callon and J. Law). It has inspired a large number of empirical studies which have illuminated goals, values, meanings, histories and social interests related to technology (Bijker et al 1987; Bijker and Law 1992). When ANT poses questions about technology it always does so in relation to empirically describable networks of actors. Actor networks, which are necessary for the functioning of societies and which are constantly established and reproduced, involve both human and non-human (among other things, technology) entities. The theory does not set out any a priori distinction between the human and non-human, or the social and technical in the construction and maintenance of networks. With that methodological orientation, the approach challenges both technological and social determinism.

Technological determinism in its strongest form presents technology as an autonomous force that determines social and cultural development. Social determinism stands in contrast to assumptions of technological determinism and presents technology itself as neutral and prone to social and political shaping. Even though such classifications of thought models are commonplace in polemic writings, it is easier to find a variety of interminglings than archetypal representatives of them. (e.g. Grint and Woolgar 1997; McLoughlin 1999.)

In contrast to approaches which struggle with the problem of dualism (technical or social) ANT follows strictly a symmetry principle. Callon (1986: 200) expresses it by saying: "The rule which we must respect is not to change registers when we move from the technical to the social aspects of the problem studied". The principle extends even to the definition of actors. Not only humans are actors but "any element which bends space around itself, makes other elements dependent upon itself and translates their will into a language of its own (Callon and Latour 1981: 286). Or in Moser's (1998) words: "Human actors are not always subjects and things are not always objects". The question of agency is looked at focusing on results and effects. The well-known example given by Latour (1988) is that of an automatic door-closer which regulates entering into the room. Through its functions it manages space by regulating movement and human behaviour in that space.

Definitions of actors and networks are tied to each other. The interest in the analysis is not in the actor per se but rather in the actor's relations with other actors in network building and maintenance. In this sense the actor and the network are two faces of the same phenomenon. ANT is a method to learn from the actors without imposing on them an a-priori definition of their world-building capacities (Latour 1999: 20).

The proponents of the approach have been concerned about the confusions which might arise nowadays when terms like world-wide-web, network organizations etc. are in common usage. In the ANT the choice of the term "network" was originally meant to capture the contingent and emergent form in contrast to such notions as institution, society and nation-state. ANT draws our attention to the manner in which networks are built rather than any given social and technical entities, which is often the case in the present-day discussion on networks.

The symmetry principle in relation to humans and non-humans as well as to micro- and macro actors has prompted several critical questions even though, on the other hand, its heuristic value is widely recognized. It has been asked, e.g., whether insistence upon a symmetry between humans and non-humans means conceding to technical determinist accounts (Collins and Yearley 1992). It has also been asked whether looking at micro- and macro-actors according to the symmetry principle would lead to ignorance of real differences in power (Wise 1997: 35). Callon's and Latour's (1992) response to this kind of critique is that their intention is not to prove symmetry but to use it as a methodological heuristic tool and to ask how and why asymmetries are established. ANT argues heavily against technological determinism, but Grint and Woolgar (1997) are not convinced whether it has been successful in overcoming a form of technicism. They see instances in the writings of the founders of the theory in which the capacity of technology is treated as given, objective and unproblematic. Grint and Woolgar call this kind of assumption technicism (1997: 31). They think that criticism of residual technicism gains particular strength from the presumption made by the ANT that the aim of the social analyses of technology is to provide a causal explanation of technological development. If the aim would be, instead of explanation, a redescription, Grint and Woolgar consider that the character of the network's components would be less pressing.

Star (1991), Wise (1997: 34) and Winner (1993) have criticized the ANT for its tendency to fall back into dominant structures of power. The focus on the activities of network-builders leaves marginalized people outside the analysis, as Leigh-Star has remarked, and the space that is described is, according to Wise, that of established power rather than the forms of resistance within that space. Winner (1993: 441) argues that the account of politics and society given by social scientists is implicitly conservative if it doesn't succeed in indicating which social groups have been sandbagged out of the laboratories and which social voices are being effectively silenced.

Much of the critique relates more to the limitations resulting from the specified case studies being influenced by the ANT than to the potentials of the general research method the ANT implies. Latour (1999: 20) has emphasized that ANT is a method, a way for social scientists to access sites, a way to travel from one spot to the next. This book utilizes the ANT as a methodological heuristic tool which has shown in concrete research practice how to treat humans and non-humans and micro- and macro-actors simultaneously on the same footing. Latour (1999: 22) has recently characterized the ANT as a theory of the space or fluids circulating in a non-modern situation. ANT analyses technology always in relation to other elements of the network. The spatial view of technology which follows from such methodology has influenced our understanding of social spaces in working life, where technology is essentially a part of the construction of spaces.

## **COMMUNITIES OF PRACTICE**

Changes in employment relationships and organisational forms influence the social setting of work in many ways. The increasing number of temporary work contracts, telework, the organisation of work as projects or working in networks with partners in distant workplaces, each break the customary boundaries of workplace communities. Questions of daily forms of social interaction and new forms of communication have been acute concerns in the context of new spaces created through information and communication technologies. Revival of the interest in "communities" has brought under review both questions of actual working in changing social situations and broader questions of the basis of identification when customary communities based on workplace and occupational groups are replaced by more diffuse communities.

Rheingold (1995: 6) asserts that people around the world have a hunger for communities, as more and more informal public spaces disappear from our real life. He talks about virtual communities, which according to him are "social aggregations that emerge from the Net when enough people carry on those public discussions long enough, with sufficient personal feelings, to form webs of personal relationships in cyberspace." (1995: 5) The word "community" is in this definition in a very different context than, for example, in the classical texts of sociology, such as Tönnies' "Gemeinschaft und Gesellschaft" and writings which have followed from his differentiation between the notions of community and society/association. Still, the underlying tone both in the classical writings and in the present-day discussion on virtual communities is the longing for social settings which bind people to meaningful social interaction and which are constitutive of their identities.

Jones (1995) has analysed new forms of community brought about by computer-mediated communication. He links new forms of communities to the potential of CMC for the production of social space. To him "CMC is, in essence, socially produced space" (1995: 17). To clarify this he defines (1995: 16) CMC as "not only structures of social relations, it is the space within which the relations occur and the tool that individuals use to enter that space". Jones remarks that in the history of community studies, space has been understood less as socially produced and more that which produces social relations. As an example of this he refers to Stacey's work, in which Stacey has identified the thread running through definitions of community in sociological studies. These include territory, social system and sense of belonging, territory being a boundary within which a community maintains the other two elements. Jones (1995: 23) is asking for a concomitant conceptualization of space and the social, an inquiry into the connections between social relations, spatial practice, values and beliefs.

Jones remarks that the spur for development is connection, linkage. But this connection is different from that interaction and togetherness which is predicated on the nostalgic ideals of communities. Jones leaves open the question whether or not the communities formed by way of CMC should be understood as communities. At least one can say that the concept of community is getting new content along with the development of new forms of connectedness and mutuality. In common usage, the meaning of the word "community" has shifted to a more symbolic direction, to refer to systems of social interaction, which to an increasing extent are based on a symbolic sense of belonging, as for example Lehtonen (1990: 242-3) points out.

Communities in working life do not change simply because of technology but rather because of new work demands and related organisational changes, technology being one medium in the organisational arrangements. In organisation studies the social setting of work is seen to be crucial for achieving the objectives of the organisation, and since the Hawthorne studies (Roethlisberger and Dickson 1949), the social setting has been viewed with the understanding that formal and informal organisations interact. Increased cooperation requirements crossing the customary functional fields and hierarchical levels within the organisations and moving boundaries between organisations, as well as increased emphasis on knowledge as the key resource, have brought questions of community to the fore in a new light.

Nonaka and Takeuchi (1995) and Nonaka and Konno (1998) have dealt with the problem of the social setting of interaction in the context of knowledge management. They use a Japanese word, "ba" to refer to the field of social interaction, or as they say, to the "shared space for emerging relationships" (1998: 40). According to them, the concept of ba unifies the physical space, the virtual space and the mental space. In their usage ba relates especially to knowledge creation, providing a platform for advancing individual and/or collective knowledge. The writers have described knowledge creation as a spiralling process of interactions between explicit and tacit knowledge. They differentiate four types of ba, which correspond to the four steps in the knowledge conversion process. Socialisation involves the sharing of tacit knowledge between individuals. Originating ba offers a platform for this stage. By originating ba the writers refer to the world where individuals share feelings, emotions, experiences and mental models. They think that this is the primary ba from which the knowledge creation process begins. Externalisation, which requires the expression of tacit knowledge and its translation into comprehensible forms, is the next stage in the knowledge conversion process. It is supported by interacting ba, which is more consciously constructed as compared to the originating ba. For example, project teams composed of the right mix of specific knowledge and cross-functional teams provide conditions for such dialogue, which helps to make tacit knowledge explicit. Combination involves the conversion of explicit knowledge into more complex sets of explicit knowledge. Cyber ba is a place of interaction in a virtual world and corresponds to the combination stage. The writers think that the combining of new explicit knowledge with existing information and knowledge is most efficiently supported in collaborative environments utilising information technology. Internalisation produces operational knowledge by converting explicit knowledge into the organisation's tacit knowledge. Exercising ba supports the internalisation process by providing real life or simulated situations for the use of explicit knowledge.

Tuomi (1999: 331) criticizes the model for ignoring the question, what is the motive for knowledge creation. Further he remarks that Nonaka and his collaborators have not discussed what the processes are that create the shared cognitive worlds, or ba's. He also sees problems in applying the model in situations where the spiral hits the boundaries of meaning creation space (1999: 328).

Wenger and Snyder (2000) approach the last problem in specified contexts with the concept of communities of practice. They overcome some of the problems in Nonaka's and his collaborators model by setting knowledge more clearly in relation to social practice. Wenger and Snyder ask how people share knowledge within and across organisations and how it would be possible to foster new ways of knowledge sharing and learning. Their answer is, through communities of practice, which are "groups of people

informally bound together by shared expertise and passion for a joint enterprise". The concept of communities of practice has been developed by Lave and Wenger (1991: 98) who define it in the following way: "A community of practice is a set of relations among persons, activity, and world, over time and in relation with other tangential and overlapping communities of practice. A community of practice is an intrinsic condition for the existence of knowledge, not least because it provides the interpretive support for making sense of its heritage."

Originally Lave and Wenger used the concept to study situated learning in different kinds of communities. That approach took communities as stable entities, the interest being in socialisation into a given cultural practice. Since Wenger (1998) and his colleagues shifted their interest also to the area of knowledge creation, the concept of communities of practice has taken on a more fluid and open content. Communities of practice are according to them fundamentally informal and self-organising. What differentiates them from other forms of informal networks is that they are entities especially for developing members' capabilities and for maintaining and producing social stocks of knowledge.

Tuomi has suggested a broader definition of communities of practice. He has been concerned with how to combine the processes of knowledge generation at the community level and the accountability that is needed for the organisational level distribution of work and responsibilities. This is a management dilemma that has also troubled Brown and Duguid (2000). In a practical organisational setting, teams approximate communities. In contrast to communities of practice as defined by Wenger and his colleagues, teams are usually set up by a decision-maker and they have specified goals. Tuomi (1999: 398-400) suggests extending the concept of a team to include a periphery that is not responsible for the goals of the team, and to expand the concept of community of practice so that teams can be community members, calling the new combination an "organisational community".

For the purposes of this book, Tuomi's suggestion makes sense. The book addresses questions of competence and identity. According to the understanding adopted in the book, these are questions which need to be dealt with in relation to communities. In organisational practices both formal and informal aspects are present in communities. Nonaka's and his collaborators' as well as Wenger's and his collaborators' work remind us of the fluid and dynamic nature of communities which we can meet in present-day organisations, and in spaces linking organisations. These communities provide a different basis for identification than more stable communities.

## **AN AGENCY PERSPECTIVE**

The ANT approach looks at the question of agency in terms of results and effects and gives a broad definition: both humans and non-humans shape our social life and can from that perspective be considered as actors. When the focus is especially on human agency, as in this book, we need to elaborate the concept further. Giddens summarises the core meaning of agency with two words, power and choice, which give a good starting point to approach empirically constraints and possibilities for action provided by working life. For Giddens (1984: 9, 14-15) agency concerns events of which an individual is the perpetrator firstly in the meaning that she/he could have acted also differently and secondly whatever happened would not have happened if that individual had not



intervened. The capability of the individual to “make a difference” in a pre-existing state of affairs or course of action means that she/he exercises some sort of power. Giddens speaks in this definition about an individual, but the properties, power and choice, apply as well to collective agency. Sociocultural and technological constraints and possibilities for action influence personal agency through self-processes. Central questions related to these processes are whether people believe in their capabilities to organise and execute the courses of action required to manage prospective situations (Bandura 1995) and whether people experience themselves as initiators of their own behaviour, being able to select desired outcomes and choose how to achieve them (Deci and Ryan 1987: 1025).

In this book, possibilities, choices and constraints on action are looked at through the lived world of the actors who in the book are blue and white-collar workers, experts and managers from different sectors and organisational settings. The methods used in the cases are interviews, action research and organisational ethnographies.

Part I introduces and provides examples of the creation of spaces. The chapters discuss the role of ICT experts as creators of spaces, possibilities to support local agency based on regional information society strategy and problems of WEB-mediated co-operation.

Tarja Tiainen's chapter analyses how ICT experts describe the process of creating technology. The subject of the study is ICT experts' views, since their work is to create information technology tools and services. Her chapter focuses on actors in technology creation: what kinds of human and non-human actors the ICT experts deal with and what kind of action space they ascribe to different actors. It is based on male and female ICT experts' interviews in which they shared their visions of the future. The interviewees were specialists, consultants, and managers in different areas of ICT. The interviewees' visions include several views on actors and action space. Contrasting views are those that follow the idea of technological determinism, in which people's action space is very limited, and those that see the shaping of technology as a complicated process in which human actors, organizations and technology are involved. The analysis of these alternative views of the creating of technology describes the shaping of human agency from ICT experts' point of view.

Marja Vehviläinen's chapter explores local agency in the information society. It starts from a concrete case of information society development in a peripheral region of Finland and the European Union, North Karelia. It looks at regional information society strategies, development projects run by the regional authorities, Nordic welfare state and other institutional agents, especially those related to women's information technologies, as well as the lived experience of the inhabitants. The North Karelian information society strategy aims to create space for the citizens in the information society. Many of the development projects, funded partly by the European Union and partly by national funds, aim to build facilities for the inhabitants to be active agents of the society, in their local and situated settings. The chapter discusses the construction of the social space of agency, with a special focus on gendering processes and the women inhabitants of the North Karelian information society. It examines the practices of the active agents, authorities, welfare state, institutions and inhabitants, and the network of North Karelian information society development. Further, it looks for the social and gendering orders of local agency in the information society on and across the borders of paid and voluntary work.

In Riitta Kuusinen's chapter, the stress is on an action research project related to a European programme on anticipating the form of working life in the future. The programme initiated a large number of projects with the expectation of generating co-operation between the projects. In addition, the projects had their own aims in their own organisations. The researcher was searching for a new action model for communication in virtual space within the framework of the EU programme and the guidelines of the ministries responsible for the concrete organisation of the programme. The process shows that the resultant virtual space was not enough for the creation of joint knowledge among the projects. The creation together of new practices for handling information and producing shared knowledge are difficult processes that need time and patience. What is needed is social support for the members of the group. This is possible only through the appropriate organisation of social action and joint action learning.

Part II examines how people meet demands in new or transforming spaces. The empirical cases cover high-tech professional knowledge work, service work, manufacturing plants that are facing effects of globalisation in their local context, and telework.

Sirpa Kolehmainen's chapter concentrates on work in newly developed and rapidly growing technology-based business services supporting the performance and success of the telecommunication industry. The focus is on organisation and patterns of work at the workplace level in firms supplying services that are knowledge-based and produced by professional experts. High-tech professional knowledge work is characterised by complex problem-solving based on both general and specific competence as well as analytical and social skills. While service products are usually tailored to the needs of clients, the service process calls for intensive interaction among the producer, possible co-producers and client. Thus, knowledge-intensive business service firms can often be called project organisations. This means that the work is arranged on a team basis along with the number of service projects. Individual workers usually participate in several projects at the same time, but their positions and tasks within the teams of each project might vary. Project-based work organisations challenge the traditional forms of work as well as traditional conceptions of working communities. This chapter discusses the mobile boundaries of horizontal and vertical divisions of labour and the construction of the social community within knowledge-intensive project organisations. It also examines the project-based work organisation from the standpoint of continuous maintenance and the development of the knowledge and competencies of an individual worker as well as insecurity of employment and working conditions.

In Päivi Korvajärvi's chapter the focus lies on the creation of social communities of work that is based on the attraction and pleasure of ICT in female-dominated work. The analysis and interpretation are based on an ethnographic follow-up study conducted in a call centre. The case study shows that both management and employees stress the importance of the social community of work, although very differently. Management emphasised a pleasant atmosphere in the firm. When recruiting new employees, management evaluated how the candidate could "as a human being" cope with the social community of work. The employees' point of view was different from this. The employees stressed the significance of the social community of work as a supportive resource in concrete work. The employees also stressed the visions that the ICT opened up for them. In addition, they found that, because of the ICT, they were a part of the larger process of change in working life that as such is exciting. This gave them pleasure and the option to commit to their job and to the firm. Thus the ICT represented a kind of symbolic umbrella for the

creation of the social community of work. Theoretically the chapter discusses how the emotional work required by the management and the commitment of the employees result in a social community of work. This acts as a resource both for managers and employees in different ways. For managers it is a resource in doing emotional work as a part of management and for employees it is a resource that constitutes pleasurable involvement in their work. More broadly, the aim is to develop a dialogue between the concepts of "emotional work" and "compliance" in relation to the use of advanced ICT in female-dominated work.

The focus in Riitta Lavikka's chapter is on female and male employees' internal mental processes in constructing the self in the emerging knowledge work of traditional manufacturing industry. The framework of the story comprises the structural changes at work that are created by the economic imperative of an information economy stressing individuality. Knowledge intensification of work with the demand for individual responsibility and commitment transform employees' ways of being at work. If the work becomes a means of fulfilling an individual's own personal needs for development, its positive meaning for employees grows. It might also intensify the work to the point of exhaustion. The chapter aims to show in the light of empirical research what effects this two-way pressure creates in employees' orientations in work and life. The analysis is based on ethnographic interviews of female and male employees representing different hierarchical groups (shop floor and office workers, middle management, management) and observations of work gathered in eight manufacturing plants in different fields of production. The data reveal what kinds of subjective orientations lie behind the 'long hours' work culture. Knowledge intensification at work is understood here as a broad and general trend describing changes in different aspects of working life connected to the growing importance of knowledge in the information economy. The importance of knowledge increases in all kinds of work, although the knowledge intensity of the jobs varies. The demand for individual responsibility and commitment, as well as the growth of social interaction at work intertwine with knowledge intensity. The analysis also questions the traditional understanding of the central collective concepts of sociology of work, which tend to become problematic in analysing the work orientation of employees in the information society. A new approach is needed that includes employees' processes in creating a new sense of self and new identities that are connected to changes at work, new know-how and the co-operative dynamic of production.

The focus in Riikka Kivimäki's chapter is on changing concrete practices in everyday life in the information society. The chapter analyses the meaning of working time and workplace in relation to the totality of life with interview data from teleworkers, mainly from new media occupations. Some of the interviewees work as teleworkers only part-time, some full-time. Within the totality of life, the spheres of working life and non-working life are not separate but linked together with many continuously reshaping ties. In the Fordist work organisation, working time and working place have not taken many alternative forms. Shifting boundaries in working time and place mean changes in the interconnection and relationship of the pieces of the everyday life puzzle in the information society. On the one hand, this gives people new options that vary a lot according to life situations; on the other hand, the disappearance of boundaries brings further problems. The relationship between family community and work community is in transition. Some new forms of communities can emerge in virtual networks. There can be challenges and possibilities in the new roles of women and men in family, work and networks.

The concluding discussion draws together experiences from the cases and reflects on them against the backdrop of the "information society" discussion. The underlying motive of the book-to analyse equal opportunities, agency and policy in an/the information society-, opens up some critical perspectives on the mainstream public discussion.