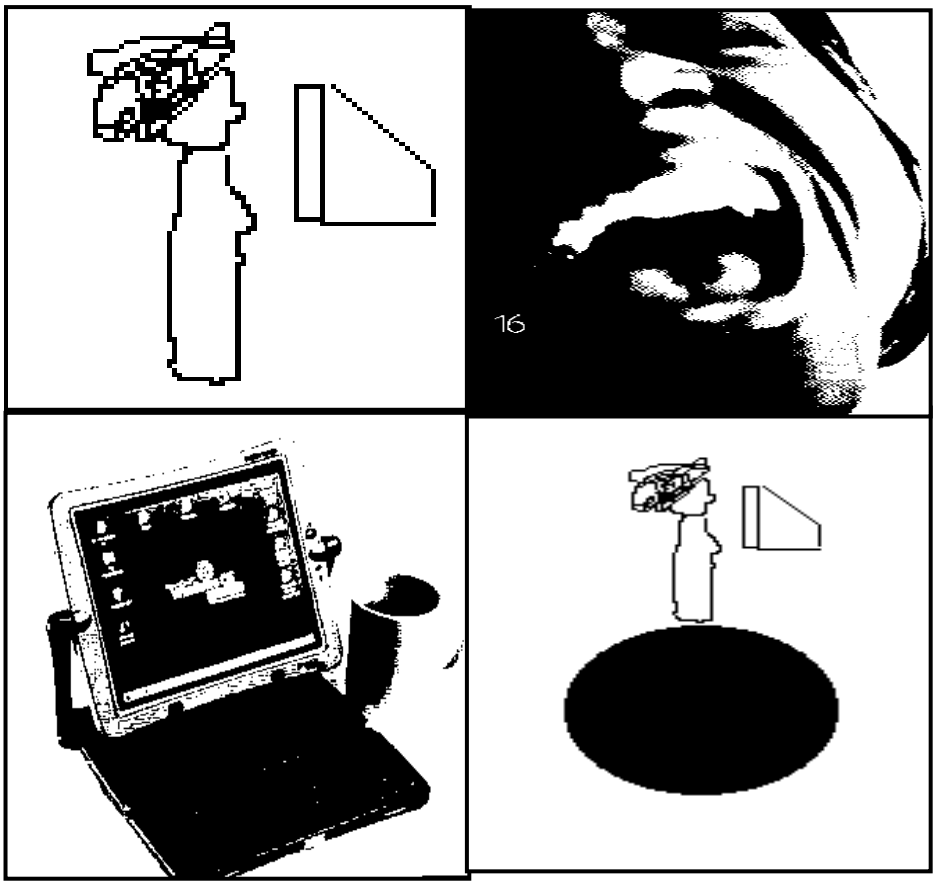
What the Net Can't Do

THE EVERYDAY PRACTICE OF INTERNET, GLOBALIZATION, AND MOBILITY



Trond Arne Undheim
Doctor Rerum Politicarum

Department of Sociology and Political Science
Norwegian University of Science and Technology
Faculty of Social Sciences and Technology Management

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This thesis is dedicated to my father, Johan Olav Undheim. He did not live to see it, but his memory prevails, and has been a great inspiration in my struggles to come to terms with life in all its facets. His stamina, good heart, teachings, and our many discussions have had a profound impact on my personal, professional, and public calling as an academic. By his example I am proud to be an intellectual spirit whose allegiance lies with the mindful, action-oriented, and purposeful engagement with scientific, political, and intercultural issues.

I also want to acknowledge the warm support I have always received from my beloved mother Anne Mari, my two exquisite sisters Kristin and Hanne, my very best friends, and not to forget my advisor Knut H. Sørensen, who has stood side by side with me these last three years. With these words, I thank everyone around me for creating an ambiance in which my endeavors have seemed reasonable, purposeful, and important.

Preface

I write these lines at a time where the world as we have known it for the last decade seems to be coming to an end. The September 11 terrorist attacks on the World Trade Center and the Pentagon are still fresh in my memory. There is immediate danger of further terrorist attacks worldwide, and US retaliations threaten to start a pan Arab conflict of unforeseeable proportions. It feels awkward to be writing about globalization, technology, and materiality under these conditions. It recasts the tensions between the global and the local, the social and the technical and the reality of the heterogeneous so irrevocably. It has been said that globalization is action-at-a-distance. Well, the consequences of all actions also have a local, humanitarian, material and spiritual side. But it may be precisely those hybrid tensions that make up our networks and societies.

It is the very ambition of this dissertation to provide a conceptual ground on which to base our understanding of global processes, flows, and fluids - through an analysis of changes in work and technology. I think it is important in these times to remember that community, in whatever form, is Janus-headed. On the one side, communities are a source of great strength, courage, and even wisdom. On the other side they provide the excuse for great terror, united as collectives only can become against oppressing powers, ideas, and actions. Not only will communities exist, but they are becoming slightly more hybrid, complex, and diffuse. Whether this is a sign of nomadic times, or of communitarian times is not for me to judge in definite terms. But I have attempted to rid the terrain of some simplified notions.

Then, some words on a more formal note. Both to ensure coherence in the dissertation, and because of the highly different audiences the five plus one articles in this collection is meant for, some repitition and overlap is bound to occur. I apologize on beforehand. Secondly, I believe there is a single, unifying argument running through this thesis: that of the returning socio-technical constituency of knowledge work. This means that the 'work setting' matters still under the conditions of globalization, even as mindsweeping social, cultural, political, technical and organizational changes are occurring.

As the title of the thesis indicates, a lot of discourse on global change has to do with the Internet, and how this generic technology is changing the world as we know it. Against this, in polemic opposition, but also with ironic undertones, I have called my thesis 'What the Net can't do'. Opposing the Net, as it were, but keeping in mind it is one of my principal worktools and has changed my own epistemic practices profoundly.

Trondheim, September 21 2001,

Trond Arne Undheim

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1. What the Net Can't Do

The everyday practice of Internet, globalization, and mobility[1]

Invitation

Modern society is characterized by a change in the relationship between people, things, and places; a process commonly named globalization. Strong supporters of this process claim we are witnessing time and space compression (Harvey, 1989). Whatever its characteristics, seems clear that mobility, in physical or virtual form, is prevalent. Social theory, however, is divided on the meaning of these changes. Some claim we are facing ubiquitous social space where everything and everyone stand in possible relations (Bauman, 1998; Beck, 2000; Castells, 1996, Giddens, 1991; Wellman et al., 1996). Others argue territoriality takes on a completely different, yet still strong meaning precisely because of these processes, combined with the strong cultural practices that surround our collectives, in short because of our *quintessentially social* nature (Sennet, 1998; Saxenian, 1994; Storper & Walker, 1989). But might it not be that mobility visions are factishes, hybrids of fact and fetish, real precisely because fabricated (Latour, 1999)? And, is the relationship between the technical and the social necessarily one of opposition? How can we understand hybrid relationships (material-spatial-technical-social)? The article suggests the need for the study of the joint process of *advertising* and *adoption* of new mobile technologies in advanced global organizations in the high tech field. The possible factish (Latour, 1999) of *nomadic knowledge work* creates the need for case studies from global organizations like Cisco, Telenor, and Telecom Italia. In fact, there might be an interesting interplay of *vision making* and everyday

[1] I want to express my gratitude to Professor Knut H. Sørensen at the Norwegian University of Science and Technology who has advised my thesis from 1997-2001, as well as to the Norwegian Research Council who made the project possible through their SKIKT program. This article also benefits from the comments of Professors John Urry, University of Lancaster as well as from discussions with Professor Karen Knorr-Cetina from University of Bielefeld, and with Professors Manuel Castells and Michael Burawoy at the University of California, Berkeley.

reality making when new Internet based mobile technologies arrive at the scene. This leads towards a theory of *pocketing society*, a theory of how society now believed to be portable, and easily dismissed as such, makes globalization become real in its consequences by ways of the everyday strategic practices of knowledge workers and Internet professionals. The article is a critical introduction to a set of empirical studies on what the Net can and cannot do, setting the scene for a new discourse on 'Information Society' and 'Knowledge Society' in social theory. As an additional benefit, the rise and fall of the so-called New Economy is explored. It so happened, that the thesis might survive the New Economy, even though some of its elements, including capital, was lost in the battle. The prize, of course, was little compared to the satisfaction of knowing how the reader now can benefit from this author's early mistakes, intermediate explorations, and concluding thoughts. Hereby be invited, and so it comes…

Introducing 'visionary' globalization

It is strange, nowadays, to be interested in society. While the pursuit of pop sociology is quite prevalent in all areas of science, in political discussion, and around café tables, society itself seems to be less trendy. When Margareth Thatcher said 'there is no such thing as society', this was not merely a historical coincidence. Her immediate concern was how 'society' becomes an abstract excuse for all sorts of phenomena. Today, many others are ready to throw society out of the discussion. It seems like society is out of fashion.

Short of society, the word of the day is information networks (Castells, 1996). Networks, 'deep and wide', as business visionary Kevin Kelly (1997) states. The New Economy is the world of intanglible, Internetted value chains where goodwill value, potential, and cyberspace markets provide a new economic and socal logic. In the midst of this phenomenon, even social scientists give up society altogether and describe the social, cultural, economic and technical as hybrids, networks, and flows (Castells, 1996; Lash & Urry, 1994; Featherstone & Lash, 1999; Sassen, 1994; Beck, 2000; Giddens, 1991).

In political visions, too, we are currently in a state of revolution. The American version was Al Gore's 'Information Superhighway'. His campaign proposed online connection in every home, business, laboratory, classroom, and library by 2015 (Cronberg, 1997:119). The

Bangemann report from the European Union also takes the point quite far. In the words of one of Bangemann's cabinet members:

> "A revolution is coming based on information […] Technological progress now enables us to process, store, retrieve, and communicate information regardless of the form it takes, and unconstrained by distance, time, and volume. This revolution adds huge new capacities to human intelligence and constitutes a resource which changes the way we produce, work, learn, and live together" (Niebel, 1997:61).

In Europe, 'Information Society' was reintroduced once they realized the technical ring of highway metaphors on a continent that had witnessed Hitler's road master plans. This had a number of consequences. As Bangemann (1995) noted, 'these innovations are changing societies as a whole … the way in which we live, learn, and work'. But despite the grandiose introduction, 'Information Society' often is used merely as a substitution for 'information infrastructure' (Kubicek & Dutton, 1997: 19).

But all of this brings us back to the tensions between social and technical aspects of the Net. What the Net can and cannot do is best explored in light of the traditional concept of society. Because, if we still bother to talk of 'society', we should think of relationships as social, not merely as economic, political, or religious. With MacIver (1931:6-9):

> "Society is the web of social relationships. […] It exists only where social beings conduct themselves, or 'behave' towards one another in ways determined by their recognition of one another. […] Society implies some sort of 'belonging together'. […] Society exists among those who resemble one another to some degree, in body and in mind, and who are near enough or intelligent enough to appreciate the fact. […] Man is dependent on society for something more than protection, comfort, nurture, education, equipment, opportunity, and the myriad definite services which it conveys. He has in him the yearning for society."

ICT is often taken-for-granted as a phenomenon, not a process. Instead of locating this discussion purely on a theoretical level, in the style of modernization theorists, or on an aggregated empirical level, as OECD and followers tend to do, it might be wise to look at the joint processes of adoption and adaptation of ICT, globalization, and mobility.

Cannot these be investigated both as visions and as situated work practices? The adoption of Internet technologies and the changing mobility patterns of people, things, and information is commonly viewed together as a process of globalization (Giddens, 1991). This process started sometime after the Second World War, and is still occurring. But what kind of a process is it?

It may well be that scholars, politicians, CEOs, corporations, and ordinary people are part of a process; some claim technology itself is a moving force. But how can technology take off on it's own? Is it not so that globalization itself might not have come about, was it not for the conscious visions, ideologies, and practices of politicians, IT-workers, and concerned economists? Because of this possibility, I will look at the globalization process in light of Latour's (1999) view that reality is real because it is fabricated, that reality is reality-made, or produced. Which, as it turns out, does not mean that it is less stable, credible, or trustworthy.

It is timely that when social science starts to rediscover identity (Giddens, 1991), marketing strategy also does (Aaker, 1996). As individuals start to question their own position and want to redefine their personal boundaries, artifacts are questioned as well. The case of ICT is even more prolific. The ICT industry is selling a chance to take part in the core business of our society - communication and information. The very identity of society is their product, so to speak. No wonder, then, that a brand has to be carefully treated, almost like a human being, with its core values and its extended, surrounding values (Aaker, 1996). Advertising has come to occupy great space in our symbolical imaginaries, as well as in our practices. Brand names have become household names, and we might know more about the identity of strangers than we ever did, just by considering the signaling of their attire. We use these intuitive judgements to organize our daily life, to plan 'serendipitous' encounters with people we seem to have a brand likeness with, and to strategically shape our workday. Indeed, Klein (1998) claims brands have become ubiquitous, they are 'collective hallucinations'. But how exactly does this process unfold?

Advertising, as a collective practice, is not only a cultural phenomenon. Rather, it cuts across domains. The corporations themselves also begin to exhibit identity, or at least try to. Thus, when IBM boosts 'Solutions for a small planet', we forget their claim that the planet is small, or generally is getting smaller, and read 'IBM is making the planet smaller through its excellent technology'. Even more extreme,

in their mission statement and advertising for 2000, Cisco Systems Inc. promise they are 'Changing the way the world lives, works, plays, and learns'. But what this means is not only that we are influenced by brands. Rather, we might embody, personify, and practice branding as a way of life. I will explore this notion and its situated meanings in the paper *The Visionary Practice of Globalization*. When corporations appear as living-like entities, the distinctions between people, places, encounters, knowledges, and institutions all become blurry. This notion is supported by scholars who see organizations more like heterogeneous orderings (Law, 1994) and ecologies (Brown & Duguid, 2000). More on that in *Visionary Managers and Silent Engineers.*

It is well known that advertising produces a make-believe reality, a society yet-to-come that might never come, a figurative dream world. What we seldom think about is how most phenomena in the world have this same fiction-like character. Latour claims factishes are real because they are fabricated, and he points to the power of the sound fabrications that constitute our reality. Modernism is one such factish, and within it, it contains many smaller factishes.

According to Latour (1999), if you say that 'God' does not exist you are trying to impose a 'polemical state of relations' upon people you, by this way of thinking, label 'believers'. The modern critic then is the only one who believes. "It is the critical thinker who invents the notion of belief and manipulation and projects this notion upon a situation in which the fetish plays an entirely different role" (Latour, 1999:270). What happens, in fact, is that the modernist takes the attitude of an iconoclast, trying to destroy the power of the image by empowering it with a magical strength its adherents do not rely on themselves. Instead, the discipline of science studies takes the daily practice into consideration, not only the social constructions, but also the joint fabrication of human and non-human artifacts. Facts, in this non-modernist sense, are neither real nor fabricated, but escape this choice. Where much energy has been spent trying to overcome the subject-object dichotomy, the non-modernist stance is that the subject and object are polemical entities, have different 'interests' (to the degree that we can bestow objects with interests),[2] and finally, subjects and objects play different parts in worldly practice.

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[2] For a discussion of this, see the Langdon Winner's (1980) article "Do artifacts have politics?", *Daedelus*, 109, 121-36.

The question I started with three years ago was this: just how important are the images, the forces, and the rhetoric of advertising to our understanding of technology practices? My travel into the worlds of advertisers, telecom firms, high tech knowledge workers, and business managers and CEOs started there, with advertising itself. From the outside, it looked like the medium itself had some kind of compelling force. This fear might also have been imposed by the literature I consulted initially; the symbolically sensitive cultural studies tradition (Goldman, 1992).

But going back to the way my wonderings about these issues started to emerge, the basic ideas were the following: Firstly, the marketing of ICT states you can 'work anyplace, anytime'. To what degree are these visions practiced in today's high tech organizations? How are these visions made? Do engineers or managers take part in it? What role does branding (Aaker, 1996) play? Secondly, the emphasis on technology and Internet in the workplace must mean something. Does it mean that ICT is fundamental to work? In what way can we say ICT changes work-practices? Thirdly, theorists also speak of technology and networks. Technology visionaries, certainly, but also social theorists seem to agree that the Internet has had a profound impact on society (most prominently represented by Castells, 1996). Is this view pervasive in the social science community? Fourthly, the image of the 'nomad' from advertising also seems to show up in the literature. What is the relationship here? Fifthly, the evocation of Internet is often followed by a discourse on information and knowledge. Thinking about how work is affected by all of this, the notions of virtual work and knowledge work become problematic. What kinds of work are these, are they fundamentally different?

At first, I thought it might suffice to study the layers in-between, that is the mediation of technological visions by advertisers, possibly with a brief study of the firms through which the visions were born. But, after the realization that high tech firms also produced their own visions without the advertisers and actually might not relate directly to the visions of their own advertisers, I decided to get closer to the actual high tech firms and their work-practices. This was an early suspicion that was not so visible in the US literature on corporate cultures. This decision meant to start questioning the uptake of visions, rather than, or in

addition to, the filtering and mediation process itself. It seemed important to take a critical look at how the 'specialized' public (the knowledge workers) saw the process they were somehow involved in making. This new focus also resonnated with some research at my own department documenting the domestication of technology (Lie & Sørensen, 1996). Quite quickly, I adopted the view that advanced high tech workers might also be said to domesticate stuff, and that this notion was not restrained to the household itself (Brosveet & Sørensen, 2000).

Since I am not altogether a friendly figure, I sympathize with my academic bedfellows in the technology studies community (Callon, 1987; Latour, 1999; Pinch & Bijker, 1987) who look for a good fight, for negotiations, struggles, and strategies when they explore the actor-networks and social settings before them. It is through confrontation that results arize. Thus, it might fit well with this belief that I quite early began to question the 'seduction' of advertising, thinking there must be more behind, more meaning, more subtlety, and more pragmatic decisions among those watching, living, and fighting it. Thus, quite clearly, I do not accept the notion that we amuse or seduce ourselves to death (Postman, 1985).

Introducing the frame of 'globalization' to the discussion on ICT, visions, mobility, advertising, and organizational knowledge and culture is dangerous. It could bring about further problems of scope and introduces the problem of micro/macro structures of analysis. The shorthand answer to this challenge is that the problem is not so large after all, since I accept Knorr-Cetina's (1981) argument of the microfoundations of macroprocesses. Then, there's the issue that with theorists like Castells (1996) you really have no choice but to speak with big letters since their claims are so broad and far ranging. But in the end, most of the individual papers have handled the discussion on a more comfortable level of generality. I prefer to talk about work-practices rather than societies, even though a good part of my work goes to show that society and collective themselves are legitimate categories. And, like all good intentions, they are not what happen. So, towards the end, you will find musings towards a more general theory of place-making; a theory which, incidentally, seeks to replace the mainstream view of globalization. More on that later, but beware!

In the following discussion I will present (and criticize) theoretical perspectives from the sociology of space paradigm of globalization. I will look at their perspective on globalization, their view on social phenomena, on Internet, and the different implications for the

advertising and interpretation of mobile work practices in the high tech work setting. I use a readily accepted preliminary definition of globalization as action-at-a-distance (Giddens, 1991). Then I will proceed with a short characterization of what I believe is the essence of the globalization debate, namely the space/place issue. Information society discourse and globalization discourse often takes a positive attitude towards the global. Here, global becomes a possibility for greater diffusion of innovations (Rogers, 1955) - technology, information, communication, or what have you - action-at-a-distance with deterministic consequences on the peripheries. Alternatively, there is the anti-globalist discourse that takes active demonstrative stances, recently demonstrated in Gothenburg, in Seattle, or in Davos. Movements like ATTAC claim WTO, the World Bank, the US, the EU, and the multinational corporations do not represent 'society' at large. Here, again, society is believed to be an entity with 'one' ecological, moral, and political voice.

As previously indicated, I take a third stance, that of the science and technology studies (STS). Here, technology is studied as artefact open to interpretations by 'relevant social groups' (Pinch & Bijker, 1987) where there is both reason to rejoice progress (if decided by collectives), as well as to embrace and explore ambiguities and voice fear (if decided by collectives). This ambivalent attitude is problematic to the dogmatic sociologists of globalization, as well as to ATTAC members. The main reason for this is their limited self-understanding. Contemporary perspectives on the polysemic practice of globalization reveal that situated understandings characterize most collectives.

By visionary globalization I intend the diffused, but everyday-like practice of *vision making*. This occurrs as business visionaries, academic scholars, trend analysts, and high tech knowledge workers consume their own teachings, visions, and products. At this stage, I conclude that the role of branding and marketing efforts by high tech companies has an unclear role in the production of visions. Thus, there is some reason to explore the work practices inherent in globalization. But the question becomes where to locate technology.

I will here give a glimpse from the empirical study that follows, and indicate how my six articles spell out different aspects of space/place. Concluding the work, I will sum up my findings, and provide a more systematic treatment of my contribution towards the sociology of *place making* and the *pocketing* of society occurring through the practice of globalization.

How to locate technology?

I have so far had a hard time trying to remind contemporary readers of the importance of society. One of the problems is the position of ICT, knowledge and mobility in these debates. To some, these are systemic attributes of our current state of events (Castells, 1996; Stehr, 1994). Thus, in Stehr (1994:16), we learn that the ground is prepared for an 'indeterminate' social configuration called *Knowledge Society*, namely because of the scientific impact of a differentiated society. Whether this type of society is rationalized (Habermas, 1984), virtualized (Rheingold, 1993), and disenchanted (Weber, 1967), or technical configurations still are endowed with rich symbolical meaning (Knorr-Cetina, 1999:248) will be a major topic for us.

Contemporary accounts of knowledge processes suggests that knowledge cannot still be thought of as institutionally separate epistemics, but is increasingly linking institutions, people, and things in such a way that it transcends boundaries of science, industry, and govermment. Not only is knowledge a social process, it provides a composite contextual interlinking of events, spaces and distances, at least in its most advanced form, the 'mode 2' (Nowotny, Scott & Gibbons, 2001). Others have emphasised how knowledge plays into business by ways of knowledge workers (Drücker, 1993) or 'symbolic analysts' (Reich, 1992). Knowledge processes are often though of as mobile, collaborative, customer-oriented (Frenkel et al., 1999).

Information and communication technologies (ICT) have an immediate appeal. No wonder, they play a strong part in the practice of globalization. Swiftly summarized in Dutton (1999:4):

"Most importantly, ICTs shape access to information [by changing what is available to you], people [by influencing who you meet, talk to, stay in touch with, work with and get to know], services [what we consume, and from whom], and technologies [mediate access to yet other technologies]."

That technological development has played a large role in our society is hardly worth denying. We are, undoubtedly, somewhat in the hands of our own technology. The question is how technology interacts with other processes that seem more familiar to us such as social processes of usage, identification, and domestication (Lie & Sørensen, 1996). Actually, the social shaping of technology might be more significant than the technological shaping of society (Williams & Edge, 1996:865). The contemporary debate about technology, however, tends to

bracket these terms. Major technological strongholds take solely the visionary view. The MIT versions are paradigmatic. In Dertouzos (1997:306):

> "The Information Marketplace will transform our society over the next century as significantly as the two industrial revolutions, establishing itself solidly and rightfully as the Third Revolution in modern human history. It is big, exciting, and awesome."

The problematic position of technology in our societies is not easily visible with the appeal of our current paradigmatic technology of information- and communication (ICT). How can you even begin to question such broad, mindblowing, and open technologies? Here, Donna Haraway's modification of the *cyborg* metaphor (1991) is timely. To Haraway, the cyborg provides an essential tension, and provokes a suffering ambivalence; both familiar and foreign at the same time. The cyborg is not only friendly and tamed, but has to be violently domesticated every day. It stirrs up in our reality, makes us aware of our own difference.

Mobility and the nomadic theme

While the cyborg, and by extension, cyberspace could be understood as ambivalent, so can mobility. When people move around, tension is created both at departure and arrival. Some travellers do not even go back and forth, their movements are constantly migratory. And it is here that the *nomad* enters the scene. It is Toffler (1970:75+92) who blows the horn:

> "Never in history has distance meant less. Never have man's relationships with place been more numerous, fragile, and temporary. […] Figuratively, we 'use up' places and dispose of them in much the same that we dispose of Kleenex or beer cans. […] We are witnessing a historic decline in the significance of place to human life. We are breeding a new race of nomads, and few suspect quite how massive, widespread, and significant their migrations are" (p.75). "Many people no longer stay in one place long enough to acquire distinctive regional or local characteristics […] Thus it might be said that commitments are shifting from place-related social structures (city, state, nation, or neighborhood) to those (corporation,

> profession, friendship network) that are themselves mobile, fluid, and, for all practical purposes, place-less (p.92)".

Feminists like Haraway (1991), Braidotti (1994, and Berg (1996) see the global as a possibility for liberatory cyborg discourse, nomadism, and digital feminism. Global, that is, because the feminist discourse now is free, critical, liberatory, and creative, yet grounded. The feminist globalization is nomadic, it is based on otherness, a perspective 'neither migrant nor exile'. In (Braidotti, 1994:33):

> "Being a nomad, living in transition, does not mean that one cannot or is unwilling to create those necessary stable and reassuring bases for identity that allow one to function in a community. Rather, nomadic consciousness consists in not taking any kind of identity as permanent. The nomad is only passing through"

But this does not mean the nomadic is a view from nowhere. Rather, "you must be located somewhere in order to make statements of general value. Nomadism, therefore, is not fluidity without borders, but rather an acute awareness of the nonfixity of boundaries. It is the intense desire to go on trespassing, transgressing" (Braidotti, 1994:36). This can only work if it is properly situated, securely anchored in the 'in-between-zones' (op.cit: 93). As an intellectual style, nomadism consists "not so much in being homeless, as in being capable of recreating your home everywhere" (Braidotti, 1994:16).

The latter brings us back to the sociology of the everyday (Silverstone, 2001) and domestication (Lie & Sørensen, 1996). There is no all-embracing 'we' in relation to computers (Lie, 1998). Rather, people have different experiences. They make technology their own through processes of appropriation, but also of critical distance (Lie & Sørensen, 1996). To some, computers remain 'foreign artifacts' and certainly do not neutralize or overshadow other experiences. It is wise to keep this in mind when we venture into a branch of sociology that seems to embrace both the technologies and the changes that seem to have come upon us.

But cyborg vision is also, of course, partly embodied. To Haraway, vision is still particular, and thus responsible. She argues *situated knowledges* are important because they resist reification (Braidotti, 1994:73), and I could add, are open to political interpretation. Feminist globalization theory is a reaction to the *clean* cybertarian thought and provides a critical thrust to notions of the familiar and the everyday. Thus, writes Berg (1996:1) in her book *Digital Feminism*: "My telephone is

digitalized but I still see my family and friends face to face". Technology, in this sense is both something you cannot but be within (as a cyborg), in need of domestication (making it familiar), and still located in the making of technosocial rooms, thus sometimes in-the-making. The 'everyday' is problematic, yet central to our discussions of ICT because we cannot presume to know what 'everyday' means to collectives without investigating this in detail (Silverstone, 2001).

Sociology is highly challenged by the social changes signalled by the increasing mobility of people, places, capital, and actions. The theorists who try to balance the new with the established modes of understanding retain a certain awareness of the tensions inherent in this new order. In the book *NowHere: Space, Time and Modernity* we read:

> "Social actors and social actions are embodied, which means that they always entail genuine engagement of concrete moments in time and particular points in space; people are always somewhere, things have to happen in particular places, objects exist in a spatiotemporal relation to each other, and so on…Modernity has, however, brought enormous and increasing changes in the tensions between the immediacy of here and now, our physical location in space and time, and the sorts of experiences, actions, events, and whole worlds in which we can partake at a distance. Our experience of here and now has increasingly lost its immediate spatiotemporal referents and has become tied to and contingent on actors and actions at a distance. The experiential here and now of modernity is thus in a sense nowhere yet everywhere…Presence and absence are therefore a fundamental tension of modernity" (Friedland & Boden, 1994:6).

While these qualifications are made, the same authors rely on Giddens (1991) in an exultation of time-space distanciation, which I will analyse in the following. Further into the argument, Friedland & Boden (1994:17) claim symbols are globalized:

> "The explosion in communications technology that has transformed the world into an increasingly unified marketplace also allows the same signs and symbols to transcend sovereign states. As markets globalize electronically and as the world economy becomes increasingly an exchange of signs rather than material goods, governments are less and less able to seal their borders. The development of the photograph, the telephone, the

> mimeograph, the photocopying machine, the tape recorder, and the fax, all essential tools of economic development, has simultaneously vitiated the attempt of states to control communication and hence to construct reality in centralized ways."

What this means is that all technology and symbols are transparent, have standard interpretations, and that they work to standardize cultural impressions. Exchanging material goods, we learn, is quite another thing. Signs are different, they travel freely, so to speak. Then, the road is short to Castells (1996:412) who claims:

> "…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. Flows are not just one element of the social organization: they are the expression of processes *dominating* our economic, political, and symbolic life."

The space of flows consists of three material layers: a circuit of electronic impulses (Internet), nodes and hubs (Silicon Valley), and the spatial organisation of the dominant, managerial elite continually unifying its symbolic environments (VIP lounges etc). The space of flows, then, refers to the "technological and organizational possibility of organizing the simultaneity of social practices without geographical contiguity" (Castells 2000:14).

Castells is among the 'extremists' in the space/place discussion. To him, materiality itself has largely lost meaning. And the most significant attempts to conceptualize ICT in terms of sociology are found among theorists, like Castells, that is the epitomes of the sociology of globalization. These theorists, policy-makers, and visionaries share the notion that social space has become ubiquitous. They analyze society as a moving cyborg-like entity half technology half human being. Their humanoid conception of society comes in many forms, and is argued from many differents camps. However, to our end, the theorists of globalization (Castells, 1996; Lash & Urry, 1994; Featherstone & Lash, 1999; Sassen, 1994; Beck, 2000; Giddens, 1991) and their extreme co-patriots the virtualists (Wellman et al., 1996; Rheingold, 1993; Turkle, 1999) will provide the most fruitful starting point. The theorists of this sort are both scared and fascinated by the prospect of globalization. Some, like Castells choose to think that the sheer capitalist logic has a civilized outlook, and will 'come together at last'. Raw capitalism can be

buffered with the clever use of networks, and will be. Others are more fatalistic. In Bauman (1998):

> "For everybody…'globalization' is the intractable fate of the world, an irreversible process; it is also a process which affects us all in the same measure and in the same way. We are all being 'globalized' - and being 'globalized' means much the same to all who 'globalized' are" (p.1). [The overall effect]…is the bifurcation and polarization of human experience". […] 'Being on the move' has a radically different, opposite sense for, respectively, those at the top and those at the bottom of the new hierarchy (p.4)". […] "The deepest meaning conveyed by the idea of globalization is that of the indeterminate, unruly, and self-propelled character of world affairs; the absence of a centre, of a controlling desk, of a board of directors, of a managerial office (p.59)."

The underlying assumption of this bag of writers is *ubiquitous social space*, which in essence is a 'strong programme' of globalization. Resting its argument on the discoupling of geography and social space, these theorists no longer equate space, place, and time dynamics (Beck, 2000; Castells, 1996; Giddens, 1991; Lash & Urry, 1994). In Beck (2000:104-105), we hear that: "World society means 'society' that is not territorially fixed, not integrated, not exclusive…[the local tie]…cancels the equation of spatial and social distance…Transnational coexistence means social proximity *in spite of* geographical distance - or, social distance *in spite of* geographical proximity".

Cogently, Castells (2000:13) states:

> "Our symbolic environment is, by and large, structured by this flexible, inclusive hypertext, in which many people surf every day. The virtuality of this text is in fact a fundamental dimension of reality, providing the symbols and icons from which we think and thus exist".

Castells is heavily influenced by media theorists to whom communication is the operative word. Everything in the world passes through the medium of communication, and the way in which this medium changes holds the key to understanding globalization. Thus, we live in a time of 'convergence', of 'non-communication', or even 'virtuality' (see virtual globalization). Famous contenters are Baudrillard, McLuhan, and Virilio. McLuhan famously argues that the medium has

become more important than its message, that the two fuse, and the message is the medium itself (1964). This way the medium transforms social relations and the psyche itself, but not necessarily in a bad way. However, to Baudrillard, to whom the symbolic element is at center stage of all social action, the media transforms social relations by getting rid of the symbolic, 'an act of exchange and a social relation' (Cubbit, 1999), essentially what Mauss (1954) calls 'the gift'. We loose speach to communication, reality to virtuality, as all communication signifies use of technology, and thus the loss of something 'original'. Essentially, what McLuhan points to, and Baudrillard fears, is oneway human relations where the sense of the importance of exchange is lost.

Virilio is even more pessimistic, and considers globalization 'the end of one entire world: the world of the particular and the localized" (Cubbit, 1999:130). His reasoning is that the sheer speed of communication now outdoes human perception because the distance which to Virilio is constitutive to human identity, the distance between the observer and the observed, is zero. Thus, we are overtaken by information warriors. Virilio concretely adresses war (one of his obsessions), which soon 'has no territory whatsoever' (Cubbit, 1999:132). Here, the distance, proximity, and presence are astounding features of modernization, and communication, at the extreme end, becomes the enemy. However, Virilio might not have got it right after all. Recent events, like the terrorist attack on World Trade Center and the Pentagon, might be quite forceful reminders of the ever-returning territoriality of horrendous actions. And, while many could watch the tragedy on CNN, BBC, and their national networks, technology does not reduce distance to zero, but still leaves the 'ground zero' experience to those affected directly. By extension, everyone in New York City, and even wider, the people of the United States, and the people of the world. But, most certainly, in that order of magnitude and impact.

To Giddens, however, globalization is essentially 'action at a distance' (Beck, Giddens & Lash, 1994:96). Modernity is a 'runaway world', with extreme dynamism, where the pace and scope of change, and the profound ways it affects pre-existing social practices are much faster than any other prior historical period (Giddens, 1991:16). The relationship between time and space is where the change is most visible, and with highest impact. According to Giddens we are now faced with 'time-and-space distanciation', an increasing separation of time and place. In earlier times, we coordinated these two through the mediating reality of place. Now we are able to coordinate advanced processes with

human beings being physically absent from each other. Giddens cites modern organizations as the example of such processes. The precise nature in which these changes takes place is through the "lifting out of social relations from local contexts and their rearticulation across indefinite tracts of time-space" (Giddens, 1991:18). His example here is what he calls abstract systems. Says Giddens:

> "Modernity globalizes, insofar as space is separated from place and reintegrated with the empty dimension of time. Globalization represents the formation of social ties of indefinite space-time spans, whose transforming properties are evident on an intentional as well as extensional basis" (Giddens, 1994:xii).

Giddens' view of the globalization of modernity stems from an analysis of the changing self-identity of moderns. We no longer have the control over our immediate reality, and are forced to trust external expert systems like the medical profession, metereologists, or police forces. Our only access-points are the mediators, the doctors we meet when a child is sick, the weathermen on TV, or the policemen on the street. To Giddens, this leads to a sequestration of experience where an instrumental relationship to nature takes away our proximity to 'natural' phenomena like the mentally ill, the sick, in short, all types of extremist behavior. Thus, we are reflexive modern beings (products of a self-referential modernity project) who no longer can be self-reflexive without self-denial. The disembedding of social relations by abstract systems (Giddens, 1991:209) together with the institutional reflexivity contributes to an interpenetration of the local and global. Says Giddens:

> "Modern social life is characterized by profound processes of the reorganization of time and space, coupled to the expansion of disembedding mechanisms - mechanisms which prise social relations free from the hold of specific locales, recombining them across wide time-space distances. The reorganization of time and space, plus the disembedding mechanisms, radicalize and globalize pre-established institutional traits of modernity; and they act to transform the content and nature of day-to-day social life" (Giddens, 1991:2).

While day-to-day life might be characterized by cultural complexity, it is quite another thing to dismantle traditional ways of understanding society and culture altogether. The way these changes are

felt and taken up is subtler than that. With Hannerz (1992:30-33), we can say:

"The media gives us more contemporaries [people whom we are aware of as living at the same time, about whom we make assumptions, and whom we may influence in some ways, although we never meet in person. […] The information society [suggests the value of giving special attention to] those groups who are most actively and systematically engaged in cultural growth…experts, professionals…intellectuals"

However, this might not mean society opens up. Rather, by making their type of expertise compulsory professionals might be more disabling than enabling (Illich, 1977:22). The assymetry of cultural flows, in fact, also shows in the tension between center and periphery, so dear to system theorists. Here, to some extent the peripheries talk back, in the proliferation of Reggae music, swamis and Latin American novels. Due to the intensity of knowledges, cultural institutions of flow, and diversity of people, cities like San Francisco, Calcutta, and Vienna might become havens of peripheral expression. Sometimes knowledge of the periphery is much more available in the center itself because of the way peripheral knowledge is organized and analysed (Hannerz, 1992:222).

The travels between center and periphery, between centers, or between peripheries, produce nomadic experiences that transcend the perspective of the one-time migrant we know from the colonization of the Americas by the Europeans. In Hannerz (1992:246):

> "What we see is increasingly the back-and-forth movement of people, on a global scale, and in a bewildering variety of forms and frequencies. A great many people of the kind we have thought of as the typical migrants, people in search of work and a better life, return to where they came from after some years, not because they failed but because that is the way they always planned it. And others come back to visit with some regularity, postponing an answer to the question where they *really* belong, or simply making the question irrelevant. But then there are also many more kinds of people who are, or have been on the move: diplomats, businessmen, bureaucrats, academics, tourists, veterans of foreign wars, overseas volunteers, artists, refugees, youths on an intercontinental walkabout. For some of them, changes of scene are parantheses or interludes within a largely sedentary life, while for others, they are recurrent and central to their existence".

The transcultural identity of Edward Said, famous orientalist scholar and Palestine intellectual might serve as an example. Born in Palestine, brought up in Cairo, with schooling at Princeton and Harvard, his life has been a painful expression of multiplicity. In his biography *Out of Place* he writes:

> "During the last part of my time at Princeton, the sense of myself as unaccomplished, floundering, split in different parts (Arab, musician, young intellectual, solitary eccentric, dutiful student, political misfit) was dramatically revealed". [The issue was his love for both Middle Eastern Eva and American Bryn Mawr] Both relationships, counterpointed and plotted with fiendish regularity, were chaste, unconsummated, unfulfilled". (p.281) [Later, he reflects] Now it does not seem important or even desirable to be 'right' and in place (right at home for instance). Better to wander out of place, not to own a house, and not ever to feel too much at home anywhere, especially in a city like New York, where I shall be until I die. […] I occasionally experience myself as a cluster of flowing currents. I prefer this to the idea of a solid self, the identity to which so many attach so much significance […] With so many dissonances in my life I have learned actually to prefer being not quite right and out of place (Said, 1999:295)."

Cultural theorists set out to describe a pre-eminently spatial shift as the core of globalization, even if their works do not always take 'what space does' seriously (Crang, 1999:168). It is what globalization means when it comes together (or falls apart) in lived experience, or globalization mobilized, that the process becomes interesting. The culturalist camp claim the global is an essentially 'contested space' where cultures intermesh, fight, diverge, converge, and overflow. To them globalization is the end of the reign of reason, of the word, and of progress, in short we are in the time of the tribes (Maffesoli, 1996), the age of the sign (Lash & Urry, 1994), and face the empire of the senses. Metaphors like 'nomadic', 'tribe', 'images', 'mobility', 'transgression', 'postmodern', and 'flow' rule the scene.

The culturalists are seldom modernist. As a result, the category of society is totally abolished, due to its misconception of wholism, unity, and nation states. Rather, postmodern spatialities emphasize the social as a hybrid, fragmented, and mobile category rejecting the three images of 'unity, purity, and order' (Albertsen & Diken, 2000:2). Instead, with

Bataille (1997:127), they adopt 'heterogeneity'. Any such element is defined by its intensity and by the ways in which it breaks with the homogenous; as in cases of excess, delirium, madness, and violence. In particular, the sacred plays a dominant role as things that are 'assumed to be charged with an unknown and dangerous force' (mana) and 'a certain social prohibition of contact (taboo).'

To English postmodern sociologist John Urry there is now a need to develop a mobile sociology; 'a manifesto for a sociology concerned with the diverse mobilities of peoples, objects, images, information, and wastes' where key concepts are 'gamekeeping, networks, fluids, scapes, flows, complexity, and iteration' (Urry, 2000:185).

It is ironic that sociologists always need to defend the social. But even more so when we have to do it before the sociologists themselves. Urry never seriously discusses society, only what he sees as 'state-society', and especially 'nation-society'. He has developed a 'post-societal' agenda based on networks and mobilities. Urry states: "Some of the diverse mobilities that are materially transforming the 'social as society' into the 'social as mobility' include imaginative travel, movements of images and information, virtual travel, object travel and corporate travel" (Urry, 2000:186). Further on, "The global economy of signs, of globally circulating information and images, is transforming the public sphere into an increasingly denationalized, visual and emotional public stage" (Urry, 2000:201).

Urry tries to convince us that 'society' is an essentialist category, but it does not have to be. In many types of sociological arguments, society denotes a relational, dynamic product of the continuing production of sense, purpose, unity, and meaning (such as in Bourdieu's theory of habitus and social space). But to Urry, since meaning is not sought, or has 'lost', we must abandon the notion.

Various conceptual attempts try to tackle the new situation. Bauman (2000) takes fluidity as the most prevalent phenomenon of modernity. To him, society is forever changing. He writes:

> "fluids do not keep any shape for long and are constantly ready (and prone) to change it […] they travel easily […] we associate 'lightness' […] with mobility and inconsistency: we know from practice that the lighter we travel the easier and faster we move" (Bauman, 2000:2).

Filled with what Augé (1995) calls non-places (airports, motorways, hotel rooms) devoid of symbolic expression of identity,

relations, and history, Bauman's modernity is 'light', and as a consequence work is characterized by movement and delay. In such a situation, procrastination becomes a virtue. Indeed, to procrastinate, or to manipulate the possibilities of presence is an active stance in response to what technology and modernity makes you do; place things differently, and mostly somewhere else. Derrida takes this even further in his obsession with 'being away'. Picked up by Braidotti (1994), as we will see in a bit, the nomadic stance provides a novel perspective on circumstances, without falling into the trap of being 'out of place', as Edward Said laments of himself in his recent biography (Said, 1999).

What the sociologists of globalization share is the fear of anomia combined with the rejoicing of poststructural possibilities in a state of networks (Castells, 1996), fluids (Bauman, 2000), risks (Beck, 2000), or time-space distanciation (Giddens, 1991). The commitments needed are both longterm and short-term. As individuals, Bauman (2000:163) reminds us: "*Now* is the keyword of life strategy…[and] bonds and partnerships tend to be viewed and treated as things meant to be *consumed*, not produced". But is the separation between consumption and production as easy to draw as Bauman thinks? We are wise to keep in mind Durkheim's (1915:475-477) words:

> "In a word, the old gods are growing old or already dead, and others are not born. […] But this state of incertitude and confused agitation cannot last forever. A day will come when our societies will know again those hours of creative effervescence, in the course of which new ideas arise and new formulae are found which serve for a while as a guide to humanity. […] But feasts and rites, in a word, the cult, are not the whole religion. This is not merely a system of practices, but also a system of ideas whose object is to explain the world; we have seen that even the humblest have their cosmology. […] Conceiving something is both learning its essential elements and also locating it in its place. […] Society supposes a self-conscious organization which is nothing other than a classification"

There might seem to be a mountain of difference between Durkheim's sociology of religion, and modern division of labor. However, globalization through the Internet is often viewed as a social enterprise, and cyberspace as a social space. No surprise, Internet scholars tend to view the Internet as the most fundamental element of

globalization, and often share the view that virtual space is more and more important in society (Turkle, 1999; Wellman & Hampton, 1999). Indeed, 'we are living in a paradigm shift, not only in the way we perceive society, but even more in the way in which people and institutions are connected. It is the shift from living in 'little boxes' to living in networked societies" (Wellman & Hampton, 1999:648). These boxes are for instance neighborhoods, and it seems evident that 'people usually have more friends outside their neighborhood than within it', thus are 'networked', and they actually use 'computer networks as social networks'. These networks are social 'because they are', it seems, and in addition they bring new social elements in, like asynchronous communication, rapid exhanges, complex interactions, own norms, and more extreme communication. Forwarding allows indirect ties to become direct relationships, email is accessible, one-to-many communication is simple, it 'fosters weak ties', sustains specialist communities of interest, and support both purely online communities, as well as those that intertwine computer-mediated and face-to-face communication.

Indeed, global networks free workers from local, place-bound constraints:

> "…computer-supported social networks successfully maintain strong, supportive ties with work and community as well as increase the number and diversity of weak ties. They are especially suited to maintaining intermediate strength ties betwen people who cannot see each other frequently. On-line relationships are based more on shared interests and less on shared social characteristics. […] The combination of high involvement in computer-supported social networks, powerful search engines, and the linking of organizational networks to the Net enables many workers to connect with relevant others elsewhere, wherever they are and whomever they work for" (Wellman et al., 1996:231).

Paradoxically, computer networks also encourage the formation and strengthening of local ties (Wellman & Hampton, 1999:650). The last point is interesting, but has been toned down in Internet research until quite recently. The globalist pretension made scholars overlook the local phenomena inherent in all media; that it strengthens local ties.

The adherents of virtuality sometimes closely follows those doing research on the Internet, typically have the notion that most of the world is now virtualized, or turning virtual. Social scientists advocate 'Virtual

Society' programs designed to check out the virtual world by means of research, computer scientists claim the world is more and more dependent on computers, and there is a whole new field of e-learning companies who advocate virtual learning. Implicit assumptions in virtuality discussions include that information and knowledge is the same thing, that the virtuality trend necessarily will continue (which is a technological determinist statement), that there are few costs with the digitalization of information, and that knowledge can be 'stocked'.

In the computer-assisted cooperative work (CSCW) tradition, computer scientists, information scientists, communication scholars, psychologists, and anthropologists together with corporate and govermental representatives work on the consequences of Internet on work. Their view on globalization (as space/place) is contingent. The use of online workgroups, discussion groups, intranets and email lists can mould spatially dispersed co-workers into more densely knit, socially cohesive organizations (Wellman & Hampton, 1999:652). However, despite the development of cutting edge technologies, the CSCW community acknowledges that systems have not met with a great deal of success (Heath et al, 2000:304). There is, however, little research that shows "the ways in which different forms of collaboration emerge, coalesce, evolve, and fragment". And hence how individuals "in concert with each other use various tools and technologies to assemble temporary forms of co-operation, so as, for example, to develop a particular niche in the market" (Heath et al, 2000:304).

The adherents of Cyberspace join forces around the Internet as a liberatory instrument. Indeed, many of them are neolibertarians (Borsook, 2000) who in the Internet have found a way to express themselves, found a way to make their special interest into the mainstream discourse about what society was about. The precursors of this thought did come out of computer circles around universities, most of which came to be called 'hacker' communities, some remained in the academia, some went on to business, yet others remained in Cyberspace. Well, remain is not the term, because they actively created what now is known as cyberspace through seemingly small virtual communities that were picked up by novelists like William Gibson (1986).

Cyberspace as a social theory subscribes to the notion of disembodied communication. Free from the constraints of bodily discourse, the cyber is allowed to operate in a space of possibilities, seemingly endless in its nodes, networks, and options. But just that seems to be the characteristic of cyberspace as we know it today.

Scattered interest based virtual communities that quickly form, evolve, and disintegrate, almost organically. And constant attempts to structure, restructure, and keep what necessarily can not be kept, but is better left in a free flow of impressions, images, and information.

Yet to the true cybertarians, there is a common message in cyberdiscourse. A message sometimes formulated as a message to humanize business communication (for instance the popular website and bestseller *The Cluetrain Manifesto*, at Cluetrain.org), or as a global movement of computer programmers (the Open Source Movement, for instance visible at Opensource.org). Yet, the question of cyberspace and identity is a complex one. In what sense do you actually belong to a web community, or to the possibilities of Internet as a whole? These are the questions of Internet scholars. MIT's Sherry Turkle is one of them. In her *Identity on the screen* we learn that American youngsters find themself online. The computer becomes a *second self* that they project both enourmous desire, and unwanted qualities onto. To Turkle (1999:643):

> "A rapidly expanding system of networks, collectively known as the Internet, links millions of people together in new spaces that are changing the way we think, the nature of our sexuality, the form of our communities, our very identities. In cyberspace we are learning to live in virtual worlds. We may find ourselves alone as we navigate virtual oceans, unravel virtual mysteries, and engineer virtual skyscrapers. But increasingly, when we step through the looking glass, other people are there as awell"

According to Suchman (1987), the workplace involves 'practical situations of choice', not only formalisms, and rules and plans depend on the *common sense* reasoning by workers there and then. In this perspective, however, computer-supported cooperative work (CSCW) is possible, given certain constraints. But, the physical setting interferes in the work process. Place, buildings, offices, and surroundings shape people's well being. Architects of all sorts has this as implicit, sometimes explicit foundation in their daily work with building favorable environments that 'fit' both their natural, social, and customer's demands.

That business is globalized is a truism. Nowadays, this is old news, even a boring claim. However, the current phase is characterized by well-meaning attempts to understand the mix of local and global, and to face its challenges. One prevalent understanding is that good firms now have global scope but local penetration (emphasizing the importance *en*

gros as well as the reach *en detail*), or global outlook and local understanding (emphasizing their social, political, and cultural awareness, perspective, and tolerance). If we turn to business schools, this knowledge is put to play in courses on global capital markets, on organizational communication by ways of new technology, especially managing the increasing number of multinationals (by now over 50 000 companies worldwide, according to recent OECD statistics).

Face-to-face communication is especially crucial for beginning relationships with long distance employees, and for emotional messages, conflicts, recognition, or bad news. Also, synchronous computer mediated communication (CMC) such as videoconferencing is not viewed favorably because it is compared to face-to-face, whereas email as an asynchronous medium was not expected to match those criteria. Thus, email is a good medium for mundane, regular management tasks such as giving directions, coordinating and issuing follow-ups, but a bad one for communicating visions or other 'influence functions' (Gray & Daly, 2000:25).

In globalization, the Internet provides the main strategy for better organizational communication, and knowledge management is the main business fad. Thus, groupware tools designed to codify, document, and spread organizational knowledge are highly sought for. Another perspective, but neverthelesss true to the technological focus is the following. In workplace studies, the physical surrounding and office structure is at the forefront, often with a technology intensive outcome (Heath et al, 2000). The computer supported cooperative work (CSCW) tradition, populated by psychologists, educators, and information science people, has taken on the computer as the generic work and learning tool (Wellman & Hampton, 1999).

No wonder, geographers are, de metis, concerned about place and space relationships and its relation to globalization. It would be tempting to consider their focus tilted towards place. Indeed, Thrift (1999:31) records the 'sheer magnitude of the task of attempting to record every aspect of a place'. Yet, he follows Latour (1999) in wanting to study how ideas, people, things appear, disappear, and reappear. Because, as he says, the 'documentary impulse' persists, even as the geographical world is a messy one.

Summarizing the attempt to locate technology, we find that the tensions between the technical, material, and social factors at play are explored by a wide literature. From geography of innovation, to media theorists; to sociologists of globalization, the nomadic, mobile and

Internetted cyborg visions vane somewhat, and the question of situated work practices emerges.

In the following I will explore the tensions of mobility through an investigation of place sensitive arguments in particular.

The tensions of mobility

Where I in the previous section explored the socio-technological aspects of mobility in globalization I will now move to the socio-psychological, cultural, and geographical features. In particular, I will look at the production, performance, and possible persistance of community in the midst of these changes. A central starting point is to investigate what mobility, in this sense, really means. Briefly, I will discuss the consequences of the increasing mobility of people, both between and within countries, workplaces, and social settings. Place will therefore be what ties this section together.

Indeed, although sociology is often sensitive to place, exactly 'how' places matter is a tough question (Gieryn, 2000). Gieryn (2000), for instance is unable to describe the sociologically relevant differences between cities like Maastricht and Bloomington as 'places' proper, but 'feels' the difference and 'knows' it is there. Place sensitive theorists exist in a space dominated theorizing majority. Thus, some of them are pessimistic about their own struggles (Sennet, 1998), others are more optimistic (Etzioni, 1996). Many are afraid that we have lost 'community' and with that the very core of our human collectives; its moral infrastructure (Etzioni, 1993; 2).

Place is not, we shall see, new to sociology. Already with MacIver (1931:59) we find the insistence on place as a foundation of community:

> "In our definition of community we insisted on its distinctively territorial character. It implies a common soil as well as common living. [The local area is] a specific common environment with whose peculiar characteristics men in their group life must come to terms with and to which they make appropriate responses. […]

I will elaborate this notion in several different ways. In fact, by place I mean co-present micro practices and their embeddedness in particular socio-physical configurations. Thus, I immediately reject Castells' (1996:423) definition of place as ”a locale whose form, function and meaning are self-contained within the boundaries of physical

contiguity". In his framework this means place is locked into local considerations and held together by a closely-knit culture. This is also Sennet's (1976) fear. Rather, I keep the possibility open that place-specific practices can be influenced by global, overarching spaces without loosing their basic 'situated' characteristics. This will be a claim I explore in the article *Space over place: situated high tech practices in Silicon Valley*. Here, it will suffice to say that place is a central tenet in a territorially sensitive critique of informationalist theories. Also, it has to be noted that practices are not always shaped uniquely by co-present artefacts and people. Increasingly, local actions are configured by ways of symbolical imaginaries imposed from the outside.

Durkheim (1915:471-473) was not in doubt when he said:

> "Collective consciousness is […] a synthesis *sui generis* of particular consicousnesses. […] For before all else, a faith is warmth, life, enthusiasm, the exaltation of the whole mental life, the raising of the individual above himself".

While allowing for heterogeneous relations betwen spaces (material, informational, symbolical, virtual), it seems beyond doubt that such a consciousness could not be elaborated, maintained, and improved without territorial proximity on a regular basis. The tensions of mobility are apparent right here; if the discussion of spaces of globalization in the last section is valid, co-presence almost has to be taken as an 'exception' in otherwise completely virtually contingent human practices. So, we are indeed in a crisis. And social observes agree. For Putnam (2000), the observation that people are increasingly bowling alone is a sign of a shrinking social capital in America; a shrinking sense of 'who we know' and what they will do for us. For Oldenburg (1989), the loss of the 'great good place' of the coffee shop, the neighborhood store, and the park is a sign of apocalypse. The concern is not new, already Riesman (1950) famously declared America's *Lonely Crowd*. According to Sennet (1998), we can readily observe the 'corrosion of character' in American cities like New York and Boston. To Christopher Lasch (1979) the loss of community takes the form of a critique of narcisism - we lack the ability to relate to each other because we only look at ourself. But let's look at the feature all of these theorists point to - the integrative function of community. Why do they argue this way?

To some extent, the issue is related to the corrosive effects of mobility. While Sennet (1973) sees tyrannic effects of exaggerated community (localism, narcisism, fraternicide), in *The Corrosion of*

Character, that same Sennet (1998) warns of the corrosive effects of a nomadic attitude to life, a life where moral value has no place. He has observed New York media people network, socialise and transfer the latest "buzz" both day and night. He calls their virtue "portable social skills", and states that this is alarming. Sennet (1998), however, makes no secret about the importance of place in his argument. In one sense, he is concerned that place, which has great moral value, is disappearing. Another interpretation, of course, would be to say that Sennet fears the advent of hyperplaces like New York somehow suffocates what he formerly welcomed as urban freedom. The sociologizing of intimate experience he feared might have completely penetrated the cosmopolitan, yet city-based public spirit 'where strangers are likely to meet' that he strives so hard to uphold as an ideal in his early work (Sennet, 1976:48). However we look at it, Sennet (1998) observes a situation where work increasingly occurs everywhere when in a metropolis like New York, but certainly not anywhere (outside the urban 'buzz'). The locations where "buzz" occurs are few, and change constantly. The imperative is you have to be there. This ties in with what Hochschild (1997) fears 'when home becomes work and work becomes home'. Also Bellah (1985:186) notes:

"While mobile professionals in the United States do indeed engage themselves in complicated networks of intimate relationships, these networks are often not tied to a particular place. One may maintain close friendships with a host of people scattered all across the country. The members of these 'radical' friendships tend, moreover, to be very diverse. The friends one makes at work may be very different from the friends one makes through a recreation club or a church, and they are not likely to know one another. Indeed the professional often considers it a major virtue to be able to accept a wide range of people with different values and styles of life as friends. […] But this moral tolerance often makes it extremely difficult for professionals to give any justification for the sacrifice of private interests to the public good."

The tensions of mobility are expressed as claims of 'decline of morality', 'corrosion' and 'alienation' (Etzioni, 1993; Hochschild, 1997; Oldenburg, 1989; Putnam, 2000; Sennet, 1998). Taking up Toffler's (1970) concern that we are consuming places like Kleenex and beer cans, quoted earlier, we should begin to investigate how long time we have to spend in a place, in order to relate properly to its surroundings. For, according to Bech, Giddens & Lash (1994:95), the detachment from tradition has already taken place. But what tradition are we talking about? Do we

necessarily have to have a history of decades' involvement with a place for us to feel at home? Might not the mobile knowledge worker on temporary assignment to Singapore eventually develop situated practices? Might it be that Giddens and companions lack real empirical grounding? Musings on lack of tradition are ok, but in lack of primary data, their theoretical stances have been too readily accepted so far.

My perspective derived from science and technology studies (STS) brings into doubt the notion of a 'loss of meaning' because the technologies themselves only are misrecognized as deterministic and purely 'technical'. In reality, they are dense with meaning, both inscribed by their producers (Akrich, 1992), and constructed by their users (Lie & Sørensen, 1996). However, the changing mobility patterns themselves could have corrosive effects for the establishing of innovative work settings. This, because shared practices, which are fundamental to knowledge sharing, only evolve through careful co-present interaction and networking. Lash (1994:156) foreshadows this point when he brings in Bourdieu's notion of how knowledge emerges through the shared practices of habitus, neither conceptual, nor mimetic in nature.

What significance, if any, does virtuality, macro phenomena like the multinational operations of the corporate sector, and global spread of Hollywood metaphors through films like The Lion King, Forrest Gump, and The Flintstones have on the communication and work practices of everyday knowledge workers? What about the activities in international financial markets? Clearly, the combined symbolic and technological influences shift our attention, if only for a moment, towards the global[3]. But, I would argue, the 'foreign' quickly becomes quite local through pragmatic transfigurations. Imagination is lazy. Images quickly integrate into previously established patterns of thinking, symbolizing, and acting.

While mobility itself is a chief concern, technological innovations intervene. New Media, especially, has spawned an interest in the performative aspects of community. Politicians, social workers, and interest groups mobilize the Internet to get attention to their own locality, and how they should interact with the rest of the world. Distinguishing the real, the imagined, and the virtual communities,

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[3] Questioning technology this way, however, one is not automatically a Luddite critic who sees no good in the Internet. For an article discussing the virtue and stigma of Luddism in 'Information Society' critical discourse, see Webster's (1999) "Information and communication technologies: Luddism revisited". In Downey, J. & McGuigan, J. (1999) *Technocities*. London: Sage.

Silverstone (2000) picks the performative aspects as central both to the 'real', placebound community of which we are nostalgic, and to the imagined one of for example broadcasting audiences (Anderson, 1983), or the virtual communities of cyberspace (Rheingold, 1993). As we have previously seen, Wellman et al. (1996) and Turkle (1999) evoke a picture of cybercommunity as *the* community of contemporary reality. By many, this is seen as problematic, both as an empirical assertion and as a political goal. For instance, as we have seen Sennet (1998) argues we face a 'corrosion of character' due to the flux of mobility, virtual or physical. Another way to voice this concern is Hochschild's (1997) observation that 'work becomes home and home becomes work'. Applied to online reality, it is evident that to many people the presence of a computer or a cellphone both on the bus, in the car, and at home further accellerates the totalitarian aspects of contemporary knowledge work.

Proximity, however, is not necessarily all gone. While proximity might be an ephemeral phenomenon according to sociologists of globalization, other sociologists take the opposite view. Relying on Goffman and Garfinkels thoughts, the following roll of arguments emerges: proximity is compulsive. It creates its own logic through the availability of bodily performance. Bodies can touch; itself a vocabulary of deep significance. Diverse meaning comes from the degree of touch intensity, precise location of body the used, and the exact spot where the touch is placed (Boden & Molotch, 1994: 262).

Moreover, co-present interaction is thick with information; it delivers context clues. Beyond sheer efficiency, it 'feels good', it is 'dignified', shows 'commitment'. And, observing business leaders, we discover that loose talk is both efficient and flexible. There are some things you cannot plan beforehand, they emerge in the course of conversation when constraints of the telephones, the faxes, the memos, and emails are removed. Some types of expression, like laughter or display of emotion, lend themselves to copresence. Special circumstances, like tragic messages or bad news demand copresence, or the promise of such in the near future. With new communication technology, the coordination of activities often demands more attention. Some geographic implications of such perspective could be the following: "that the only way to deal effectively with the simple communication of high technology is with the medium of highest complexity - copresence" (Boden & Molotch, 1994:274).

So, it might even be the case that place *intensifies* in the global. Contrary to the theoretical mainstream, occasional discourse theorists

(van Dijk, 1999) as well as postmodernists (Harvey, 1989) and communication scholars (Ferguson, 1990) claim both time and space intensifies and gets more important. Under the joint constraints and opportunities that new media and globalization bring, place intensifies simply because you now can choose where you want to be. You are allowed greater selectivity to strategically choose the places you want to be. Their arguments rest on the essence of new media. However, the place-intense perspective has roots in other globalizing phenomena. The city, for instance, has for a long time been viewed as a core site of such trends. Already Simmel (1967)[4] said:

> "The bodily proximity and narrowness of space makes the mental distance only the more visible (p.234) […] the brevity and scarcity of the inter-human contacts granted to the metropolitan man [produces] the temptation to appear 'to the point' to appear concentrated and strikingly characteristic (p.236). […]

Particularly sensitive to space, critical to historicism, but still aware of history, postmodern geography arises by ways of Foucault, and brings forth the inherent *spatiality* of the micropowers operating in cities, asylums, and human bodies (Soja, 1994:138-139). In Soja (1994), Los Angeles becomes a hybrid site from which to deconstruct and reconstruct modernity. Notorious for having no urban center, Los Angeles makes interpreters grapple with the notions of urbanity and suburb - for in the tradition of spatial geography dating back to European scholars Lefebvre and Burckhardt, the centers *hold* the heterogeneous together. Rather, Los Angeles ressembles a gigantic agglomeration of theme parks; a life space of Disneyworlds. But the seemingly free development of the city guises the extraordinary measures of protection and surveillance, the controlled spaces, gated communities, and relative lack of hybrid communities.

Scholars concerned with the geography of innovation are sensitive to territorial issues. As Storper & Walker (1989:226) argue:

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[4] Simmel (1858-1918) wrote this text much earlier, but the most widely quoted English edition of this work is *The Sociology of Georg Simmel*, edited by Kurt Wolff. Copyright 1950 by The Free Press. I here use the Wrong & Gracey (1967) reprint of the article issued in that edition.

> "The prevailing assumption in the social sciences is that society and economy have geographical outcomes but not geographical foundations. We disagree. In our view the territorial arrangement of activities is central to the broader constitution of any society's economic, social, and political fabric; indeed, societies are shaped only by virtue of their imbrication in territorial formations".

Global capitalism, to them, grows through territorial development (p.9), and 'the potential for new industrial locations to develop at relatively unindustrialized places has limits…[because] resources cannot be immediately transferred […] this is especially true of highly-skilled scientific and technical workers, who, regardless of wage incentives, often cannot be induced to migrate" (p.75). Thus we see the development of regional growth complexes near metropolitan cities like Route 128 near Boston, Orange County near Los Angeles, and Silicon Valley near San Francisco. The workplace itself is a geographical cluster, because of the intensification of work possible in factories, workshops, and large workspaces:

> "It would be a mistake to treat workplaces as mere points on the map, because they can include dozens of buildings, yards, canals, roads, or docks, extending to scores of acres. Furthermore, factories and other large workplaces, such as construction sites or airports, generate complementary processes of spatial aggregation by drawing into their orbits many smaller suppliers of materials, parts, machinery or business services" (p.78).

Industrial location theory and regional growth theory has been considered separate entities, but are interlinked through their common locus of territory (p.183). These viewed together with the notion of intra-sectoral transfer of innovation (from management to the factory, from technical to organizational changes), can and should replace diffusion theory (Hägerstrand, 1952), the view that innovations move through information flow, and that users are merely 'adopting' whatever comes along. Even as theories of diffusion and location now touch, the interrelationships are more complex than the attempts so far to overcome them.

For Bourdieu (1996), the spatial organization of society is governed by the principle of habitus. A 'structuring structure and structured structure', habitus is that which constrains the actors to see certain

things, make some choices not others, and to think the way they do. This constraint is not imposed of the actors themselves, not even from the powerful ones. The field structure imposes these constraints. Habitus is the inherited cultural impulse, the very basis of identification and meaning of a social group, though often unspoken. In fact, the habitus is best visible as habits of the body, because the body reveals us. We can not hide behind it. For instance, we can 'see' social class manifest itself though our eating habits. The classic mistake of ordering a big Bourdeaux wine with a shrimp dish could serve as an example. Practices associated with taste have clear cultural lineage, according to Bourdieu. Other things follow the same logic. The habitus of the working classes in France is transparent to the trained observer. In no way can you escape the cultural conditioning of your habitus. The reason is a society constructed on the basis of clear symbolic values ordered in degrees of distinction, and a set of corresponding practices that take on symbolic meaning. Bourdieu's analysis is relational, the position of each actor can be illustrated as a system of mulitidimensional social space.

Bourdieu's reasoning can easily be applied to the issue of social space versus place. The tradition for describing social worlds in terms of a social imaginary is a French strength. Bourdieu and his habitus is an application of the social imaginary. The positioning inherent in a social field is governed by the habitus ruling the partiular field. This habitus, or social imaginary, is an ordering principle. It serves as to organize and configure practices. The way these practices are configured will stay in the memory of a particular place, just as the 'memory' of a historic event does in the consciousness of a group.

In conclusion, the tensions of mobility are manyfold as we explore what mobility means to people's practices. Complex also because work-practices and everyday practices intermesh. As Sennet (1976) reminds us, the practice of community is no guarantee for stopping the corrosive tendencies of mobility. Rather, as place and space relations intensify and sometimes operate interchangeably, technology and humanity influence each other. Sennet (1976) suggests urban, physically tight co-existence as a remedy, and Storper & Walker (1989) reminds us that material resources like factories, rivers, or configuration of office-facilities influence work practices. This gives reason to question both the reason behind the rhetoric of mobility, and whether mobilty is as prevalent as the visionaries want it to be. What kind of mobility are they talking about?

The sociology of place making

We have said that social reality consists of people, things, and places that relate to each other through specific social imaginaries, or symbolic ensembles, that constantly are subject to *place making* activities. *Place making* occurs when people actively participate in the configuration of the places they inhabit and the spaces they touch. My chosen example is the *place making* of knowledge workers. I maintain that knowledge workers can not exist outside of a configuration, a sphere of influence that gives value to their work, or legitimizes their work as 'knowledge'. I will use Silicon Valley as the example of *place making* activity involving technology, territory, knowledge, and organizations. I say that Silicon Valley has an intellectual repertoire, a daily life that ressembles that of a knowledge worker. This means a knowledge worker is a 'normal' phenomenon in the Valley. His actions are more or less mainstream. There is nothing peculiar about working for a high tech company, owning your own company, or supplying consulting services to the high tech field. In fact, it appears like the most normal thing to do for a young, ambitious person. Now, we do not need a highly developed imagination to claim that it is 'easier' to be a knowledge worker i Silicon Valley than elsewhere. Not easier because there is no competition, rather the contrary; but easy because the institutional arrangements are fit for it, the lifestyle-choices are in place. And, the examples of how to do it are readily available, whether in the form of your parents' stories, your friends, your teachers, or just the critical mass of total impulses from the outside 'reality', that of Silicon Valley itself. A visit to Palo Alto, the small, ideal type high tech upper class city heaven with New England porches to have lunch on, and German Porsches to enjoy in the driveway is a perfect way to grasp what I am talking about. Here it is all so visible, laid out before you.

In other words, *place making* often consists of 'doing what seems sensible to do' given where you are. Location plays an enormous role in this choice. It determines what you are influences are, who you meet, what the social imaginary looks like. These fundamental patterns are hard to escape. *Place making*, thus, is both a passive and an active process. It occurs without notice on an everyday basis. Your 'paramount reality' shapes the type of *place making* you will undertake. And in some sense, you are made to fit into the place you are at. As Bourdieu's social analysis shows the structure of society, visible in the most highly regarded symbolic capital shapes the actor's choices. But, what this

means is certainly not that community is for nicer-than-life behavior and necessitates a full credence in altruism as opposed to self-interest. MacIver (1931:63)

> "[While the first element of community sentiment is the sense of communion itself] so that when they say 'we' there is no though of distinction and then they say 'ours' there is no thought of division. […] It is rather that the interest of the individual is identified with or merged in the larger interest of the group, so that he feels indissolubly bound up with it, so that in his thought the community is 'bone of his bone and flesh of his flesh'."

Globalization is not occurring in terms of a shift from place to space, from place to global/local, or from place to glocal (Robertson, 1992). Rather, someting more radical (in every sense of the word) is happening, the roots follow, and 'global' is a contradiction in adject. We see a move from place to the joint processes of hyperspace and hyperplace, the intensification of both place and space. One way to illustrate the pitfall of one-sided cybertarian views is the work of Internet scholars.

While the virtual encounter in some ways could be understood as a marginal situation, that is following Jaspers, the situations where reality is proven through negation; like dreams, deaths, and world-breaking (Berger, 1967:43), we can in no way assume that the virtual takes over the situational definition of most actors. Rather, the marginal is characterized by ecstasy, that is, literaly 'stepping aside'. Internet scholars deploy what Knorr-Cetina (1999:63) would call a liminal approach to knowledge, that is "knowledge about phenomena on the fringe and at the margin of the object of interest". In her account of high energy physicists:

> "[They] incorporate liminal phenomena into research by enlisting the world of disturbances and distortions, imperfections, errors, uncertainties, and limits of research into its project. […] High energy collider physics defines the perturbations of positive knowledge in terms of the limitations of its own apparatus and approach (Knorr-Cetina, 1999:64)."

Thus, virtual community should, properly understood, be a subtext to the community-at-large, that is, our society. This would yield considerable understanding of our day and age. However, Wellman et

al. (1996) and Turkle (1999) end up treating the margin as the main. The problem with Wellman et al.'s (1996) and Turkle's (1999) observations is they by now are so immersed in their own study object that that they start seeing things that were not there before. That itself would be ok if we found they were sources of 'fresh power' (Latour, 1999), using the Internet as a laboratory. But most likely they have produced fictional accounts of virtualities that belong to a very limited historical phase of this medium's development, and certainly limited in the story of societies. Turkle (1999) forgets that young people, outside of MIT campus surroundings do other things as well, that Internet is only *one* constituent of their *world making*. Also, Internet scholars, it seems, are so defensively arguing the importance of Internetted observations that they forget that the medium has seamlessly introduced itself to most of Western society without us noticing. When we do, rather than find ourselves perplexed, worried, taken aback, we feel comforted, happy, and up-lifted. But maybe not changed in a fundamental way? It is simply a continuation of communication with other means. And those means do have an impact. But the Internet does not operate in a sphere 'outside' society, somewhere ephemeral where we cannot grasp it. And the usual means persist and do not fade away. Just like the radio survives the TV which in turn will survive the Internet.

It is indeed very easy to forget that society in itself always has had ephemeral characteristics. No imagination could ever be completely captured. Neither in the *tableaux* of the French Impressionists; in the machines of Gottlieb Daimler; nor in the words of Shakespeare.

The reader should be reminded that I have set out to study the possible transformations of the 'social' in the wake of globalization, Internet, mobility, and marketing. I am in no right to dismiss any of these phenomena. But I have every intention to weaken the 'strong programme' of its most extreme adherents. Putting it all together, it seems like a greater challenge to explain why society is stable and apparently unchanged in its fundamentals by all of these imposed conditions rather than to explain the forces behind a change we, at best, can observe in its generational effects. These effects are only starting to appear, in the case of globalization, and in the case of Internet we will have to await another 20 years, maybe. Already Durkheim (1973:138) was aware of the loosening effects of mobility, yet did not believe it would de-stabilize society altogether:

> "As we advance in the evolutionary scale, the ties which bind the individual to his family, to his native soil, to traditions which the past has given to him, to collective group usages, become loose. More mobile, he changes his environment more easily, leaves his people to go elsewhere to live a more autonomous existence, to a greater extent forms his own ideas and sentiments. Of course, the whole common conscience does not, on this account, pass out of existence."

Now I seem like an old, agressive academic, a historian with a view for the long term, and not for the very important details that constitute contemporary experience. Yet that is not entirely true. The details will be given their due presentation. It is precisely because of the details that I am concerned. The grand social theories of cybertarians, or sociologists of globalization, seem void of detail. Short of specific examples they talk in terms of 'epochal shift', 'flow', 'networks', and 'images' without specifying actors, forces, or social structures that go along with this swift process of change. We are left with musings, examples, anecdote, and not a small portion of apocalyptic worry.

Pocketing society shifts the focus from the technologically and informationally constructed society to the portable *weltanshauung* created by the combined mimetic/aesthetic, technical, and social uptake of mobility. As a factish, it consists of factlike and fetishlike elements. Intervoven, as it were, with notions of global as not merely immaterial, open, and connected, but also as material, local, limited, and limiting; and the same for local. Together, the local/global, the space/place, and the material/aesthetic are dismantled before a practice based society where individual practice is *mobilized* in and of collectives. In a way, nothing is new under the sun, for as Durkheim expresses, the individual emerges through the collective. Or, as Knorr-Cetina (1981) says, micro situations have macro foundations.

As we then might be able to see, the nomadic stance is also a very territorial one. Like paracites (Zimmer, 2001), nomads are careful with their hosts otherwise they would be homeless. For, the discourse on virtuality and work is complex. It would be tempting to disqualify the virtual workplace altogether. But certain phenomena persist. Distance work continues to occur, a lot of experiments are going on. In some sense, most knowledge workers are virtual workers. They use some kind of technology to take care of the problem of presence. Whether paper,

computers, or groupware, technology interferes in thinking patterns and contributes its own eigenworth to the quality of the working experience.

The sociology of *place making* explores what happens when visionary and other practices by ongoing, precarious attempts configure stable versions of reality. This pocketing process has material, symbolic, and technical components, but can seldom be reduced to any of them.

Pocket Society, then, refers to, not only the placing and spacing of Internet, workers, and globalization, but also to the provinciality of this process. Society, as it were, becomes pocketed, brought forth as a portable process, but falls down as a pocket solution to a bag problem. Pocket, also because society is smaller than before, portable, mobile, or what have you. According to sociologists of globalization, we live in a society that can readily pick itself up and carry on as nomads. Without territory, without fixed points of reference, Pocket Society becomes a fluid society (Bauman, 2000). The 'weird' stance of sociology of globalization - that society has to be abolished in favor of networks - is caused by a rather sudden discovery of the activity of technological artifacts, information, images, and networks. It is tempting to say that if the theorists only relaxed a bit, they would discover that these things have 'always' been part of societies, and does not destroy the factish of society. In the meantime, and in the Mertonian spirit, I will explore some medium range factishes. But first, I will give a detailed analysis of what a factish reality consists of; how it works.

Factish reality: living with Globalization

Between space, territory, and technology there is some kind of 'reality' holding them together. How is this 'reality' composed? According to Latour (1999), reality is a given because it is fabricated. His position stems from his work on scientific practice, the study of 'laboratory life'. Here, he discovered how non-humans were actually socialized, and made 'ready' for interpretation through the artifact of the laboratory, and with the aid of scientists and engineers actually began to 'swap' properties with each other (Latour, 1987).

The laboratory can be a source of 'fresh power', and is then extremely effective in its fabrication, or construction, of new facts. Latour's most famous case is Pasteur's discovery of the vaccine. In short, Pasteur picks the anthrax disease, said to be 'terrible' for French cattle, a statement backed up by statisticians, veterinarians, and farmers, as his laboratory object of study. He has got people's attention. First he visits

the farmers, and samples micro organisms. He brings the bacillus in, and starts to cultivate it. This is where the *fabrication* starts. Now someting happens to the bacillus that never happened before. He creates controlled outbreaks of the disease using diluted cultures of the disease to compare effects. By now the scattered local events of anthrax outbreak, and the collective fear about the unknown, but widespread 'anthrax disease' are somehow *deplaced* into Pasteur's lab. Ecole Normale Superieure has somehow become the major *site* of anthrax disease. What happens next could be described as magic, as random, chance, or luck, but more credibly as a scientific discovery made possible by laboratory practice, namely the multiplication of scale. Pasteur proves that if an animal is in touch with a weakened form of the disease first, the disease itself is less severe when it hits (caused by exposing the animal to the strong form of the disease).

By now, Pasteur is interesting, but not historic. He needs to get the results out of the laboratory and into real life, into the farms, and into people's minds. Pasteur knows, and stages the Pouilly le Fort field trial, where he performs, or strictly speaking repeats what happened in the laboratory. Finally, by imposing certain conditions - the practices of disinfection, cleanliness, conservation, inoculation gesture, timing, and recording - Pasteur manages to spread the vaccine by extending his laboratory practice to all of France.

Not only did Pasteur cure the Anthrax disease he was set out to study, or convince the farmers that he had discovered the 'cause' of the disease. Pasteur, through his laboratory, made entirely new things possible, unlike other laboratory scientists who merely do 'experiments' that rarely catch our attention. Pasteur was able to translate other people's interest into his own language, and make them believe that they had common interests. Thus, his 'results' were really extensions of his laboratory practice, but had general bearing because of his newly won credibility as owning 'their' problems, and having privileged access to the problem at hand.

Rather than to say that Pasteur was influenced by his 'social context' (catholic, conservative, Bonapartist), the main point is that this privileged access gives Pasteur the opportunity to produce 'fresh power', and 'actively modify society' by displacing some of its actors. "To summarize the study in a nutshell, Pasteur adds to all the forces that composed French society at the time a new force for which he is the only credible spokesman - the microbe" (Latour, 1999:267).

In a sense laboratory practice is politics, but not in the sense where scientists have 'political views' that condition their observations. Rather, the laboratory scientist is a spokesperson for important forces you mould society with, and is often its only credible and legitimate authority, which is another way of doing politics.

The way Latour demonstrates his point is sometimes lurky, given his joint use of observations of practice, anecdote, and theoretical neologism, but the results are striking. Instead of a bloodless, rigid view of science, he shows that 'the many nonhumans mixed into our collective life through laboratory practice have a history, flexibility, culture, blood - in short, all the characteristics that were denied to them by the humanists on the other side of the campus" (Latour, 1999:3). In Latourian sociology, solid science is performed when closely knit to the collective, acquiring allies, and fabricating credible factishes, hybrids of fact and fetish such as Pasteur's 'microbes', 'bacteria', or 'virus'. All of which by now exist in the collective social imaginary, as well as in the imaginary of scientists, albeit in different shapes, and with different consequences in everyday practice.

It could now seem that Latour joins the usual postmodernist train of thought that has no view for actors, and sees a fragmented reality. That submission to the image itself, the rise of esthetic storytellers who have lost their sense of history but constantly try to regain it. Those who have lost their sense of place, but try to recreate its effervecence through anachronisms; or have lost their appetite for solid struggle in a joyous celebration of difference and deconstruction. However, Latour always insists on actors. No phenomenon occurs without the invocation of actors. Whereas he is critical to what he calls the 'modernist settlement', with fixed views on God, Nature, Mind, and Society, his alternatives all include the fabrication of facts and factishes through the intentional actions of actors. For instance, the activity of research is best seen as "a collective experimentation about what humans and nonhumans are able to swallow or withstand" (Latour, 1999:20). The actor is not a given. Actors arise when humans or nonhumans are given 'standing', when somebody or someting speaks its case, defends and upholds them. Thus actors 'emerge', for instance through laboratory practice, or political practice (the way the 'environment' now seems to emerge as an actor in collective discourse). Latour's key is to define the actor by what it does - its performances - under laboratory trials.

Now how is this relevant to the study of visions, and conceptions of global change through the Internet, and through the mobility of

people, spaces, and knowledges? Actually, the fabrication of mobility through common discourse could be viewed through the lense of the 'invisible college' of knowledge workers across the globe, and their 'laboratory science'. It takes many forms, is less disciplined than traditional science, has less principles, and occurs under many different conditions. This is the problem, but also a reason why 'factish' is a useful term to portray the fabrications underway.

If we look at our discussions of place and space in light of Latour's sociology, we find that the sociologists of modernization and globalization act as iconoclasts, trying to endow 'space' with place-like characteristics, and trying to destroy the old conception of 'place' as either (1) a naive belief (for it was never really there) or (2) a historical mode of existence (for it was there before, but is not now). If we view Castells (1996) in this light, his network society becomes an attempt to overcome the subject-object dichotomy, a destruction of the space-like character of places through an insistence that places somehow were constrained, limited, and were not built on networks.

Of course, performing a non-modernist critique of his modernist one is not an easy task, easy as it is to resort to meta-modernist criticisms like 'he is a naive beliver in advanced beliefs'. This way the regress is endless. But the way out of this dilemma is straightforward. The fabrications of the factishes 'mobile man', 'global man', or 'cosmopolitical man' are in turn deemed credible if they start showing up.[5] The meaning is in the making, undoubtedly, so we should be careful not to try to dismantle the whole discussion.

Latour's (1999) interpretation is, when it comes down to it, not impeccable. Constructivist theory is often critizised for putting 'the social' and its 'construction' into whatever phenomena, failing to see other influences. Often these constructions interfere with the traditional conception of 'Nature'. To practicing scientists this is especially disturbing. Sex differences are nothing but socially constructed gender roles. Personality disorders only exist in the heads, experiences, and articles of psychologists. So on and so on until extreme constructivists

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[5] The real issue, and the real problem with Castells (1996) and other globalists' analysis, is their superimposed expectation that the knowledge trends of the Open Source community will spread to all other actors. This, of course, is a whole other topic of investigation, and is a promising way of future research on the relationship between knowledge, mobile technologies, and humans.

end up stating that the natural world has a small or non-existent role in the construction of scientific knowledge, in short, an oversocialized epistemology (Schmidt, 2001:142).

What is at stake here, is the loss of privileged access and rights over valuable territory. Nature is the territory of the scientist. Society is the territory of the sociologist. Things are clean that way. Performing social constructivist analysis, sociologists often intrude on the scientific territory previously only held by the scientists themselves; a struggle called 'Science Wars'.

The usual debates between constructivists and non-constructivists discuss the cognitive criteria or the epistemology of their inquiry. However, the debates within the constructivist community are more important because they question the types of constructions that are credible, and why. Especially, the 'social' itself is under close scrutiny. What does it mean? How does it operate? If not everything is social, what should we label the other elements, and how do they interact with the social elements?

Even inside their own camp, constructivists disagree over the weight of the social. Thus, at the same time that society is 'made before our eyes' and 'shaped by our collective action', according to Latour, 'society is not made up of social elements, but of a list that mixes up social and not-social elements' (Latour, 1986). We then run into the problem of what the 'social' element consists of, anyway. Given that we are sceptical towards the notion of 'society', except as a social construction, credible when performed well, what are the social elements that make it up? Are they individuals? Are they the actions, words, movements, or images of individuals? And how do they come together as meaningful wholes, in such a way that we can understand what is meant by the common expression 'the whole society'?

One solution to this problem is to create a professional type of knowledge savants who have esoteric, yet relevant knowledge that is somehow different, and better, than what ordinary people have. This is the solution favored by most 'empiricists', and Bourdieu is a famous example. But this brings about the problem of representation. How can these 'new' facts represent the 'true' picture of reality, when they are derived from a partial, though arguably 'better' perspective? Could this not be the 'overconfident sociologists of science who believe in the results of one science, namely sociology, to explain the others' (Latour, 1999:259)?

On what grounds can I claim there is such a thing as a 'social setting'? Is it a given, a social fact *sui generis,* in and of itself, like Durkheim claims? Like many other ambivalent phenomena (girlfriends, parents, money, status) the specificity of the social setting only becomes apparent in its absence. We often cannot see the way they operate when there, but when they are lacking we suffer. For instance, the social setting of work seems like a given. After all, we work someplace, we talk to people around us, and we relate our work to somebody, we present, perform, or practice our work in some setting where it is then considered relevant or not so relevant. With the advent of 'remote workers' working out of home, this apparent 'social setting' became problematic. Where should the workers work now? Where were they when they worked on the computer in their room? How could they participate with the others? To this end, many different attempts were made. Setting up hubs in the suburbs where workers could work distantly together from all kinds of companies, Internet based collaborative work software became a necessity. In short, the social setting soon reinstituted itself, if sometimes under the illusion that only the 'work related' communication patterns had to be taken care of.

In reality, the social setting of work is neither a social thing alone (in the sense that workers 'need' the presence of others), nor a communicative thing (that workers need to share information all the time). Much less is it a technical thing (computer software allowing documents to be sent back and forth), or a moral thing (workers need the support of others). Rather, it is all of these things in combination. The whole is simply not reductible to the sum of its parts.

At this point some would say I am exaggerating. People are different. Some of us actually thrive on working alone. Some of us work best in the shower, others in the mountains, still others in cafés, among people, or like Baudelaire's 'flaneur' in the crowds of the metropolis. But still, they have to admit, these are only moments in a long workday. The time of shared space will soon become apparent. After all, the whole meaning of work lies in the sharing. Or does it? The writer can sit in his lonely reflection for years before he comes out with a book. But he does. His efforts materialize. And this is precisely the point. In order for work to materialize, which is the essense of work, we need social stuff. We need the very matter that work is made of. Social stuff, not hybrid relations. Thus, the social setting reinstitutes itself at some point or other. It comes back, sometimes in disguise, as when writers allow people to read alone, but yet stay present as co-constructors of meaning

as 'readers in the text (Iser, 1978). Here, I shall take some precaution. In actual fact, the empirical setting might present challenges to both views - neither social or hybrid relations can be determined beforehand. The tensions between social, technical, and hybrid characteristics are explored in *Visionary Managers and Silent Engineers*

We have, previously in this article, accepted most of Latour's statements at face value. But let's turn one of them around. Latour says confidently about science studies: "the first sociologists made the same mistakes as the epistemologists. They looked for something special everywhere except in the most obvious and striking places: the settings". Latour's settings are settings, places, sites in their own right, most pertinently, the laboratories. He then goes on to argue that 'nothing special' happens (in the social and cognitive realms) among scientists in the laboratory.

Latour's sceptic attitude towards the social is not entirely caused by his philosophical academic upbringing, though related. In fact, Latour disagrees with the whole sociological background variable of 'social context' as an *a priori* taken-for-granted explanation. For instance, a sociologist might talk about how 'culture' (as a whole) affects ubringing, how 'family' influences 'polity', and the like. These convenient 'social systems' can, once established as reference points in the (functionalist) literature, be used as background explanation to almost any phenomena. By contrast Latour (1999), and with him also Law (1992; 1994), and Callon (1987) claim that you need to show the exact relation each component has, and you need to introduce only those actors that matter. Law (1992) says it is important not to start out assuming the existence of what we are going to understand. Instead we might want to assume that interaction is going on, and then try to pinpoint this interaction.[6] Thus, the strong point of ANT, or actor-network theory (Latour, 1999; Law, 1994; Callon, 1987) is to point out that it 'could have been otherwise'.

To sharpen the point, Callon (1991:155) claims networks are not in the actors, but is produced *by* them. Techno-economic networks locate the action *between*, rather than within or merely outside of actors as consequences. Actors could be hybrids - collectives, texts or individuals - but are only actors if the empirical presence as intermediaries make them

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[6] The assumption that interaction occurs, of course, can also be criticized. Non-interaction is also possible, and any research project will start with some assumptions. Actor-network theory has not fully answered to this criticism.

interesting (Callon, 1991:141). Secondly, networks are never completely stable, but strive towards stabilizing. Thirdly, there are interesting associations between social and material intermediaries.

This saves the ANT point somewhat for its precision, but is still unsatisfactory. The good point that actors (in the everyday sense) are also networks, and could seldom be attributed total authorship to composite actions is not enough to irradicate the valid status of social relations in settings where humans dominate the scene. While Callon (1991) makes a better attempt than Latour in activating social elements as possible actors, he is slighly too utilitarian for many scholars' taste. Callon seldom attributes to humans another position than as a 'market force'. Among scientific, technical, and market relations, there is: "a market pole which refers to users or consumers who more or less explicitly generate, express or seek to satisfy demands or needs" (Callon, 1991:134).

I have previously described Law, Latour, and Callon as if they were my academic bedfellows. It is therefore with great regret that I have had to be somewhat unfaithful. But as with all deceit, there is a reason behind. And here it comes. Paraphrazing Latour I could say that 'the first ANT theorists made the same mistake as the scientists, engineers, and sociologists of globalization. They looked for something special everywhere except in the most obvious and striking places: the *social* settings'. And, here we do not have to fall into the trap of misconceiving a social setting as merely a political setting (where values, status and interests are involved), a polemical setting (where disagreements set the rules of the day), or a non-rational setting (where emotions, 'soft' values, and 'social constructions' decide everything).

The social setting involved is of another nature. One might think of it as the way hybrid relations are organized. In fact, it is a confluence of people, things, spaces, and places, a repertoire of action, a habitus, set for human practices (the type of practices that are most interesting, anyway). Here we do not even have to bracket the actions of nonhumans, such as computers performing financial transactions on a daily basis, evaluating risk, and with learning capability (artificial intelligence). The social setting is the precise configuration of the action space that makes human practices possible. It is the limits that confines us, the structures we work within. At this point the realist might object: you are talking about networks, or structures, or something more, and certainly other than social actors. But to this I respond: show me the network that does not have an actor. Show me an actor without a social

setting. Show me a setting that is not social. We immediately realize that the lack of social setting produces one in return. There is an indefinite regress of social settings available, and as society grows more complex these settings multiply. The point is that there will only be one paramount social setting to one actor at a given time. For all the talk of role incongruence and parallel realities, most of us perceive reality as one. We might be disturbed by cognitive dissonance (Festinger, 1957), by lapses of 'schizofrenia', or by too many possible, and seemingly equally good options, but for most of us the confusion only lasts a moment. Our dream world ceases to exist in the practice itself. Or, at least, it takes its place in the social setting itself. It might actually embody it.

Returning to our attack on Latour, we now see that what is striking back is not things, but society. Society strikes back when the thing tries to sting. There is, in fact, an endless battle between things, humans, spaces, and places. Of course, the principal actors are humans in a humanosentric worldview. But still the other social forces count.

Just as Latour shows how things strike back, society and the social strike back also. Society exists, with moving force, if and when enough people 'say' it does (they construct it as a credible factish). Even though social science historically has tried to 'represent' both Society and Nature, this does not mean that society did not exist before social science and sociology, just like nature existed before natural science (or didn't any of them, monsieur Latour?).

We can, thus, show that both Castells and Latour commit the double fallacy of forgetting the physical constitution of the humans. Humans, who in fact *embody* the social, i.e bodies in this respect are things, dasein (Heidegger, 1962), things-in-the-world whose very materiality provides its own impetuses to action, communication, and resistance (see Merleau-Ponty, 1962; and Bourdieu 1996; among others). They reject the social on the basis of the thing, forgetting the thing that is the social. This is a paradox, but seems to evade their theories.

The way things work is through a triple machine of symbolic, human, and thing-like practices that together create 'society' by way of (1) the social imaginary as a dynamic structure (2) the gift (as a physical and symbolic exchange) and (3) the effervescence of 'presence' and the present (time). Combining basic insights of French sociology (from Maffesoli (1996), Mauss (1954), and Durkheim (1915) we grasp the notion of 'the social' as a fact sui generis, but that we do not have to decide as such until after we discover we need this term.

When I previously said I would study people, things, and information, I mentioned the variable they all depend on, that is, *place making*. While *space* is pervasive and emerging as an analytic category, in a sense *place* is where the action is, that is, where *Internetted* spaces, old people, new things, and complex information all materialise. Place is the sine qua non of our practices.

In sum, factish reality, unfaithfully following Latour (1999) is how we live with globalization, technology and mobility. What holds all of this together is the making of credible versions of reality by actors whose social endeavors produce composite factish accounts. In this process, material, technical, symbolic, and social resources are used. However, slight disagreements on the meaning of ANT theory, might not necessarily stop the fruitful deployment of concepts derived from Latour (1999) and Callon (1987; 1991) although some caution is necessary. I will now turn to the application of factishes.

Exploring *factish* productions

While Latour's polemic and very French attack on the notion of society might have its problems, Latour himself seems to go on constructing society-like and very useful sociology. This is an advantage, and saves him. Therefore, I will spend a great deal of energy trying to apply his basic insights, if not his 'system'. Latour's notion of factish as a hybrid of fact and fetish explores the making, composition and presentation of reality. The five articles that follow this introduction could themselves be characterized as factishes. Looking at the making of factishes like 'Nomads', 'Nets', 'Elites', 'Space/Place', and 'Globalization', I extend Latour's (1999) analysis of the factish phenomena by exploring their mode of production. I also introduce some concepts of my own, *notably nomadic knowledge work*, *place making*, *convincing work*, and *visionary practice*.

First, access is mediated by the invocation of expertise (Giddens, 1990). Elites, in a knowledge society perspective (Stehr, 1994) become switchers between networks (Castells, 1996). In *Elite interviews as place making* I explore whether the therapeutic, the journalistic, and the investigative perspective is helpful when studying up; that is when trying to get access to elites in order to study their practices. Elite interviewing pinpoints the microdynamics of research work. Status relations, as well as traditional research practices, however, are

challenged. To what extent can interview practices be completely virtualized?

Second, in *Visionary Managers and Silent Engineers*, I investigate the tensions between marketing and technological development of mobility enhancing technologies in the Norwegian Telecom company Telenor. Applying a social shaping approach to visions and technogies (Bijker & Law, 1992; Williams & Edge, 1996), I look at how technology is talked about across departments of a major company that has several office locations. How are American visions of 'work anywhere, anytime' domesticated? How is the notion of the 'nomade' brough to the forefront? Are engineers seduced by these visions? In one successful advertising campaign of 1997, Telenor Mobile communications boosted an image of a pair of jeans. "Email in your pocket", as the text read. Surely, the most basic necessities fit in the back pocket of your jeans. Quite strikingly, however, the same notions of advanced mobility were not shared. Each employee appeared to domesticate his own personal vision based on experience. What does this say of vision making?

Third, in *Organizing the nomadic workplace*, I explore how knowledge workers operate between community and cyberspace. The case studies are Awarehouse, Cisco, Telenor, Picostar, Campsix, and Berkeley Incubator - telecom companies, community work-spaces/innovation houses, or business incubators. Analyzing knowledge communities, workers, and global practices in Norway and the United State, the aim is to identify the pragmatic space between work practices and technological breakthroughs, questioning the meaning of 'social' and 'physical' aspects of work. Could it be that the nomadic workplace still has a meaning and that computers do not make workers choose either virtual or face-to-face, but allow both? How are pragmatic decisions between those options made?

Fourth, in *Space over Place: situated high tech practices in Silicon Valley* I find that innovative regions have knowledge saturation developed through time so that it becomes a cultural, technological, and knowledge-based reportoire. These processes occur in face-to-face relations through time. Work, in this situated sense (Suchman, 1987) occurs through and between communities of practice (Wenger, 1998). Actually, the factish of space/place could be construed as misleading. In a sense, the 'setting' constructed in this article is a hybrid of both space and place, but feels like a community still, much like Bourdieu's (1996) habitus explains how practices are embodied habits, structured, yet still active and still structuring. Properly deconstructed as such, then, could

high tech practices be considered 'advanced' and 'avant garde'? No doubt, knowledge workers react to globalization in much the same way as does everybody else. Adapting it, integrating new elements into old habits. In fact, the way knowledge is *stirred up* in entrepreneurial encounters between start-ups and venture capitalists is similar to what Durkheim described as the creative and exfoliating energy of tribal gatherings. Especially, we can see this in the Rooftop parties in San Francisco described in the article. Here, the effervescent encounters of sexual, epistemic, and networked Internet workers defy classification. We are reminded of Durkheim (1915:246-247):

> "The very fact of the concentration acts as an exceptionally powerful stimulant. When they are once come together, a sort of electricity is formed by their collecting which quickly transports them to an extraordinary degree of exaltation…This effervescence often reaches such a point that it causes unheard-of actions".

Fifth, in The Visionary Practice of Globalization: How the branding of high tech organizations occurs in everyday life I find that technological visions are co-produced by visionaries, knowledge workers, and policy-makers - but not only through 'on-the-job' diffusion. Rather, the 'everyday' of knowledge workers is focalized. Technology as such plays a lead part. Here, I follow Latour (1999) and Fischer (1992). When dominating our 'symbolical environment', the uptake by users and 'abusers' works in such a way that the society of globalization appears as a readymade and unquestioned reality. The most powerful factish within the factish is 'virtual society' which essentially would give life to Cairncross's notion of 'death of distance'.

In the end, could it be that we are neither global, nor local, glocal (globally 'inscripted' in our local efforts), or lobal (locally 'inscripted' in our global efforts) - but rather all of those at the same time? Or better, are our practices continually shaped by other humans, other places, spaces, and things? Are these artefacts that mobilize on behalf of themselves, others, for other things, other places, or other spaces in a continual effort to have an impact on the very hard felt 'social setting' which they themselves embody every day? Their everyday practice might be considered to have a 'paramount character', is situated, embodied if you will, yet with the sheer force of imagination, translation, enrolment, and habitus it comes together sometimes as a whole, sometimes as fragments, but always as a total sum sui generis.

Nomadic knowledge production, is a condition where, in some sense, the scope of the social is reduced. Social space, in fact, is not only a measure of your total number of relationships with others, it is also a measure of the content of such relationships, not to say the function and practice of such relationships.

In fact, space/place can be conceived of as an artificial opposition. Precisely because places are real, they are overcome by spaces. Precisely because of the proliferation of places, the spaces are allowed to operate (for they themselves consist of places, ultimately).

We have expressed voices that lead towards a 'pocketing society', where essential features of our practices can be 'picked up', as it were, and carried on with across great distances. The complete *theory* of such a 'pocketing society' is the task of a future project. The trends are fresh and the perspective challenges the very framework and limits of my original topic. However, some questions might be indicated. Are we moving towards a society where the essential elements are portable, but where practice is situated? How are global, local, and hybrid forms of work, commitment, community and individualism emerging? I will give a partial answer by exploring the tensions between spacing, placing, and identity among knowledge workers in contemporary society. A society that moves towards the global, the Internetted, and the networked by ways of increasing mobility of most goods and personell. What follows is an attempt to make sense of the hybrid relationships between social, technological, fact, and fetish - towards an understanding of how the factish of 'Information Society' becomes, evolves, and changes as collectives mobilize artefacts and people in long networks, at work, and in everyday conversations. In doing so, the so-called New Economy will also find its way into the argument. During the project that lasted three years I saw the rise and fall of the New Economy culture, territory, and adherents. It is partly this process that justifies the title: what the Net can't do. Partly, of course, it is more fun to talk of things that cannot be done when they are safely at a distance. Whether this is the case is open for discussion.

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2. Getting Connected: How sociologists can access the high tech élite[7]

Abstract

Elite studies have been relatively neglected in the qualitative methods literature (Coleman 1996:336; Hertz and Imber 1995). As a consequence, the interview methods literature in the social sciences does not adequately address the issue of access to elite interviews. Nor does it adress the elite interview process itself (Breakwell et al. 1995; Brenner et al. 1985; Crabree and Miller 1992; Fog 1994; Fowler and Mangione 1990; McCracken 1988; Stewart and Cash 1997; Sudman and Bradburn 1982; Weiss 1994). Despite its élite sample (scientists, engineers, policy-makers) the science and technology studies (STS) community suffers from the same lack of attention to access, with Traweek (1995) as a notable exception. The article discusses the small literature on qualitative elite studies (Hertz and Imber, 1995; Walford 1994) as well as contributions on elite interviewing (Burgess 1988; Cassell 1988; Dean, Eichhorn, and Dean 1969; Dexter 1970; Moyser 1988; Spector 1980; Thomas 1995). Seeing access as an ongoing, precarious process, the article recommends improvisation by ways of a threefold journalistic, therapeutic, and investigative *modus operandi*. The article draws on a study of the situated nature of high tech practices and is based on interview experience with knowledge workers, experts, and high tech CEOs in the United States, Italy, and Norway. As well, it brings experiences from a previous study of regional innovation in Norway and Great Britain (Thorvik and Undheim 1998).

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Introduction

While a substantial part of the science and technology studies (STS) literature investigates people and settings that we normally would classify and regard as elite, relatively little is written about how these groups and settings were accessed. However, access to high-energy physics labs, molecular biologists, or NASA scientists, is not self-evident. In fact, we should assume that there must have been many barriers before access was obtained, restrictions that were encountered underway, and many missed attempts at access that are not reported. This makes access a more interesting phenomenon, a feature of STS research in need of more sustained reflection.

In addition, within STS there has been little explicit discussion about what characterizes the relationship between researcher and informant as crucial moments in the research act, with exception for Hess' (2001) recent cleim about the co-production of knowledge between scholars and informants in STS ethnography. I will not speculate at length about the reasons for this neglect, but the fact that STS is an emerging subject, especially compared to the groups it attempts to study, and the very practice they uphold - 'Science' - may have something to do with it. Élite studies are irrevocably immersed in issues of power, domination, and authority, but also in issues of exchange, reciprocity, and altruism. Knorr-Cetina's (1999) experience is that 'it can't do any harm' often is the best legitimating voice of leading figures when trying to explain the presence of sociologists in their labs:

> "[…] many thanks to Pierre Darriulat, who, at an early stage was the first to allow us in [the particle collider experiment UA2 at CERN in Geneva] - even though, as he told me at the first contact over the phone, he did not think this research would lead anywhere, he believed that UA2 was an open environment and that it should depend on participants what they did with us" (Knorr-Cetina 1999:vii).

Researchers need access to people, settings, materials, and documents. Access implies inside knowledge, and is a precarious, ongoing, and renegotiable process (Johnson 1975). Traweek (1995) is a case in point. She investigates the powers at play when a young, female researcher ventures into high-energy physics labs in the US, Japan, Switzerland, and France. Sometimes ironic, other times bitterly laconic,

Traweek (1995:48) recounts how she, in fact, learned about science, access and sexual dynamics:

> "I learned that wearing my miniskirts to the lab reduced the physicists responses to one […] Thirty years and fifty pounds later I found that in Japan I was assigned [the role of] *obachan* […] This might be translated as auntie".

Traweek (1995) compares access work to the characters at play in *My Fair Lady* (Shaw 1941); Eliza, Henry Higgins, Mrs. Higgins, and Colonel Pickering. In fact, Henry Higgins uses all of them to build his 'voice over', to give voice to 'Science'. While Traweek clearly identifies with Eliza, the seduced girl who must re-learn to speak (Traweek 1995:39), the girlish attitude could also lead straight into Henry Higgins' 'innocent' scientific experiment, or in fact to claiming to be a technical device - "I am a detector" (Traweek 1995:39). Studying up, to Traweek, is also about watching access relations among her research subjects. In order to counter their empire-building male counterparts, the Japanese women physicists the studied had devised networking strategies to get business donations of expensive equipment. Traweek (1995:49) also highlights how Japanese high-energy physicists use *bachigai*, outsider positions, *gaiatsu*, foreign pressure, and *kokusaika*, the concern about Japan's identity in global politics, to build support for new labs like the Japanese National Laboratory.

But while many STS people may have followed Laura Nader's (1972) anthropological plea to 'study-up', Traweek (1995) seems quite alone reflecting about what studying-up means as a strategy of inquiry. In the anthropology community at large access is embedded in discussions of establishing rapport in the field. In the classic accounts of Goffman (1961) and Garfinkel (1967), as well as in Hannerz (1969), Van Maanen (1988), and Clifford and Marcus (1986) we find extensive descriptions of 'entering the field'. Ethnographically oriented studies or handbooks like Marshall and Rossman (1995), or Hammersley and Atkinson (1983) also discuss the topic. However, most of these accounts do not take in the 'elite' problematic as such. Typically, anthropologists find people 'very curious and very friendly' (Rainbird 1990:89).

By strategy of inquiry, I intend the skills, assumptions, enactments, and material practices of the researcher (Denzin and Lincoln 2000:371). I invite the reader to reflect on what happens when interviews are embedded in power asymmetry. This is meant as an effort to identify some methodological issues related to élite interviewing, pragmatic as

well as principal, in order to invite a more sustained reflection on such matters. Even if ethnographic approaches may have the STS ideal, given the importance attached to so-called laboratory studies (Knorr-Cetina 1995), there is little doubt that interviews loom large among the research techniques applied by STS researchers.

Many scholars today argue élite influence on society is growing because of globalization, high tech, and the emphasis on knowledge and expertise (Castells 1996; Giddens 1991; Knorr-Cetina 1999). Accessing this emerging high tech élite poses an additional challenge to social scientists. STS is potentially at the center of this debate, because of its ongoing access to scientists, engineers, technologists, and other professional and élite groups.

The interview in social science methodology

The scarcity of STS contributions that explicitly address methodological issues may well be understandable when we notice the abundance of methodological contributions in the social sciences at large. Still, the relevance and validity of the standard fare for STS type of studies should be addressed. The interview is a good starting point.

Most research strategy includes the use of interviews in some form. The literature on interviews is vast and diverse (Breakwell et al. 1995; Brenner et al. 1985; Crabree and Miller 1992; Fog 1994; Fowler and Mangione 1990; Holstein and Gubrium, 1995; Kahn and Cannel, 1957; McCracken 1988; Mishler 1986; Spradley 1979; Stewart and Cash 1997; Seidmann 1991; Sudman and Bradburn 1982; Weiss 1994).

However, interviews with the elite present an additional challenge. Here, access must be negotiated against the rigidity of public or corporate bureaucracy, being aware of how governments, policy-makers, or institutions see interviews as potential threats to the public 'brand' (Aaker 1996) or subjective reality constructs of the institution itself and its members. Actually, Spencer (1982:25) found élite members of the US Military Academy West Point were honestly committed to the military 'mission', but were wary that an interview might threaten their career and their identity. Likewise, the exchange itself might not be viewed as balanced. After all, the value of contributing to social science is highly symbolic, and seldom contains direct, tangible exchanges that contribute to the interviewee's status or well being (Kahn and Cannel 1968:149). Thirdly, the legitimacy of the researcher might be in question (Spencer

1982:24). Leaders ask what right researchers have to intrude in 'their organization'.

Social scientists too rarely study up (Ostrander 1993:7), maybe because it has been assumed to be easier to 'study up' than 'study down' (Lofland and Lofland 1995:25). At least, discussions of such methods are scarce, and some claim it has been neglected in the literature (Coleman 1996:336; Hertz and Imber 1995). Conceptual confusion might complicate the matter. While Nader (1972) instigated the debate using the term 'studying-up' to describe non-natives, westerners, and élites, discussions on this issue are now found under several headings. Some of these are: 'access' (Chandler 1990:124), 'negotiating entry', 'getting in' (Lofland and Lofland 1995:31), 'reciprocity' (Rossman and Rallis 1998:105), 'trust relations' (Johnson 1975), 'sampling' (Lee 1993), 'studying-up' (Cassel 1988; Nader 1972), 'gatekeepers' (Broadhead and Rist 1976; Hammersley and Atkinson 1983:38), 'elite oral history' (Seldon and Pappworth 1983), 'researching sensitive topics' (Lee 1993), or 'participant observation' (Jorgensen 1989). However, while some of these volumes deal explicitly with interviewing elites, none are exhaustive in their understanding of the matter.

What types of élites do social scientists study? A short list of élite monographs will do some justice to this question. For instance, we find public figures (Spector 1980), female leaders (Puwar 1997), surgeons (Bosk 1979), national defence intellectuals (Cohn 1987), nuclear weapons researchers (Gusterson 1996), physicists (Knorr-Cetina 1999; Traweek 1995), upper-class women (Ostrander, 1984), and top business executives (Thomas 1995). Elite typology is complex and will not be discussed in detail. See Moyser and Wagstaffe (1987) for a useful introduction.

Elite studies have been important in the social sciences at least since Mills' (1956) classic study, but qualitative interviews are not so much discussed in this regard. While the literature is not abundant, a handful of monographs, edited books, articles and book-chapters deal with access to elite interviews or observation (Cassell 1988; Coleman 1996; Dean, Eichhorn, and Dean 1969; Dexter 1970; Grønning 1997; Moyser 1988, Moyser and Wagstaffe 1987; Ostrander 1993; Spector 1980; Spencer 1982; Thomas 1995; Winkler 1987). Most scholars agree access is time-consuming and entails coping with rejection and scepticism by both formal and informal organizational gatekeepers that constrain fieldwork and interviews (Smith 2001; Thomas 1995; Jackall 1998). However, the issue of access to high tech knowledge workers, CEOs, and managers in particular is not so much discussed. Notably, there is little practical

advice on how to do such studies if you do not happen to be 'connected' to a Business School, or have academic or public credentials that ensure access almost everywhere. Exceptions are Brannen (1987), Galaskiewitz (1987), Hoffmann (1980), Thomas (1995) and Winkler (1987) who underline the importance of inside connections, persistence, social skills, and improvisation.

Winkler (1987:135) states access always involves face-to-face negotiation, and demands time, effort and risk on part of the researcher. His best strategy was to arrange 'group discussion' with drinks at a business venue just after the close of the business day. One reason for success was that the élites are anxious about their status and seek confirmation in such events. Second, the practice of inviting others you have not met, and going to business events to 'network' made the turn-up rate quite astounding.

Access has been particularly tied to discussions of research ethics, and with good reason. Where access is problematic, there is always an ethical issue involved. The research community has responsibility towards the subjects or institutions under scrutiny, towards society (potentially threatening information), and towards the researcher. For example, when doing research on deviant groups, particularly hazardous settings exist, and situations might arize (Lee 1993:9). For instance, Friedman's (1990) covert work as a Hollywood actor, a High School substitute, and a religious school supervisor brought about several ethical and personal issues; he got 'false' friends, was bored because of routine work and low status, and was challenged on his truthfulness and sincerity in religious matters. Although some advocate avoiding the traditional protecting measures of confidentiality and anonymity when writing about public figures (Spector 1980:99), this poses ethical issues. Mainstream research ethics advice, however, is to be 'truthful, but vague' about your objectives (Taylor and Bogdan 1984), and keep anonymity. For a thorough and thoughtful discussion of ethics in covert research, see Lofland and Lofland (1995).

Even though qualitative research is well suited to study élites, this research tradition is most frequently associated with studies of marginal or powerless groups. This may be inherited from the Chicago School tradition (Lee 1993:12). Studies of deviant groups, outsiders (Becker 1966), gang-members (Whyte 1943), and delinquents (Shaw 1930) have set the dominating strategy of inquiry. In effect, this tradition meant that the powerful were neglected in favor of the powerless (Smith 1988).

After the Chicago School decline, interviews for some time became the domain of empiricist survey research. In the United States, these were lead by Lazarsfeld (1962) and Merton (1947). Here, quantification and statistical sophistication were key strategies. What Lazarsfeld (1944) called 'open ended interviews' were supplying measures, in that they do not set fixed answers in terms of which a respondent must reply. Such interviews had their major use in (a) clarifying the meaning of a respondent's answer, (b) singling out the decisive aspect of an opinion, (c) deciding what has influenced an opinion, (d) determining complex attitude patterns, (e) interpreting motivations, and drives and (f) clarifying statistical relationships (Lazarsfeld 1944). With the empirical tradition, 'interview error' became a methodological topic (Sudman and Bradburn 1982). The inheritance from that time is found in textbooks and articles on qualitative methods, as well. For instance, in the International Encyclopedia of the Social Sciences, Kahn and Cannel (1968:149) write:

> "[…] the research interview has been defined as a conversation with a purpose [and] may be defined as a two-person conversation that is initiated by the interviewer for the specific purpose of obtaining information that is relevant to research. […] In the research interview the respondent is led to restrict his discussion to the questions posed".

Clearly, this is a quite rigid, quantitatively inspired expression of the research interview. Subheadings like 'the interview like measurement' (p.150), expresses a clear positivist mindset. Here, the conception of a strict 'interview guide' is still strong and interviewing is a research technique rather than a mode of inquiry.

The 1970s-1990s brought about a resurgence of qualitative inquiry. Glaser and Strauss (1968) outlined 'grounded theory', an approach where both research design, theory, and method is deliberately 'stumbled upon' because of the richness of 'data' when you approach your research setting with an open mind. Nevertheless, they have since developed rigorous rules of coding procedures. Also, Garfinkel's (1967) ethnomethodology, and Goffman's interaction analysis (1961) brought attention to the value of unfocused face-to-face meetings.

The early 1980s brought feminist methodology. Oakley (1981:55) states that a feminist approach is needed when interviewing women. In her account, interviewing women is a cozy, friendly and sisterly exchange of information. Similarly, other feminist accounts discuss empathy, trust, and ethics (Finch 1984). In the 1980s, the long, in-depth

interviews were again in fashion, and McCracken (1988) is the most cited guide from this era. He states interview studies begin with literature reviews, continue with an examination of your own associations and cultural categories, and end in the final questionnaire which will consist in a set of biographical questions followed by a series of question areas. Each of these will have a set of grand-tour questions with floating prompts underway. It will also consist in planned prompting in the form of 'contrast', 'category', 'special incident',' and 'auto-driving' questions. The 'rough guide' specifies topics, but the interview itself is negotiated (McCracken 1988: 37). However, the empiricist advice from survey research still holds the stances: "To avoid bias, the interviewing must be done nondirectively", and "questions must never be asked in a leading or directive manner as this exerts pressure on informants to answer in particular ways (Brenner et al. 1985:151).

In reaction to this, a narrative tradition also has emerged (Mishler 1986). When we conduct interviews, states Mishler (1986), we are *pattern makers* more than we are *pattern finders*. In historical scholarship, too, this trend is prevalent. Elite oral history, Seldon and Pappworth (1983:36-52) maintain, gives facts not recorded in documents, like the spirit in which a document was written, insight into the personalities of leaders, clarifications of factual conclusions, underlying assumptions and motives, but also atmosphere and color. In fact, the interview relationship itself might be personally enriching.

The 1990s, finally, is a decade of consolidation for qualitative interview methods. By now, interview studies have gained acceptance in more mainstream American academic journals, and the qualitative versus quantitative controversy is put to rest, at least for the moment. Sensitive research topics (Lee 1993) receive major attention, and feminist scholarship is in vogue. There is no need to hide that intensive interviewing seeks to discover the informant's *experience* of a particular topic or situation (Lofland and Lofland, 1995:18).

But experiences are more mixed. For instance, Ball (1994:113) who accessed women MP's, sees interviews as: "events of struggle […] a complex interplay of dominance/resistance and chaos/freedom". Also Cotterill (1992) incorporates issues of friendship, openness, and power. Feminists stress the need to 'learn to listen' (Anderson and Jack 1991:11). Still, in the literature we find that 'difficult people' to interview still tend to be workers, women (Faimberg 1996; Kaul 1999), people with learning difficulties (Booth and Booth 1994:415), children, and the elderly (Breakwell, Hammond and Fife-Schaw 1995:236). Depth interviewing is

seen as a means of giving 'vulnerable subjects' voice in the making of their own history. There is the fear of forcing or manipulating individuals into discussing topics they do not want to talk about (Anderson and Jack 1991:13).

Similarly, the importance of an improved discourse on élite interviewing may be emphasized with reference to the increased interest in networks and knowledge workers (Castells 1996:198). The emerging network élite consists of 'switchers', initiators of networks with a huge amount of what Granovetter (1973) labeled "weak ties". These are potential social relationships that extend your networks exponentially in an important direction. In the words of Malcolm Gladwell of the *New Yorker Magazine*, switchers 'stand at the intersection of different worlds, connecting people, creating opportunities, and spreading ideas' (Gladwell 1999:52). Also called the digerati (Brochmann 1995), they include the traditional elite like politicians, experts of all sorts, scientists, businessmen, famous people, musicians, and artists. The new aspect is that they are intrinsically connected to the new, growing businesses in information and communication technology. These may be the people we are looking for in future élite studies. The question is how to approach them. How to make them give us a timeslot in their incredibly busy schedule. And once we have accomplished this: how to get something useful out of the interview itself. The importance of being able to access this élite is growing. However, this emerging high tech élite may be more difficult to research than the scientists and engineers of traditional STS research because of their more intimate relationship with politics and business and because of the symbolic importance attached to being busy and unavailable to people outside of their networks. So how may we get to interview them?

In the following, I will try to describe a set of strategies of access. This is based on experience from previous and ongoing research that have necessitated access to the high tech élite, like CEOs, scientists and policy-makers in the United States, Norway, Italy, and Great Britain. This experience emphasizes the need for a reflexive approach, but also a particular daring, directness and inventiveness. In this respect, we may learn from other professions that are interested in the same group of people. This is necessary in order to transcend the technisist, neo-positivist attitude that still characterizes a lot of interview methodology.

Shifting modes of inquiry

The interview appears to be a situation of asymmetrical exchange. The researcher receives information, without giving the informant anything back. To remedy this situation, it is suggested that the researcher may pay her debt by acting as a public voice of the informant group or use the information as a source of suggesting improvements. However, this perception overlooks the possibility that there may be other rewards in being interviewed. It may be a change to present one's views or arguing one's own version of events. It may even be interesting, since many interviews also offer opportunities for the exchange of points of views or experiences.

To understand these implicit advantages of being interviewed, we may draw upon experiences and images from other types of interviews than the research interview. I will argue that it is advantageous to the approach to high tech élites that we at least consider in a metaphorical manner what interviewing may mean when performed by other professions. In the following, I will briefly explore three such mindsets or modes of inquiry: the "journalistic", the "therapeutic" and the "investigative". The use of quotation marks is meant to underline that this is not a study of what journalists, therapists or detectives really do. Rather, I use some commonplace ideas of their roles as a way of exploring different ways of doing interview research in relation to the high tech élite.

The "journalistic" mode

Sociology and journalism has for long has a dubious relationship. Especially the Chicago school, in particular Robert Park, was close both in method and writing-style (Lindner 1996). More aggressively, Douglas (1976) argues for an investigative, rugged, combative style of inquiry modeled on investigative journalism. Thus, there are several reasons why social science should reflect on how journalists operate. Some journalists do more than 10 000 interviews in their career, a number very few social scientists aspire to. While you could make the case that journalistic interviews have a different purpose and go after different things or claim research interviews go deeper, we find there are numerous lessons across these boundaries. Moreover, journalists are already out there doing interviews, affecting the ways political or other élites understand the interview situation (Puwar 1997: par 1.1; Williams 1980:310).

The journalistic approach is intuitive, quick, active, and the journalist is not afraid to ask, even to ask twice. The journalist often takes keynotes during the interview, instead of, or in addition to listening to the tape-recorded version. This is both quicker and more apt for catching the core issues. Then you might not need to write out the entire text, and you only have to listen to parts of it - and you save a lot of time.

Journalists are used to working through acquaintances, contacts, friends, and secretaries. As a researcher you might gain from mastering social situations to the extent that you can fire away questions, be ready to jot down a few lines, be happy with a few comments, and do interviews on the spot, in elevators, or on the move. As Ostrander (1993:25) points out, taking advantage of chance meetings or one's own social contacts may be as important as careful planning. In short, the key informant approach is the treatment you get from journalists. They do not care that you are a researcher. They want the facts now. That is in five minutes. While this is a source of tension for both groups, they can learn from each other. Journalists have the type of active knowledge-seeking that Castells (1996) claims characterizes contemporary society, where information flows freely, quickly, and often through the virtual grapevine. If you want to get something out of your empirical attitude, you might not have the luxury of waiting for people to call you. I will illustrate this with an account of how I snowball sample recruited, accessed, and employed a journalistic, improvisational mindset.

I have said that using informants is a key, both to acquire an interview (get access), and to know what to look for once you have got it (maintaining access). Key informants are people with special knowledge about your subject, or access to data you can not get to, or that you need to familiarize yourself with (Goetz and LeCompte 1992:75). You can call them up many times, check information, acquire new contacts, or ask additional questions. Some informal contact with key informants is useful, and entails less work than people you have consciously found, called-up, arranged an interview with, and where the transcript is written out. You may combine these loose types of interaction with more standard research interviews.

But how do you choose these particular key informants? In my project on the telecommunications industry, one informant came as a result of a phone call to the Regional Information Director. On my questions about the Telenor *Nomade* campaign, she directed me to several different people working at Telenor Mobile, who were responsible for the general marketing campaigns. The people I sought

were not there, but the secretary told me that a person who now had left the firm really was the person responsible for the idea itself. I asked for his number, and called him repeatedly, with no luck. But after a few days he suddenly called me back, and I could hear by his voice that he was ready for a phone interview here and now, not a planned encounter next week that would take him even more energy.

I then dropped everything and improvised an interview, still in the middle of constructing an interview guide, and somewhat unprepared. After 20 minutes, however, he had given me several interesting reflections as well as several good hints about new informants. This is the real sense of the term "snowball sample". It is also the journalistic approach. With my traditional 'researcher' mindset I would be crippled and would have asked him to call me back when I was prepared. But social science is a creative venture not to be controlled by rational planning alone. We need to improvise and make use of Mills' (1959) *sociological imagination.* If you cannot improvise, most data is out of reach. After all, data is somewhat ephemeral.

Hans-Wilhelm Steinfeld, 48, is a Norwegian journalist who has lived 12 years in Moscow. Respected for his accomplishments as a reporter, but also for his temper and powerful presence, he has done hundreds of interviews, both for TV and for radio. A former correspondent to Russia, he explains his approach in this way:

> "In the Secret Services there is the principle of the Pilot fish; you attach yourself to somebody you think can become something. In the case of Gorbatchev [whom he has interviewed ca. 40 times] and Jeltsin it was this principle that counted, in combination with the old axiom from Russian plan economy: "Good planning can not compete with pure luck".[8]

Steinfeld's luck was to live 12 of the most turbulent years of Eastern Europe in Russia. His dissertation brought him to Northern Caucasus, where he met the local party leader Mikhail Sergejevitz Gorbatchev: "I had no idea, then, how strategic my acquaintance would become", Steinfeld states.

Apart from a talent in meeting the right people, networking skills also include some down-to-earth methods that could be used by anyone. For instance, it is always important to remember who and what you

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[8] Mail-interview with Hans-Wilhelm Steinfeld, 15.03.99.

represent, and employ that in different ways that suits the occasion. Big is not always beautiful. Reminding us of Traweek's (1995) experience as 'Eliza', Steinfeld remembers one particular occcasion of power dynamics, acccess and improvisation:

> "I always had the privilege of representing the Norwegian Broadcasting Corporation. It is small, but respected. In the middle of May of 1980 there was a meeting between the American and Soviet foreign ministers in Vienna. Kevin o'Ryan from BBC and I went against the current, ignored the announced American press conference and placed ourselves outside of Hofburg castle to try for Andrej Gromyko. I approached Gromyko by pointing to my colleague, asking whether BBC and Norwegian TV could get a question. Gromyko looked aggressively at my BBC-colleague and said in English: 'Oh yes? BBC - the organization that knows everything in the world and maybe a bit more than everything?' I quickly pointed to myself and asked whether or not little, innocent NRK from Oslo then could ask instead, and we got a six-minute interview".

Now, what can we learn from this story? Many who refuse an interview are in reality afraid of not having enough interesting things to say to you. Contrary to what it might seem like, if you are famous or have a privileged position, you might never get them 'on the hook'. And when you do, what they say will be influenced by who you are. For this reason, famous scholars who have a public image are unfit for interviewing most of the time.

Secondly, Steinfeld cleverly uses the authority of the other person, then twists it to his advantage when he finds out this does not work. This is a move that could be described as re-translation of a discourse (Latour 1987). The discourse was about big broadcasting having high thoughts about its own role. Steinfeld turns this around, using Gromyko's own logic.

The "therapeutic" mode

Establishing rapport is about gaining trust, whether or not this is spelled out. Previous research points out that identity and trust play a key role in getting access (Johnson 1975; Lee 1993). Hoffmann's (1980) respondent discovered that he knew a member of Hoffman's family.

Insider status was thus granted, and considerable new insight on the recuitment of Boards of Directors was provided. We might not always be that lucky, but being aware of how identity plays into the process is still a key. In fact, the interview is a rare occasion for high tech leaders to open up, share thoughts and profit from the human touch and undivided attention that the interviewer provides. As the modern proverb goes, "It is lonely at the top". Even a leader might not have room for such self-exploration in his daily life. Often s/he finds being interviewed quite fulfilling (Coleman 1996:339). Feminists like Oakley (1981), Fog (1985) and Kaul (1999) share such a perspective. But to achieve it, we need to learn to listen:

> "Women often mute their own thoughts and feelings when they try to describe their lives in the familiar and publicly acceptable terms of prevailing concepts and conventions" (Anderson and Jack, 1991:11).

Therapeutic mode, however, does much more than helping the access to the 'muted' channel of woman's subjectivity. What we want to do, sometimes, is to grasp the situation. We want to react by intuition, discover by uncovering layers, much like the psychotherapist. We need to be observant. Maybe we even need to experience, in order to understand, as would be the phenomenological claim at this point.

We may share the urge to understand how the actor has experienced important life-events. We do not share the interest in resolving those problems, if they can not be remedied by that particular encounter (Kahn and Cannel 1968:149). That is to say, unless we really have a lot of time and want to enter a fieldwork informant relationship to this person, in the way that Whyte (1943) was able to befriend his main informant Doc.

Psychoanalyst Haydee Faimberg (1996:668) recommends listening to how the patient has listened to the interpretation. She then assigns new meaning to what he said, beyond what he thought he was saying, a move she calls "listening to listening". Therapeutic mode can be manipulative, smart, and cynical, but also calm and empathetic. The strong point of therapeutic mode is the way it makes you understand the interview relationship.

Many interviews become easy after you "get going". Why? Because you let people talk about themselves. If you manage to find a topic that's dare to your subject, you practically just have to steer the interview in your direction. This is what McCracken (1988) describes as "grand tour

questions". Only that you sometimes have to dig for a while to find it, it does not come prepared from your guide.

In a previous experience with interviewing CEOs (Thorvik and Undheim 1998), we often found ourselves being totally fascinated and immersed in the world of the other. Sometimes this is necessary, in order to 'get the whole story'. Instead of the promised ten minutes, we often got an hour's interview, just by showing up two people, and by giving exclusive attention. One example is our interview with an industrialist in Leksvika, an industrial township quite far off of Trondheim, Norway. We were impressed with what this person and his father had built up through the years, and made no secret about it. We overtly expressed our fascination with this 'industrial adventure' - an informant term we adopted. As a result, he took the time to give us anecdotes, and detailed insights that went way out of his prepared schedule. He felt flattered, and gave us the interview in appreciation. The interview became the backbone of our reflection from then on. It embodied the social entrepreneurial spirit we had been looking for.

On another occasion, I drove for two-and-a-half hours each way to interview the *Fylkesmann* of Nord-Trøndelag County. In her otherwise busy schedule, we had three hours together. She said it straight out: "If you come such a long way, you must think this is important. Then I do, too".

The point about the therapeutic mindset is easily interpreted as unethical because it appears to be manipulative. Thus, we need to be careful with this metaphor and the kind of manipulative practice it may suggest. However, it is important to consider the fact that an interview may be an opportunity for a kind of exchange of views and an expression of altruism that may make people feel important and even comfortable, relaxed and at ease. To overlook this fact may make us unable to understand the rationale for giving us access in the first place.

The "investigative" mode

Already Sanders (1976) wrote about the sociologist as detective. Sharing the fascination for physical evidence and physical features with the STS scholar, the detective is an investigative, methodic and curious type who dedicates him/herself to solve mysteries and problems. Supposedly, s/he investigates to resolve other people's mysteries, but as detective novelists reveal, detectives are most of all fascinated by solving

them. The detective wants to find out "what really happened", but in doing so, s/he is always testing theories (Sanders 1976:3).

Sociologists need to learn from historians, journalists and detectives how to tell a story, how to give an account of the turn of events. It is what people want to hear, anyway, and it is what they will remember. Giving a believable account of the turn of events is important. Especially when interviewing politicians who have their own political agenda, even in interviews: "one never knows if one has managed to access how things really are […] one might receive filtered, quick sound bites, that are cliched responses" (Puwar 1997: par 8.4). This is an occasion where the best detective novels can teach sociology a lesson. In the introduction to Dashiell Hammet's detective novel *The Continental Op*, Steven Marcus reveals the essentials of this powerful method:

> "The Op interviews the person or persons most immediately accessible. They may be innocent or guilty - it doesn't matter; it is an indifferent circumstance. Guilty or innocent, they provide the Op with an account of what they know, of what they assert really happened. The Op begins to investigate; he compares these accounts with others that he gathers; he snoops about; he does research; he shadows people, arranges confrontations between those who want to avoid one another, and so on. What he soon discovers is that the "reality" that anyone involved will swear to is in fact itself a construction, a fabrication, a fiction, a faked and alternative reality - and that it has been gotten together before he ever arrived on the scene. And the Op's work therefore is to deconstruct, decompose, deplot and defictionalize that "reality" and to construct or reconstruct out of it a true fiction, i.e., an account of what "really" happened" (Hammet 1974:xix).

We need to learn to use investigative mode to find out what exactly is going on in our field. We need to find the 'story line', the exact turn of events. What is the real agenda here? Who is hiding what from whom? Am I getting the right information? Who is holding something back? What is going on backstage?

For instance, in a study of Norwegian and Italian telecom carriers, I had one employee tell me: "it seems you are some sort of industrial spy. You cannot come to see our secrets. Are you crazy?" This person was some sort of a social scientist, but worked for Telecom Italia. So, they did not want me to run to their competitor.

A little later, when presenting my research topic to a Norwegian telecom employee, I knew that they were giving me the tourist explanation. So I experienced that he did not think I was interested, or capable of grasping the real issues at hand. The result was that they did not come up in the interview. In the end, if I had not been able to change his perception of me, and my ambitions, I would have to read it out from the context. Or, worse, I would have to come back. But many times, these things never catch my attention. If I forget to take the 'investigative' mindset, I risk taking everything I am told at face value.

What the investigative mode consists of, is a detailed inquiry. Without resorting to extreme Sherlock Holmesian methods, this means doing what otherwise is known as a cognitive interview. Cognitive interviews covers police interrogations, military briefs, lawyer interviews with clients, testimonials, in short, all type of interrogatives. This can, of course be done to children, adolescents, adults, elderly, celebrities, élites or novices. Cognitive interview is a powerful perspective because it points to the fact that events are very soon 'forgotten', or hidden behind the many layers of imaginative reconstruction, so familiar to anyone who has tried to get the 'truth' out of someone.

The cognitive interview was devised to improve eyewitnesses' memory by using mnemonic strategies which ask witnesses to think about what happened and encourage them to make as many retrieval attempts as possible (Campos and Alonso Quecuty 1999:47). In the legal context, obviously, the elicitation of complete and accurate statements from witnesses and victims is essential.

Although the police generally receives too little training, and should be informed by both laboratory and field methods from psychology in assessing and documenting eyewitness accounts (Fisher 1995:732), a lot can be learned from the police approach as such. Directness, authoritative behavior, and clear, short questions are all characteristics that could be applied with luck in other interview contexts. One study of cognitive interview techniques surveying 96 trained and 65 untrained police officers found trained officers were significantly more likely to use instructions to mentally reinstate context, use different orders, change perspectives and imagery. Frequently used techniques were to establish rapport, to report everything, to encourage concentration, to witness compatible questioning, and to give mental reinstatement of context (Kebbell, Milne and Wagstaff 1999).

Accessing élite settings

There is a notable difference between expert and élite interviews. Experts are often narrow-minded specialists, whereas élites are more generalists as ideal types. This demands a different approach. Among other things, the preparation for the interview is different. To experts you might need to show your familiarity with technical jargon, in order for them to take you seriously. To élites, who might be equally clever, or influential, a general grasp of the issues, and showing you have an overview can be equally in demand.

Now, these strategies could be combined with network technology. The opportunities of getting access to interviews could be summed up as improved communication tools and increased communication through the use of new, mobile media (Internet, e-mail, cellphones). The potential is, at first sight, that getting in touch with the élite becomes easier since availability is increased. Another advantage is psychological. Actually, some claim physical presence is higher valued in a network society, since the interview thus becomes a very real situation in the midst of mediated or virtual communication. But since élites protect themselves, they might be further away than before, just accessible to the 'insiders' (secretaries, family, friends, and colleagues). Increased mobility means people are difficult to find in their offices. Busy people also switch email accounts often. Also, the diffusion of technology might make everyone else catch up with you and your 'advanced' access methods.

Looking at the interviewer as a "journalist", a "therapist" or a "detective" could be done all at once. We need to be able to switch perspectives during the interview. They serve as complimentary mindsets.

Knowing why you will not get hold of a person is part of the research agenda. There has to be a reason why you are not deemed important, or why a certain source will not speak. STS has been concerned with this, but has not spelled it out as a methodology. Who you get access to, and also whom you think you might get access to, of course, will set limits to your research agenda. It limits you in significant ways, and it puts discursive frames to your thinking. Sometimes this is a threat to the treatment of the topic. Often, this is the case in qualitative studies in political science. Not every professor who is interested in US foreign policy gets access to the President.

Studying regional development (Thorvik and Undheim 1998) we interviewed 80 people from the power élite in the region of Trøndelag,

Norway, as well as national actors. Our sample included mayors, politicians, cabinet members, business leaders, bankers, industrialists and University professors. The sample choice reflected our desire to explore the reasons for pessimism on regional economic possibilities in one of Norway's most resourceful regions, for instance home of the largest private research institution of Northern Europe, Sintef, as well as the Norwegian University of Science and Technology. Getting an interview took from one to five weeks at most. We phoned up several times, faxed interview proposals, followed up, and did so several times, if necessary. Our proposal consisted in a brief description of our project and of ourselves. Most of all we made sure to point out why it would be so important to us that this particular person took the time to talk with us. To each person we had a different strategy. We always worked in a team of two, so I had to synchronize what I said to what my partner had said earlier.

Sometimes we did not take "no" for an answer, and said we needed to speak with this person. We could also play 'good guy/bad guy'. I would try to express how thankful we would be if we could get a confirmation now, he would call the day after, saying we had no more time, and needed to speak with our guy in person - now. Only one person refused to talk to us, and this was the Minister of Industry, whose aggressive and some would say ill-informed comments formed the background of our research agenda - the public view of our region's potential for growth and prosperity. His secretary maintained it was appropriate to talk to someone on a subsidiary level. We did not think so, but even persistent efforts to convince his secretary did not produce results. It is very likely that he was not prepared to defend his comments, and did not want more fuzz about the whole affair.

Intellectual craftsmanship is a lifestyle, an attitude towards your intellectual projects that has no off-hours: "the most admirable thinkers within the scholarly community you have chosen to join do not split their work from their lives" (Mills 1959:211). Getting access also means allowing yourself to get exposed to the problem, getting inspiration, getting into it. Mills (1959:211) wrote:

> "You do not really have to study a topic you are working on; for as I have said, once you are into it, it's everywhere. Your are sensible to its themes; you see and hear them everywhere in your experience, especially, it always seems to me, in apparently unrelated areas. Even the mass media, especially

bad movies and cheap novels and picture magazines and night radio, are disclosed in fresh importance to you."

Working in this way, as journalists or entrepreneurs, we get new ideas frequently, and are able to act upon them. Now, let us take a look at the issue Spencer (1982) and Mills (1956) raised; sociologists need to access the elites more forcefully and intelligently.

Borrowing Power from the Powerful

While previous research suggests using social ties, own status, and personal contacts (Hoffmann 1980:47), sometimes your own personal authority is not enough to secure access. Access might also be denied because your agenda seems threatening (Moyser 1988:119). To alleviate these problems, various strategies exist. Spencer (1982:29) suggests two strategies in order to access the Military Academy at West Point; either try to make an influential person pave the way, or become a journalist. Likewise, Lofland and Lofland, 1995:60) recommend the use of allies both to get in and to ensure continued access. Let us study a variation of this theme that contains using other people's authority as a benchmark of your own importance. The following is an excerpt of a phone conversation I had in March 1999:

> "I am writing a Ph.D. on ICT-based companies and their view on societal development", I start out, hopefully. "In this context I would much like an interview with Morten Lundal […]" The quick response pulls me back in the chair: "I think I can tell you immediately that he has no time for that […] we get a lot of these inquiries, you know!" Telenor Nextel CEO Morten Lundal apparently has a fierce secretary. Refusing to give up, however, I blast back: "But I think he will look at it differently […] I have chosen Nextel, Mobile and Corporate communication, [two Telenor subsidiaries, as well as the main corporate office] and I have an interview with VP Technology [name] on Friday". A short pause makes me hold my breath, but then it comes, surprisingly: "Yes [that is something else] where did you say you called from? I will notify you, so if you don't hear anything, call back around three."

The secretary changed opinion of me when I mentioned some powerful people. What I really did was to transform the discussion by claiming allies (Latour 1987). In Latour's (1987) terminology I was going

from weaker to stronger rhetoric. To students, graduate students, younger researchers and the like, these methods are vital, in order to bypass the important corporate veil of secretaries and other gatekeepers. What are the appropriate techniques for getting through this filter?

The most important advice is to try to find some commonalties between you and the high tech CEO or engineer you want to interview. (1) Draw on pre-existing contacts (élites, friends-of élites, family connections, school affiliation, or religious community). When face-to-face, or on the phone you may refer to a common context, like "we met at […]", even though the contact was ephemeral. (2) Your presentation needs to be brief and "self-important". There is no need for academic language, just get straight to the facts. (3) Be creative with e-mail. In my attempts to get in touch with CEOs, I often sent out five emails for each response, out of which only one became an interview. (4) With or without email, proposals can be sent directly to powerful people if you know their exact name, address, and use prominent letterheads, for instance from your university affiliation. (5) Especially with email and Internet, you can afford easy, cheap and quick follow-ups. Here, secretaries are they key. Once you have got your feet inside the door, their responsibility is to take care of your inquiry. They will go to great lengths not to miss appointments. (6) With email you may obtain quick response time. I sometimes got interviews in a matter of minutes. But the email pitch must be succinct, crisp, and clear. You need to praise, explain, impress, and respect all parties involved. (7) Tell the secretary that you are currently talking to a lot of important people, and that you thought it would be fair to give your boss a chance to voice his opinion on this, as well. (8) Gatekeepers are sometimes more important than CEOs. Make 'friends' with the secretary, be polite, smile, or come visit. (9) Attend, or better organize gatherings, 'business meetings' and cocktail luncheons. You can arrange with guest speakers, or speak yourself. But beware, Winkler (1987) warns of the costs of the expected alcoholic and gastronomic bribery. (10) Lastly, be persistent, and do not give up. They will give in if you take the time. This happened several times with me. Once, after 15 phonecalls, 3 faxes, and 3 emails by two team-members, we finally got through. The secretary admitted she got 'tired' of us, and had to ask her boss at last.

When gatekeepers try to keep you out, they do not state their real reasons. Such as: (a) "I don't know who you are". Therefore it is important to present yourself using the right "code", whatever that might be. Believe me, it is worth finding this out. (b) "I don't have

anything to say". The fear of having nothing to say could also apply to élites, but especially to experts whom you might want to ask questions outside of their expertise. Here, make sure you are not posing a threat. Encourage them by toning down the knowledge needed to be helpful to you. In fact, you might think it is important to find out why s/he is 'silent' on this matter (c) "I don't see what's in it for me". You must then change your approach and maybe give out different types of 'candy'. You might not have monetary rewards (this might actually have worked with rich people, who are notorious for being mizors), but do not mind that, since it is ethically questionable. Rather, you should here somehow manage to appeal to the therapeutic relief of a good conversation. Maybe, you can suggest joining him or her in their sailing boat? Or, you might ask to see their mansion that you have heard so much about, or just say that you would not mind doing the interview in the taxi to and from the airport.

From access to information

Once you sit with your élite sample, Jorgensen (1989:86) rightfully says you should try to ask several types of questions. (1) Grand-tour questions that give an overview, and gets the interviewee going, hopefully for half an hour, (2) mini-tour questions that go in more detail, (3) example questions for illustration, (4) experience questions (what actually happened), and (5) native-language-questions to clarify insider terms. However, a main challenge may be in the creation of a productive setting of the interview. Access is not just about being able to meet, but also to get answers to your questions.

The interview itself could be seen as a process with three elements: the opening, the grand tour, and the follow-up. The opening mainly calls for the "therapeutic" mindset, because of the sensitivity and social intelligence necessary to grasp the situation, and create the right social setting for the interview. The grand tour, where you want to get long answers, calls for all three mindset ("journalistic", "therapeutic", and "investigative") because you may need to vary your mode of inquiry. The follow-up, in turn, is the task suited for the "detective". S/he wants to make sure all the facts are on the table.

The literature rightfully claims the opening of the interview is important. You have to establish the right atmosphere. While some advocate "admitting you are nervous" (Maaløe 1996:191), I would consider that the situation may call for making a joke, talking about the

weather, hobbies, commenting the office you are in, or something of that sort. As I was walking into the room at the beginning of my interview with a CEO in a large industrial corporation, I caught that the CEO and his secretary were discussing whether the weather was good for repairing his sailing boat. I quickly hooked on to this conversation as I passed through the secretary's room and into his office. I started talking about the joy of sailing and about how relaxing it must be to work outdoors, getting away from the hectic life in the office. This won his appeal, and both of us were at ease with the situation from then on. Two-thirds into the interview, I felt confident enough to raise critical questions about his role in the corporation. This also went ok. The interview situation calls for confidence, calmness and control - but also for improvisation. The Norwegian journalist Steinfeld explains: "If I improvise during an interview, it is the rule rather than the exception". Of course, the way you improvise depends upon your personality, experience and current state of mind. Are you confident, are you rested and calm, or eager, stressed, and nervous? McCracken (1988) points out that you need to use yourself as an instrument in the research process. As Oakley (1981:41) states: "[...] the goal of finding out about people through interviewing is best achieved when [...] the interviewer is prepared to invest her own personal identity in the relationship".

Thinking like journalists, we would be more direct. As Steinfeld, the Norwegian journalist explains: "The first question is often just a formality. I use it to warm up the interview object if time and frames allow it. Then I try to catch him, partly through following up important thing said, or by surprising and contradictory contra-questions if the chance comes up. I try to avoid being rhetorical because rhetorical questions do best without answers. Often the answers can, should and do become corrective. I partly "hunt" the temperature in an interview to stimulate engagement among the viewers. But when it is important, the technique is to stimulate the interview object to explain herself or himself richer, for instance let the power holder express herself or himself in detail about a pressed situation".

Another move is to establish links between your and their worlds. In her interviews with women MP's in Engand, Puwar (1997, par. 10.2) found it useful to use her background from Coventry. The MP had her first constituency there, and had taught Puwar's nephew. Mentioning this created a powerful bond that lasted long after the interview.

The interview gives a double challenge. It challenges you, and it challenges the person you are interviewing. You need to be on the edge,

risking something, risking to be asking naive questions, to be passive since you are mostly listening. You need to be provocative, to inspire to open up, to stimulate discussion, reflection and interest. You need to show you find his or her thoughts on this issue important. If you interview a scientist, the interview is not at all a nice "conversation with a purpose", as Kahn and Cannel (1957:149) claimed long ago. It is about challenging status quo. It is about discovering structures by opening up new layers in people's thinking, opening black boxes.

What kind of competence should you display when interviewing the high tech élite? Traditionally, the literature claims the ideal position is that of an "accepted novice" (Maaløe 1996:146). Most interview textbooks claim you should pretend you do not know anything about the issue in case. You should open up, allowing the other to use the words of his own. Actually, in my experience the opposite is true. The élite resists interviewers with little or no knowledge about what they are doing. In fact, it is better to "show off" some of your knowledge, and then discover that you get some respect. While it might be true that a foreigner has certain advantages when it comes to fieldwork because s/he is not viewed as a threat (Maaløe 1996:146), the general advice of appearing like a novice is of questionable value. You risk loosing respect, getting little or no time to talk, and you might be unable to steer the interview in the direction you want.

The interview is a reflective process where your informant might learn as much as you. A good interviewer participates in the reflection, and leads your informants further when they feel they do not have more to say (Lie 1998:53). A good interviewer uses his social intelligence (Gardner 1993), his intrapersonal and interpersonal skills, and his emotional intelligence (Goleman 1995). Most of all, what matters, is to give exclusive attention. Nothing else is as flattering as that. Nothing will make the other person open up to you like careful but active listening. Listening, then, becomes a form of activity (Faimberg 1996).

Final remarks

The issue of getting access has been relatively neglected in STS. Maybe because STS scholars do not see the problematic. But even researchers who are lucky enough to obtain access, do well in reflecting on their own role. Johnson (1975) states access is a precarious, ongoing, and implicit bargaining process. The importance of inside connections, persistence, social skills, and improvisation suggested in the literature

(Brannen 1987; Galaskiewitz 1987; Hoffmann 1980; Thomas 1995; Winkler 1987) can be appreciated by ways of detailed expirical examples. Trust, respect, reciprocity, professional prestige or even self-esteem comes into play.

Human encounters cannot and should not be completely planned out. After all, what we are after is subjective meanings, the discovery of hidden, surprising, boring, or shocking 'realities' inherent in the research setting. If we partly accept Johnson's (1975) paradox (that the knowledge needed to access a setting can only be known once inside that setting), imaginative, playful choices will outdo rational, planned ones.

With recent advances in technology (Castells 1996), gaining access has at once become both easier and more difficult. Easier because new access-points like e-mail have evolved. More difficult because the powerful always find ways to protect their time.

The more general issue raised in this article is the appropriate role of the researcher. Where are the limits to what we can do without compromising our integrity as researchers? How much power do we have as a profession? How does this vary within the research community, across disciplines, and with different professional status (undergrads, grad-students, post-docs, researchers, or tenured professors)? How does personality, training, and sense of experimentation come into play? The most important lesson, in the end, is to be pragmatic about method. Apart from upholding research ethics, the other question is what method works?

What works will depend upon the setting, the mindset of the researcher (which we have tried to enlarge with the 'investigative', 'therapeutic' and 'journalistic' *modus operandi*) and the status, position and culture of the researcher. In this vein, the article could be read as a reflection on the mindset of a relatively young, Scandinavian, male social scientist. Most of the available interview literature is written by older, tenured professors who are US or UK based. That may make a difference?

Ever so often, handbooks on interview methods just assume we are all the same and have the same needs. But this is not so. This, evidently, also poses a problem with my article, where various issues are ignored or bracked, both for brevity and for lack of attention to all aspects of access. Notably, cultural dimensions are not described in any detail. Thus, there are plenty of opportunities for future research.

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3. Visionary Managers and Silent Engineers

Technology development and organisational culture[1]

Abstract

The notion that changing work practices depend on information- and communication technologies is very much part of today's organisational discourse. This article applies the notions of flexible interpretation (Pinch & Bijker, 1987), translation (Callon, 1987) and domestication (Lie & Sørensen, 1996) to enlighten a discussion of tensions between marketing and technological development of mobility enhancing technologies in Telenor, the Norwegian telecom. A marketing product called *Nomade* is studied as its interpretations vary between engineers, marketers, and managers. The article looks at how technology is talked about across departments of a major company that has several office locations. How are American visions of 'work anywhere, anytime' domesticated (Lie and Sørensen, 1996)? How is the notion of the 'nomad' brought to the forefront? Are engineers seduced by these visions? Engineers are key personnel in high tech organisations, but some would argue their voice is rarely heard. What is the relationship between advertised mobility and engineer-technologists' versions? The article supports the social shaping approach (Bijker & Law, 1992) and gives reason to question whether, or rather under what conditions engineers are visionary and entrepreneurial (Callon, 1987).

Introduction

This paper analyses the role of engineers in the development of an information and communication technology product called *Nomade*. Engineers as typical knowledge workers may play a dual role here. Since they may be nomadic workers, this experience could very well form a basis from which such an ICT product is shaped. But to what extents are engineers able or allowed doing such translations?

The notion that changing work practices depend on information- and communication technologies (ICT) is very much part of today's organisational discourse. Notions of 'nomadic workers' and 'work anywhere, anytime' are also highly present in society-at-large. While we could be tempted to dismiss these as marketing slogans by the high tech industry, possibly fuelled by government agencies to whom ICTs provide seemingly easy-handed rationalisation tools, the seeds go deeper. The nomadic state of events is in fact pronounced in contemporary social theory, as well. Here, it serves as an alternative to the notion of 'society' as an entity. Some scholars give up society altogether and describe the social, cultural, economic and technical with terms like hybrid, network and flow (Castells, 1996; Lash & Urry, 1994; Beck, 2000; Giddens, 1991).

But it is important to point out that there are at least three notions of the nomadic at play here: the nomadic as a *condition*, the nomadic as forthcoming *process* and the nomadic as down-to-earth *practice*. These roughly correspond to the difference of perspective between a post-structuralist approach (nomadism) that Maffesoli (1996) and Braidotti (1994) represent, a sociology of globalisation (Castells, 1996, Giddens, 1991), and an organisational sociology approach (Argyris, 1992) focused on the nature of work in modern society. The former is more general, and is occupied with the individual sentiment in the contemporary society; the latter is more traditionally empirically focused, trying to pinpoint real changes in work practices.

The knowledge nomad, or 'symbolic analyst' (Reich, 1991) sometimes embodies, or virtually networks himself through vast oceans of information (Castells, 1996; Wellman, 1996) in 'knowledge-creating companies' (Nonaka, 1995). The 'nomadic tense' is the imperfect: it is active, continuos, Braidotti (1994:25) reminds us. Being

a nomad, and equipped with PDA, laptop, cell-phone, and fast modem connections, apparently, he can be anytime, anywhere, yet still contribute knowledge work. Braidotti (1994) brings, with her notion of "nomadic subjects", the nomadic discussion towards French post-structuralism. Here, for quite some time, the nomadic subject is considered an empirical reality, as a conceptual form of self-reflexivity. The modern nomad challenges the otherness of the others, living at the margins, as it were, of our societies. Challenging the borders of the possible, of the imaginary, they therefore put representation on hold. But not everything is on hold. "That thinking is a nomadic activity, which takes place in the spaces in between, in the transitions, does not make it a 'view from nowhere'", saysBraidotti (1999:89). The nomadic subject position does have a spatio-temporal location. It is to this we will turn now.

Digital nomads are, in a sense, people who are ”here, there, and everywhere”, really ”nowhere”, constantly connecting and de-connecting to the Net and other networks without real need or want to settle down. This also implies limited ability, will or need to comply with rules, social regulations, pay taxes, and participate in other society building elements. In difference from other nomads, these technological nomads do not appear in groups, but rather as atomised individuals, constantly travelling in cyberspace, but also in geographical space – between cities, and people, without investing the whole of their identity in anything, sweeping the stage everywhere they go. Typical examples are corporate top executives in TNCs, MNCs, governments, top-notch researchers, terrorists, and professors. Digital nomads have been labelled easy to reach but difficult to track (Makimoto & Manners, 1997).

Work, essentially, consists in combining ideas with physical movements that might, or might not be part of epistemic practices. As Knorr-Cetina (1999:97-99) reminds us:

> "The acting body is perhaps the first and most original of all automats. It is an information-processing machinery that learns and works without conscious reflection or codified instructions. […] the person insisting on a face-to-face inspection distrusts his or her mind, in favor of his or her senses, in identifying and processing the relevant information. […] [But] the scientist's body as an information-processing tool is a black-boxed instrument.

> The absence of discourse concerning embodied behavior corresponds to the use of embodied information processing as a substitute for conscious reflection and communication. The acting body works best when it is a silent part of the empirical machinery of research."

What, in such a perspective, do contemporary artefacts like *PDAs, laptops, and cell-phones* add to the process, and what do they subtract? What about networks? The adoption of Internet technologies and the changing mobility patterns of people, things, and information is commonly viewed together as a process of globalisation (Giddens, 1991). While accepting the change itself, globalisation theory tries to account for the impact of these changes. Globalisation theorists, policy-makers, and visionaries share the notion that social space has become ubiquitous (Castells, 1996; Lash & Urry, 1994; Beck, 2000; Giddens, 1991). Castells (1996:244), in particular, claims a networked mode of production is underway. This will reshape business because networks adapt much quicker than before. The élite is not any more constrained by a place-bound logic, but can position themselves continually, shift attention, block outsiders, and 'forget' territorially bound people on the outside, making it impossible to 'get in'. The élite, in Castells' (1996) view, does not operate in places, but in spaces of flows. Flows of capital, information, technology, organisational interaction, networks, sounds, symbols, and images are controlled and initiated by powerful *switchers* who believe in the 'spirit of informationalism'. This, incidentally, originates as a 'hacker ethos' (Himanen, 2001), but spreads into society at large.

Clearly, this discourse on the future of work is filled with suggestions about technological needs and presents challenges to ICT companies and engineers to provide the technology that facilitates nomadic practices. But can we expect engineers to take on such challenges? What is the role of engineers in the development of technology?

The role of engineers in technology development

Engineers and their culture (Kunda, 1992) and work-practice (Buccarielli, 1994) have been thoroughly studied. Their problematic relationship with other professional groups with whom they work is

also well known. Engineers develop, manage, diffuse, use, and implement technology. They previously enjoyed the status of 'master builders' or 'captains of industry' (Sørensen, 1998). They were in charge and played the lead role in technology development projects.

However, the changing status of engineers (Sørensen, 1998), together with accelerating technological change (Castells, 1996), and increased importance of technology's users (Sørensen and Lie, 1996) brings about significant changes. In marketing departments and management circles we might now observe a more pragmatic use of R&D and engineering. This mix of challenges radically changes the cultural framework of organisations, as well as the role of engineers, and appears problematic for a number of reasons.

Engineers, of course, come in many forms. In fact, they are tricky to describe precisely because they embody hybrid characteristics - simultaneously 'nerd' and 'entrepreneur'. There are also different configurations at play. Where the Norwegian petroleum engineer might be in charge, the computer engineer might remain a subordinate figure, be thought of as such, or at the opposite end, become a highly successful entrepreneur with his own firm. These images matter, and influence how engineers move about in this terrain.

Profession studies (Freidson, 1986) has, while often neglecting engineers in favour of doctors, lawyers, and more powerful élite groups, consistently shown that professions socialise its members into close-knit collectives and provides boundary-work against outsiders (nurses, legal secretaries, regulators of any sort). The case of engineers is more complex, because they have no direct subordinates. On the other hand, like other expert groups they master a domain that is somewhat inaccessible to others.

Two approaches have profoundly shaped our understanding of engineers: labour process theory and technology studies. In labour process theory, engineers were analysed as part of the conflict between workers and management (Braverman, 1974). The claim was made that engineers were proletarised and devoid of influence (Ritti, 1971). Later studies show engineers also have played the role as management professionals (Noble, 1984). In technology studies, however, we find engineers as 'constructors', 'designers', or 'entrepreneurs' (Pinch & Bijker, 1987; Latour, 1987; Sørensen & Levold, 1992; Bijker & Law, 1992; Thomas, 1999). Buccarielli (1994:20) shows how designing engineers negotiate from a variety of expert

perspectives, disciplined by their domains as well as by their artefacts, and in the end reach some kind of consensus on the final result. In fact, Law (1987) speaks of 'heterogeneous engineers' to underline the messy networks that combine technical, social, and economical elements. Pinch & Bijker (1987) emphasise that technology is subjected to 'flexible interpretation' by 'relevant social groups' like "engineers, advertisers, public interest groups, consumers and so on" (Pinch, 1996:23). The notion of 'flexible interpretation' is taken from sociology of science, where it was used to study knowledge claims. For Pinch, (1996:24) it means that different groups may well have very different interpretations of the same artefact, or even to certain components of the artefact. The air-tire is the famous example, aesthetically unappealing to most people at first, but a solution to the vibration problem to tire-producer Dunlop.

But this is not straightforward process. Technologies are born out of "conflict, difference, or resistance" so that studies must describe "technological controversies, disagreements, or difficulties" (Bijker & Law, 1992:9). Following artefacts this way, Pinch and Bijker analysed how they become stabilised and reach 'closure' (Pinch, 1996:34). That engineers are part of this 'muddling through' process, is clear from earlier studies. For instance, Thomas (1999:200) writes: "I was puzzled by the difference between R&D's confident portrayal of the FMS [flexible machine automation system] to upper management and its private tentativeness, uncertainty, and possible underestimation of the system's true costs". Thomas' case study suggests organisational actors have different worldviews, and pursue different goals simultaneously - either due to specific organisational positions, or due to their perception of the organisation's goal as a whole (Thomas, 1999:215).

Instead of 'flexible interpretation', Callon (1986) prefers 'sociology of translation'. Callon wants to explain precisely how some actors manage to impose their definition of the situation upon others. The way this is done, he writes, is by creating an 'obligatory passage point' through which the discussion must move. Callon (1987) claims engineers seemingly by profession, accept and deal successfully with 'heterogeneous associations' (technological objects and social processes of alignment and convincing-work) and become 'engineer-sociologists'. Making up actor-networks by mobilising a mass of actors, often the silent ones for whom they then become the only

credible spokesperson, engineers simplify and juxtapose in order to get their view across. Success is measured by the amount of profit gained, since an engineer-sociologist has to create a new market if s/he is to be proven right (Callon, 1987:90). Callon's (1987) engineers are clever and transcend previously defined boundaries. Implicit in this claim is that knowing technology means knowing how to mobilise others to believe in it. Flamboyantly, Callon has often maintained that engineers are better sociologists than the sociologists themselves. In contrast, Thomas (1999:219) writes engineers share a suspicion for workers and lower-level managers, that they have ideas for technologies that would harbour and upgrade worker skills, but lack the capacity, language and power to make these visions real.

Engineers might well have enjoyed a prosperous century, but towards the 1980s more strictly managerial professions enter the scene, and their status is drastically changing. Sørensen (1998:139) writes engineers are transformed from 'industrial managers' to 'technological consultants' or 'technologists', a change they do not always welcome themselves. Importantly, there is some indication that telecom and data engineers did not attain élite status until quite recently. Also, we need to beware of the comparative difference between engineers in Scandinavia, Japan, and the US. There are, in fact, important national differences between engineers in all advanced capitalist countries (Meiksins & Smith, 1996:235) and it does not seem like there is one chosen way of organising technical labour (Meiksins & Smith, 1996: 253). This would support 'national' models (Maurice et al., 1986; Sorge & Warner, 1986).

Managers have enjoyed an even wider acceptance and are the centre of attention for the US business schools. The literature is vast, but most of it is tailored to practitioners' needs (Cornfield, 1987; Edward, 1987; Herzberg, 1976; Kanter, 1977; Kanter, 1983; Margolis, 1979). As an élite group they shun attention from outsiders (Mills, 1956), aside those characteristics that show off their best (management) practices. However, we know a lot about leadership principles, models of industrial organisation, and technological challenges. The organisational culture literature is an honourable exception, where we also get an idea about social and cultural practices in corporations. Kunda (1992) says tech culture is a very practical matter, yet taken seriously by most US corporations. Each company has its 'ideology', and tech management takes great pains to embed this ideology by way of management's speeches,

dissemination of media reports to boost internal self-esteem, use of strong symbolic vocabulary (innovation, profit, productivity), and demarcation of outsiders (temp-workers, competitors, former employees).

Traditionally, the organisation is taken-for-granted as an ordering principle. Now, studies that show the precarious nature of such an ordering begins to emerge (Law, 1994). The organisation, it appears, is not a social but actually a materially heterogeneous ordering including people, documents, codes, texts, architectures, and physical devices. Some actually prefer to think of organisations and groups of organisations as ecologies, not separate units (Brown & Duguid, 2000).

The organisational literature, especially, has targeted workers and their need for learning and knowledge (Argyris, 1992). Recently, the term 'knowledge worker' has established itself as leading terminology for advanced work practices, especially in the high tech sectors. In the last few years, mobility has emerged as a key issue. Thus, focus shifts towards 'alternative workplaces' (Apgar, 1998), 'e-lance economy' (Malone and Laubaher, 1998), 'managing offsite teams' (Maruca, 1998). It also includes dealing with the situation that work becomes home and home becomes work (Hochschild, 1997).

Callon (1987) and his engineers create the expectation that the nomadic, and with that the idea of a new form of work 'on-the-move', 'anywhere, anytime' is rooted in the culture of those who develop technology, the engineers. In sum, the literature describes visionary engineers who are engineer-sociologists, or policy entrepreneurs who successfully make use of heterogeneous networks to implement their work (Callon, 1987; Law, 1994). In short, engineers are in control; they are the true 'captains of industry'. The role of the engineer in technology development is a complex issue. The literature describes engineers as a key part of high tech organisational culture, yet with different emphasis. To some, engineers are 'captains of industry' (Veblen, 1919) or visionary sociologists (Callon, 1987), to others they are proletarised and lack power (Ritti, 1971). This is the tension I will investigate by studying the development of *Nomade* by the Norwegian Telecom Company Telenor.

Getting access to Telenor

Since the visions of technology in *Nomade* seemed to suit my general interest in globalisation and nomadic practices, to study Telenor seemed an obvious choice. In addition, this company could be found quite close to my workplace, namely in-and around Oslo, Norway. Among the largest Scandinavian players, Telenor also seemed to provide a fruitful mix of visionaries and technologists. But, from the outset, I suspected no Norwegian firm would be very visionary. After all, this was not characteristic of how such firms were thought of until that point. Secondly, I had limited experience with business at that time, and I knew little about Telenor apart from the usual story: 'they used by be part of the state, and have the mentality of public servants'. With this in mind, yet optimistic on behalf of my own fieldwork's possibility to open up this 'black-boxed' understanding, I was happy to find Telenor soon became centre of attention. A merger with Swedish telecom Telia leaked while I was initiating my fieldwork, and Telenor became exposed in the media in a greater degree than before. I believe this 'opened' the company up, rather than the opposite.

Getting access to high tech organisations is a tricky, tedious, and technical matter. The literature suggests you need inside connections, persistence, social skills, and improvisation (Thomas, 1995, Undheim, 2000). Access to Telenor was surprisingly informal. While I tried using organisational gatekeepers, letters of introduction and the like, the most fruitful attempts were made with more ad-hoc methods. It became a constant struggle for months to come. After all, I sought a mixture of high and low-profiled people from all across the company. I had no clear idea as to where the interesting stuff would be located, so I had to go by intuition, snowball sample, and a sketchy map of the ever changing Telenor organisation. At any rate, I did get access to many places, and started to travel. At first, I thought I would be focused on marketing departments. I found, to my astonishment, that the 'making' of technological visions occurs not only there, but also in other parts of the organisation. My first visit to Telenor R&D had actually been a year before, so I had the advantage of having spoken with the director. But what met me when I got 'inside' was so different and much messier than I had expected. In effect, I was shocked. These people lived their own lives within smaller units, often with little or

no communication with the 'outside'. I really felt the isolation. I could see that it did not bother most of them. I later found out that most engineers had gone directly to Telenor R&D from their studies in the 1970s. They knew no other workplace.

I have conducted about 30 interviews in Telenor, most of them in 1998. I have interviewed executives, managers, business developers, marketers, scientists and engineers. Engineers studied in this article mainly have background in electrical engineering, telecommunications, and computer programming. As explained above, I chose these particular key informants based on a strategic sample, but fuelled by intuition and snowball-sampling techniques. As I simultaneously was to be socialised into technology studies (I was a die-hard cultural sociologist), my perception of the field has changed underway. I gradually began to see more than just people. I began to look for relations other than communicative utterings. Especially, I think, I started to look for disagreement and conflict over interpretations, products, and actions.

It should be noted that I have not tried to follow *Nomade* from its inception as an idea to a product that could be marketed. Rather, I have chosen to focus on the way that different groups of actors in Telenor, research engineers, marketing people and managers relate to the product and the ideas behind it. As I will try show in the analysis, this allows an interesting insight in the way such ideas are produced and by whom, as well as the way they become contested in the organisation.

Historical backdrop of Telenor technologies

According to a Telenor executive I interviewed, Telenor is a Nordic giant within telecom and IT, one of the major companies of Northern Europe, and a world leader in: (1) mobile (2) internett and (3) satellite communications. The largest Norwegian telecommunications carrier and owned by the Norwegian State until the late 1990s, it has undergone a myriad of organisational changes, and now consists of at least eight different subsidiary companies. With Brown & Duguid (2000), I would say they provide an attempted 'organisational ecology' with interrelated concerns and efforts, yet with some peripheral independence.

Most civil engineers in Telenor are educated at the Norwegian University of Science and Technology (formerly NTH). They rapidly

gained status as an élite in Norwegian society, due to upper-middle class backgrounds, restricted access, and the inscription of engineers with élite status already before the engineering school was established (Sørensen, 1988:145). Engineers had a professional mission oriented towards industrial development. However, not all engineers were alike. Telenor executive Knut confirms:

> "I came to Telenor[2] from [a large R&D firm]. Telenor was going to start something new down at Kjeller. You know, nobody wanted to start there back then. It was only those people who flunked at NTH, or who just barely made it. I remember they said it, too: 'Well, well, look at him, I guess he'll end up in Telenor […] the poor bastard'. But then they had this idea of starting an R&D unit, and a lot of money were put aside for it, and quite a lot of visions, if I may say. And I thought, well, four or five years might be fun."

Originally, Knut explains, telecommunications was only a question of supplying the equipment and phone lines. There were not enough telephones, and people were on the waiting list for years. And there was no question of a market. But social scientists came in quite early, started thinking about the relationship between telecommunications and data communications, and had views on man-machine interaction. They started questioning what implications this had for society. "But my angle on this", Knut makes clear, "that is the technological one, and this might damned well be wrong. I guess many people would say so [laughter]." In Knut's view technology drives the development:

> "Moore's Law is at the bottom of this, a doubling of capacity every 18 months or so, and this whips and whips all the time. It makes a lot of things possible, [we] technologists say. […] New platforms, automated cell phones, we had a manual service, you know? I remember somebody at a conference saying: 'How in the name of the Heavens do you think anybody is going to buy a mobile terminal like that at 28 000 NOKs?"

But the market emerged, although this has been a tension throughout. States Knut: "It is almost impossible to make the market react to something they do not know beforehand. There is no push in the market towards new generic platforms. People work with the

systems they have and the 'technology push' only works for the established products." I will come back to these notions, but will now conclude the historical introduction in the following way.

Historically, we might say, Telenor bore the vision of providing the communication needs of the Norwegian people. As Roy, a Research Director at Telenor R&D, claims:

> "Satellite communications was a great challenge. In 1984 we managed to get TV to Svalbard [the small Norwegian settlement on islands by the Arctic Circle]. There was a common vision that we would make it - between industry, government and Televerket [now Telenor]."

The 1970s and 1980s were times when Telenor had a clear idea of their role, and where few people expected their vision to expand the national territory. With Castells (1996), we could say they were immersed in a place-bound logic. Nevertheless, the achievements in satellite communications were astounding for the opposite reason: their global reach. But let me jump to the late 1990s to clarify the shift in discourse by a practical example. This is a time when Telenor is well into the world of business, customers, and competition on some markets, but not necessarily in the national market.

Nomadic tensions - markets, technologies, and mobilities

In the summer of 1998 Telenor Mobile launches a mobile office package called *Nomade*, with the slogan "freedom to work independent of time, place and space". Their WebPages states the purpose and content of this package:

> "*Nomade* is the new subscription that ties together all wireless content services. With Nomade you can call, fax, send SMS, and email, use the Internet and work with a laptop in one subscription".

The launch was spectacular. Never before was more money spent on advertising.[3] Marketing people and management certainly believed this was significant. They took the existence of this product idea as a sign that Telenor were trend setters, a sign that they were the only ones to take such an advanced product to the Norwegian business market. The money spent would seem to confirm Telenor's

dedication to the idea of the nomadic worker. With this, they stated implicitly that work increasingly occurs away from the office, that is, 'on-the-move' between customers, meetings, and workplaces. In short, the new worker is a traveller.

But, beware, nowhere do we find any talk of the modern, restless, or nomadic aspect of such a freedom to travel. Braidotti's (1994) nomadic condition, or Maffesoli's (1996) 'tribal' community approach is never hinted at from Telenor's side. Rather, Telenor is focused on the ease, freedom, and 'light' aspects of mobility and travel, much more in the style of Urry (2000). The travelling that occurs under such conditions are informed by the notion that "mobilities, as both metaphor and as process, are at the heart of social life", and that the nomad is one among many metaphors of movement, like vagabond, hotel, motel, pilgrim, tourist, stranger and adventurer (Urry, 2000:49). Yet, these processes have complexities bound to intervene and recast the very meaning of social relations. With Urry (2000:35): "

> "Scapes […] networks of machines, technologies, organizations, texts and actors that constitute various interconnected nodes along which the flows can be relayed".

Crucial to such scapes are hub airports, because they are nodes of interconnection, mobility, and hybrid encounters (Castells, 1996:417) most materially shown where mobile peoples and cultures dwell-in-transit (Urry, 2000:63). To further emphasise how Telenor management views this point, I will go in detail on some of the branding efforts. For instance, the graphical identity of *Nomade* is important. Showing a person 'in flight' almost like a water polo player in water, or volley-ball-player trying to catch a ball, the image speaks the language of mobility. But, though direct in some respects, the symbol is shadowy in others. Therefore, Telenor distributes an identity manual for its brand:

> "The original meaning of nomad is a wanderer, but in a more modern context a nomad is a person who is on the move. […] The aim is to describe a total flexibility in the job-context, either for the user himself or for several users in a network. […] The symbol, the flyer, represents those solutions that make it possible to leave the traditional organisational form - the office. The flyer stresses the freedom that Nomade gives to work independent of time,

place, and space. The inspiration to the symbol is drawn from art and is a photographic illustration by help of modern digital technology".[4]

This 'freedom to work independent of time, place and space' is variously called a concept description, or even a concept promise. In any case, it is clear that this is a key phrase in their nomadic brand management. But unlike the branding ambitions, the presentation you get when wanting to order *Nomade* is highly technical and slightly pragmatic, but certainly not holistic. States Svein who is responsible for *Nomade*:

"We separate between receiving services like e-mail, fax and voice-mail, and sending services like e-mail, voice-mail, and from spring 1999 you can send faxes on the web interface".

This stands in contrast to what he claims are marketing needs and wants: "the segment wants a simple solution". Then, Svein adds, "but we have great user support".

But is there not a paradox in that nomads normally would not want to be attached to networks of any kind? How then would you aspire to create a web-community of nomads? To this, he has no answer, he has not thought about it. These types of questions are not part of business-as-usual. However, web-community is definitely the future, we are told.

"We wish to use *Nomade* as a contact forum, for user support, for information, but only for totally relevant elements, as revealed by our focus group and market research. Then we want to create alliances with third parties, offering *Nomade* as a marketplace for airlines, hotels and travel agencies".

But is *Nomade* the response to a need, or is it totally a baby of creative heads inside the Telenor Mobil marketing department? According to Svein, responsible manager for the *Nomade* project:

"We wanted to fill a gap in the market, to provide a service to a segment that needed to work whenever, people who are mobile, people on the move…it was based on a study of real situations these people confront". [5]

To gain this knowledge, Svein told me they had been out at the business lounge at Oslo Airport Gardermoen, and earlier at Fornebu

national airport, in order to observe nomadic behaviour. That travellers dwell-in-transit (Urry, 2000:63) did not go unnoticed, although the assumption Telenor people made is quite instrumental. In fact, most people used their laptops rather boringly, so they concluded there was room for improvement. "We want to participate in pushing the technology forwards, pushing technological solutions into everyday use", he stated. Clearly, the view that consumers can be 'pushed' into using a product is representative of the new rhetoric now to be found in certain parts of Telenor.

Then, the 'inside' story begins to emerge. In a stunt of an interview with a guy who, according to the lady at the switchboard 'knows *Nomade*', I learned that there are different cultures within Telenor. Per, who now works for an advertising agency, calls me up and gives me no time for preparation. Busy in a new job, apparently. I fired a few questions and started punching, frenziedly, some notes down on the screen in front of me. This was clearly a Marketing type. Cool, busy and energetic. So different from the slow, cautious researchers I was going to meet later. Per says *Nomade* was one of the first big attempt Telenor made to reach the business segment with a product that will help them exploit time better. A product for decision-makers, business, large corporations like Statoil. In short, those who are in a situation where they need to bring the office with them, who spend a lot of time in airports. The idea was to try to make a flow diagram. What type of information do building workers need, they drive between building sites, co-ordinate work, and likewise business people who sit in hotel rooms.

> "In fact, this is one of the few instances where a technological product actually manages to fill a need, a benefit, and does not only push technology out in the market. The message and vision was that people should be able to work independent of time, place, and space. This drove the whole development", says Per.

Per invented the campaign's creative concept: "we used a lot of money … [but] … we know the market…[…] … and Stig Herbern [my boss] has great timing".[6] Already here we note the discrepancy between Svein's 'pushing' attitude and Per's 'fulfilling a need in the market' attitude.

But what is the market for *Nomade*? The perceived user groups for the product is: (1) consultants, engineers, (2) financial workers,

brokers, (3) managerial level, (4) salesmen, architects, and (5) small and medium businesses (SMBs), according to internal Telenor documents. All of these are deemed people on the move. But to consider them as a group would be to ask much. Therefore a lot of work has to be done to integrate their different communication needs. My fieldwork underlined this. Telenor workers seem to have a hard time conveying the needs for, and benefits of *Nomade*.

Looking at it this way, what do people on the move obtain from Telenor *Nomade*? What does it deliver? For most users, traditional mobile services like e-mail, voice-mail, and e-fax are easier with *Nomade*. But then they are easy with almost any Internet provider. In addition, *Nomade* can offer more advanced communication solutions, like a total message-central integrated on a web-user interface, meaning you can receive any electronic message on your digital home domain. There are also plans of expanding the Nomade web page into an interactive web community of business users, and a selective marketplace, not only provide information about Telenor services as it works today.

The great thing, then, about *Nomade* would seem to be that it is a total package. "There are hundreds of such products on the market today", admits Per. "Many mobile offices do not even work. We have even bought one. But the simplicity of having everything in one subscription should speak for itself". You do not have to follow the latest technological trends. The package is continuously upgraded and made more advanced. They provide this service for you, and in return you submit your loyalty to the brand. Together you work towards the common goal - becoming digital nomads - the future knowledge worker life-style.

I have previously evoked how Callon (1987) is concerned with how the mobilising, aligning and enrolling actors and technological objects take place. *Nomade* provides an occasion to study this. Per claims all parts of Telenor were involved in the making of *Nomade*, "from customer services, to technology people, IT, and marketing people". They all agreed that the product should be launched, in his view. The main point was know-how about the market. The aim, of course, was to reach 20% penetration. This gives some kind of safety. The campaign started in May. After the summer the task would be to teach and tease the distributors, salesmen, and the market directly. Actually, Nomade made a lot of headlines. People admitted that a lot of money was spent, but sales went better than budget [at first].

Nevertheless, it seems clear that *Nomade* is a product pushed by management. Clearly, the packaging and presenting has top-down characteristics. And the marketing aspect is striking, given the novelty, and strong imagery invoked by the Nomadic branding efforts. In many respects, it seems Telenor Mobil stands out. Per claims "there is no marketing environment in other Telenor companies. We are the only ones".

In high tech organisations, directors, managers, and marketing people share the feature that they often are quite *distant* from where 'technology goes on'. Whether we are speaking of how specific technologies are developed in detail, or we mean how technology is appropriated, used, or domesticated (Lie and Sørensen, 1996), they only have indirect contact. This distance can also be thought of as an advantage. For instance, many Telenor directors claim they are better suited to foresee immediate needs in the market than their engineers. Jørn, an executive with Telenor Mobil states:

> "We think that some of the stuff coming from Telenor R&D is a little far-fetched. A little too much oriented by research, you could say. I don't know whether it is the language they speak, or that they sit far away, you know, from daily business, and that they do not 'feel the pulse'; but we often feel that what our own guys come up with is equally [good]. At least, [our stuff] is put in a shape, or system, so that we can easily relate to it".

It seems reasonable to believe that *Nomade* was a marketing product mainly. Yet the foundation of the product had to be technological. Both Svein and Per claim that *Nomade*, in principle, was a joint project with the R&D people.

The social and the technical: hybrids or distinct entities?

Nomade seems trendy, flashy, and ever present in Telenor's corridors. But if we get closer to the 'floor' and start walking about where things are messy - among the engineers at Telenor R&D - the story is another. In looking at this, the opportunity to dive into engineering realities brings forth a key dimension related to the role of engineers, management, and marketing; the flexible interpretations of what was 'technical', 'social', or 'hybrid' about *Nomade*.

For starters, not everyone knew about *Nomade*. To the engineers, 'nomadic applications' has totally different connotations, and engineers are left wondering what marketing could have meant. Jostein, a research scientist with Telenor R&D states:

> "The Telenor campaign for a product called *Nomade*? I remember the advertisements, but I haven't reflected that much about it, and I don't really know what it's about".

However, his view about 'mobility' is a different story:

> "Mobility will become self-evident from now on. Based on our experiments we think terminals with multimedia content will appear, and that people will use mobile units for information and entertainment".

Apparently, the link between a nomad and mobility is unclear to him. This indicates that the idea of the nomadic is not ever present among engineers. So, the engineers of Telenor could not themselves have come up with the nomadic product. He is not alone among Telenor's engineers. In fact, on another floor in the same building, Geir, a Virtual Reality researcher at Kjeller tells us:

> " From our side the point with 3D is to create artificially created action space, where you can interact with any object, whether a video, sound, animation, pictures, databases, or information".

Their resources to do this, however, seem drastically limited. A couple of workers with virtually no resources sit there experimenting back and forth in a tiny lab. So much for nomadic realities! When I ask: "what are the possibilities for being a digital nomad from your perspective?" he looks perplexed. "What do you mean?" I try to explain myself: "you know, your vision about freedom to work across time, place and space". And he admits that this is new to him. "From our place we have not addressed this in any particular way". Not even videoconferencing seems to be given much hope. "We are working on a project to combine videoconferencing and 3D, but pure videoconferencing is not our thing. It has taken off the last couple of years".

Telenor R&D, situated in their remote Kjeller campus 70 kilometres outside of Oslo, represents the engineering culture that graduated from the Norwegian Technical College in the early 1970s. They are similar in both clothing and thinking, not commercially

minded, and they are essentially interested in technology for research purposes. When I spoke with their various departments I found a striking variety of outlooks, just what you would expect from a large research organisation, but without the great visions.

When, occasionally, visions were to be found they were almost purely technological in nature. Such as the *Project I*, the Internet over IP project with the catch phrase "IP everywhere - everything over IP". For people outside of data and telecom, of course, IP is meaningless. But the project was highly controversial at the time I did my fieldwork (1997-1998), and some claimed *Project I* drained all the resources. The 'marketing' brochure said in *technically* clear prose: "The future is characterised by the deeper integration of information, communication and interaction. The notion of convergence seeks to catch the unclear relationship that we expect to occur between telecommunication, content production, data technology, and consumer electronics". Could it be clearer and more eloquently put? The second part is based on musings on the *social* effects: "We will see new forms of collaboration and learning. New relations between family and friends. We will see the rise of new professions that challenge established expertise and we will see changes in the strength-relations between industries and institutions".

The Telenor experience provides an opportunity to reflect on the problematic relationship between the technical and the social. Where Law (1994), Latour (1999) and Callon (1987) question the crude distinction between social and technical elements with their empirical basis, it seems Telenor knowledge workers have found their own solution: to make an even stronger distinction. In fact, it seems like Telenor knowledge workers have a very domain-specific interpretation of their own expertise, and distinguish between whether their job is, crudely put, 'technical' or 'social'. The following comment from Olav, a scientist who works for Telenor Mobil in Oslo illustrates this point. I wonder: what do you think about the consequences of the nomadic concept?

> "Well, I don't really know what you mean. Social scientists study those things. What seems clear to me is that such a possibility to be available and work there, and then - having access to whatever information you might need - clearly could have great consequences for social life. But that is, in many ways, outside of my domain".

Olav is not sure whether Telenor really should occupy themselves with visions. Does he think Telenor should have a mission statement?

> "Well, that clearly is an existential question. What should Telenor be? There are many opinions about this. What seems clear to me is that it is ok to know a little. And no matter what, Telenor will be in the business of moving signals. We have always been, and I think we always will be".

Olav and Rolf have technical visions at the forefront; their world is signals, IP, mobility, and terminals. The marketers of symbolic language evoking 'nomads', on the other hand, belong to the business school educated management within Telenor Mobile Communications. The clash between the engineering culture and the more recent marketing buzzers has organisational consequences. As one newly hired employee states: "this is a technologically driven organisation - if you don't understand the technological possibilities and limitations you don't get far at all".[7] As we have seen, though, Telenor Mobil wants us to believe the opposite is true. To this, Knut, a Telenor executive laments (spring 1999):

> "Yesterday we had a board meeting in [Telenor] Mobil. I had to say a few things to them about UMTS. It is the next generation of mobile communications systems, but I do not feel the company has taken the challenge to go into testing. This is what happens. You are so busy with the business you have today. […] I had to make them participate in a standardisation partnership for third-generation systems"

So far we have seen engineers with technology in mind, and business development people and analysts with 'market' and 'trends' in mind. Of course, there are also hybrids. First, let me consider Jens, an engineer working at Telenor Mobil. Jens must obviously have needed support from Knut, for he is working with UMTS. His view is that technological visions must have a commercial, service-based aim:

> "I am aware that accessibility anywhere anytime to the information you might need can have quite large implications on social life. This really is not my field. […] I think the nomadic vision you speak about […] really just

means bigger possibilities. It makes Internet access, and mobile Internet access much easier."

In a spring 1999 visit to Telenor International we meet business developer Ravn. He picks up on the issue of videoconferencing and phone meetings:

> "I do not feel that the technology we have today [And we should have the most advanced] is sufficient to co-operate well by phone meetings where we sit here, and the other regions sit and we have to scream and cry so that they will hear [...] 'what did you say?' […] And sometimes the line is broken. So we do not feel this is an optimal meetings form. It becomes more like reporting, a one-by-one report of what we have done. But two-way communications does not work still".

According to Ravn, limitations are not only technological. He works with Russia, and says it is hard to interpret signals. There are ample cultural issues to sort out:

> "Ninety percent of what they mean you can see from their body language. The rest of what they say is just bullshit. It is incredibly important to know how they feel, and this is hard over normal TV transmission. Then there are the problems with how to get some extra goodwill".

Ravn is aware of the visionary confusion in his own company:

> "I often feel we have different visions depending on what sector we represent. If you talk with people in "Mobility" then you get visions about where the wireless sector is going, and if you talk with me, I look at the market and Russia. But it is important to get a common vision, and in a way the vision statement and strategy document from the corporate level should provide this common thread, but often it is not concrete".

We might, at this point, take the position that business people in Telenor know what they are doing. This is not the case with the *Nomade* product. Here, the most sensible evaluation is that the business/marketing/advertising people failed. Never have we seen such explosive metaphors, such fascinating material, and such a boring product. And consumers saw this. They refused to take

Telenor's version of *Nomade* into their social imaginary. *Nomade* was a product that time, technology, and words ran away from. It was launched too early and repaired too late to impact the whole mobility discourse, both inside Telenor, and to consumers. Timing is important. As Telenor executive Knut states: "To think about the market more than a year or two in advance is almost a hopeless venture".

The branding of nomadic technology

While co-ordinated efforts were hard to come by, numerous other points where visions travel through were found. I asked Peter, a Telenor executive with background in social science about his role: "In a way I provide cosmologies for the corporation. I produce those wide scenarios and IT-strategies, as the old, wise guy".

> "So my role here is to work like a sort of high priest or something. Some kind of interpreter of the Gospel who tells the people how the world will be [by ways of] broad backdrop presentations and scenarios. And in terms of methods I see things in a longer perspective than those who just graduated. I am a little more like Abraham, who [was old and wise]"

Peter collects data from firms like McKinsey, Giga, and Cisco, from internal environments of analysis within Telenor as well as from scenario projects, research and the business newsmagazines. Here I am, in the core of Telenor, trying to explain the purpose of my inquiries. "I am trying to look at the tensions between internal and external visions, between technological and market oriented visions, and the way these visions 'wander' in and around the organisation". To this, the laconic answer is revealing:

> "Well, I do not really know if you can get hold of our internal visions [thinking they must be spelled out, and that they are somehow 'secrets']. Who keeps them? I guess you could find out something from…he is in a meeting until 11.30"

However, if external links and knowledge is to be useful, it must be integrated with existing knowledge in the firm (Faulkner, Fleck & Williams, 1998:9). I get the suspicion this does not always

happen here. Even more enlightening is our next question. Does Telenor have a brand?

> "A brand?" Yes, what does Telenor stand for? "Eh. I don't know. I have my picture since I work here, so for me Telenor is the old Televerket, you know. And as for the Telecom Company […] I have never bought a PC from Telenor. And if I did I might have put Telenor together with Computerworld, Computerland…different PC stores…for me it is not a PC store".

After this wonderful clarification, we are ready to proceed to Telenor's advertising. In stark contrast to the people I met in Telenor, their advertising seems clear-cut. In an old brochure meant for internal use, the introductory text states: "Telenor's identity is to be crystal clear…the reason is…that we are different…because we are". Nowhere in the 50 pages that follow, am I able to retrace meaningful ways that Telenor are different. Except one thing: the depicting of national imagery prevails. Picture 1: a girl on top of a mountain. Picture 2: pine trees with woman. Picture 3: a man in a worn-out orange raincoat sitting at a cafe using his laptop. This one at least has to do with technology, even though Telenor makes none of it. Interestingly, the question of national imagery is even mentioned in the brochure. "What makes communicative situations typically Norwegian? And what can we, from the outset, define as typically Norwegian?" It seems that while the construction of a Norwegian brand is a conscious effort, the factish is far from complete.

Still from a brochure, I find Telenor has portrayed a young, blond Norwegian girl, probably 18-19 years old taking sun on the deck of a ferry, with a cellular in her hand. Typically Norwegian? Maybe. For as the story unveils, we learn that Norwegian Telenor has seven features: people, environment, symbols, language, technology, colours and music. We learn that Telenor's problem in market communications is that they sell "invisible" products. We read:

> "Therefore we have to borrow cellular phones, faxes and computers from other suppliers in our communication. Integrated in an environment these products make sure our technology is visualised to the receiver".

The focus on exploring nature is followed up by Telenor International, a subsidiary of Telenor AS. In early 1998, their new

motto becomes *No barriers*. "It reflects the Norwegian trait for exploring new worlds and embarking on new ventures - something that drove on our more famous explorers such as Roald Amundsen and Thor Heyerdahl", the commercial reads. We step to the home context; half a year later Telenor Mobil run TV commercials to demonstrate the virtue of the cellular phone in emergency situations. Effective use of suddenly sick, isolated old people in combination with a typical bad weather situation, Norwegian narrow roads, and a handy Sea King helicopter drives the point home. Technology is the saviour. We need the cell phone. Later, as it turns out, Norway comes to adopt the mobile revolution through something as simple as text messages, or SMS. Here, for a change, Telenor's illustration in the early phase is effective. Their tagline in a major newspaper campaign was 'email in your jeans pocket', alluding to the fact that some people put their cell phone in their jeans.

The story of the international success in the development of advanced satellite communications was shaped by a confluence of factors. It had to do with the fierce Norwegian mountains which provide a major obstacle to signal transmission. It had to do with the strategically important island of Spitsbergen (Svalbard), shared territory with Russia, up far above the Arctic Circle. In fact, the challenge of getting TV signals to Svalbard, though only a side effect of their efforts proved to be a great moment in the history of Norwegian telecommunications. It happened as late as in 1984. According to research director Roy at Telenor R&D, this success is related to the scientific insights, resources, leadership as well as the common vision among the major actors (industry, government and Televerket itself).

Silent engineers: the predicament of organisational culture?

The idea that the global trends in work practices have a foundation in new information- and communication technologies seems to exist both among Telenor engineers and among marketing and management. Despite this initial agreement, Telenor's many subsidiaries have quite different sets of visions. The R&D department is research-focused, rather than development-focused. Telenor's Corporate Division tries to implement a die-hard, long-term

technology strategy. Telenor Mobil both sells the notion of work 'anywhere, anytime', and 'nomadic work' through their *Nomade* product campaign and also 'safety, availability and control' against the backdrop of 'rugged Norwegian nature' through their cell-phone subscription ads. Tensions are bound to occur, and the organisational cultures seem manifold, split, and self-contained. We are reminded of the business corollary created by one of the former CEOs of Hewlett-Packard: "If HP only knew what HP knows". Where we would expect conscious switching of visions between the different types of experts depending on the audience and situation, it seems like Telenor has adopted the *laissez-faire* attitude. Kunda's (1992) description of total corporate culturisation does seem far away, indeed.

While the management version of nomadic technology promises a new worker reality and take the uptake as given, the engineers do not consider the adoption process at all. They are left wondering what is going on, and both parties ironise over the incompetence of the other.

There are two interpretations of this as I see it. Either this means the engineers develop things they do not know what could be used for, or their things become 'hype' because those who define the use of technology do not know what it is about. In any case, engineers are silent and do not voice their opinion to change the process. Are they silenced? Previous studies of organisational culture (Kunda, 1992) has indicated that strong corporate steering and design efforts might be met with resistance. While it is likely that Telenor has not been subject to such a strong corporisation, due to its recent history as a semi private company, engineers might have chosen to resist by 'saying nothing' as long as they are allowed some kind of liberty on their own technological territory.

A possible third option, of course, is to see the nomadic as an impossible concept within the Norwegian collective, because people generally might see themselves as 'rooted'. Evidence of this is their continued resistance to EU membership, the high mountains that separate Norwegian regions from each other, and the quite straightforward notion of a local identity, or home, that is found here.

At the very least, it is unclear whether the technology meant to be fundamental to the emergence of a nomadic form of work really can carry such a promise.

Conclusion: non-hybrid engineers

The role of engineers in technology development is not straightforward. In the introduction, I said that engineers, as typical knowledge workers, might play a dual role both as technology developers and technology users (nomadic workers). But it appears their experience of nomadic work has not formed the basis from which the ICT product *Nomade* is shaped. The Telenor case study portrays 'pragmatic' engineers who do not believe completely in the transformative capacities of their technology. That is, they conceive of technology in a much more 'realistic' manner. They are, however, not successful in heterogeneous engineering (Law, 1987), and are helpless against the expectations of management and marketing.

My data questions earlier views that engineers are visionaries (Callon, 1987) or 'captains of industry' (Sørensen, 1998). While most Norwegian engineers took management roles, many Telenor engineers remained 'technologists'. Thus, they were not 'transformed' (Sørensen, 1998) back to consultants when the trend turned around. In Telenor, engineers take more traditional roles as technology developers, yet without high status, while managers and external consultants (management, marketing), and to some extent social scientists, take leadership roles. So, engineers are not even consultants, but seem constrained to mere technological experimentation on limited research budgets.

Secondly, the tensions between social and technical aspects of engineering work, marketing efforts, and management practice has turned out differently than Callon (1987) and Law (1994) present it. While we might still agree with Law (1994) that organisations are heterogeneous orderings, it seems like Telenor *workers* structure this discussion so that the technical and the social do not become hybrid, but rather remain separate, and separated entities. The tension between engineer-technologists and business-advertisers is quite pronounced. Telenor seems to be torn between a technologically minded engineering culture with little power to create credible factishes (Latour, 1999) crashing with a superficially 'global' attempt to market Telenor's products on behalf of management. For example, the Nomade campaign comes into the middle of this clash between a technologically minded engineering culture and a rising class of mobile marketing missionaries. Our study gives reason to question Callon's (1987) statement that 'engineers are better sociologists than

the sociologists themselves'. Some engineers do not have the symbolical vocabulary to infect others. Whether they are, or not, seems to be a highly contingent matter.

Alternatively, Telenor is highly aware of how branding occurs in everyday life. They are choosing to let their brand be decided by their own workers, with their different perspectives, and with their shared Norwegian background. Thus, the Norwegian theme of nature, practicality, and mobility might have emerged in the process. If this is the case, Kunda's (1992) exploration of corporate culture might not be valid for Norwegian companies. In effect, the thought that the organisation can be a cultural 'whole' must either have been taken-for-granted, or has seldom been an issue in Telenor. In this regard Telenor resembles Law's (1994) description of the organisation as a hybrid, heterogeneous arrangement of people and technologies.

Thirdly, Telenor management overestimated the change occurring in Norwegian work-practices. As it were, Norwegian workers were not nomadic enough. You might say Telenor started believing in their own factish (Latour, 1999) visions, and seduced themselves, helped by the massive visionary production of other high tech companies, as well as globalisation scholars like Beck (2000), Castells (1996), and Lash & Urry (1994). It is the reality of these visions that all of us have to work with, whether as the telecom industry or as the users. Telenor's *Nomade* has to match these ambivalent processes, and is really having a tough time. Maybe the concept was good, but the package is not really culturally prepared within the organisation. Historical explanations on how Telenor has evolved, and by whom the organisation was built has to take some of the blame for this. Telenor might not have sold that many *Nomade* subscriptions, but thanks to other ICT giants, the marketing impact of the virtual credo is still considerable. And people are adopting somewhat mobile solutions. So, in effect it was the product, not the practice that went wrong. But the changes were not so sudden.

In this case, management promises too much and engineers can not possibly follow this up. With Pinch and Bijker (1987) in mind, I think 'flexible interpretation' has a limit. Telenor is a case where 'flexible over-interpretation' occurs. There are limits to how many things the nomadic could mean. The metaphor, seemingly crystal clear, became infected by too many semantic twists, and troublesome technologies. There is no translation (Callon, 1986) between technology developers (engineers) and symbolic producers

(marketing and management). If closure it is, that closure has a dubious nomadic dent.

This leads to the question: who created *Nomade*? Was it the managers who went to the airport and found people used their laptops in a boring fashion? Was it the marketers who coined the term *Nomade* and bought the vision of working 'anywhere, anytime'? Or was it the engineers who made nomadic technology possible? In the end, the symbolic wrapping became stronger and more resilient than the technology itself. In the end, what occurred was a Dilbert-like situation where (1) the product was not ready, (2) the market was not ready, but (3) marketing and management was. A classic situation emerged where marketing gave promises the engineers could not keep. In the end sociologists might be better engineers than engineers are. But, of course, this would be to equate marketers with sociologists. And the readiness of marketers might have been superficial. As we have seen, they had no idea, basically, about the deeper socio-technical constellations in play (not that this was expected). In any case: Callon (1987) be warned! Future research has to grapple with the notions of hybrid, social and technical, and it is by no means clear what these terms might mean in particular actor-networks. The old Thomas-theorem applies: what people believe might become real in their consequences.

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Notes

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[2] For simplicity, I am here using the name the company has now. At that time it was owned by the Norwegian state, and was called Televerket.

[3] Telenor as of 2000 is very different. Two campaigns are much bigger than Nomade. Firstly, the launch of the mobile portal Djuice. Secondly, the campaign when Telenor was introduced on Nasdaq.

[4] Graphical identity guide for Nomade, by Bates Benjamin, 1999.

[5] Interview with project coordinator of Telenor Nomade.

[6] Phone interview with Per, February 18th 1999.

[7] Mail-interview with an employee at Telenor Mobil, 27.07.99.

4. Organising the nomadic work-place

How knowledge workers operate between community and cyberspace[9]

Abstract

This article explores knowledge communities, workers, and global practices in Norway and the United States. The case studies are Awarehouse, Cisco, Telenor, Picostar, Campsix, and Berkeley Incubator - telecom companies, community work-spaces/innovation houses, or business incubators. The setting (urban, suburban, regional, global) in which advanced virtual and non-virtual work occurs is also considered. Globalization theory (Castells, 1996), cyberspace theory (Wellman, 1999), geography of innovation (Storper and Walker, 1989), and organization theory (Jackson, 1999) is used to shed light on these practices. The aim is to identify the pragmatic space between work practices and technological breakthroughs, questioning the meaning of 'social' and 'physical' aspects of work. Findings include (a) that cyberspace is a relevant arena for knowledge and communities of practice and (b) that knowledge work increasingly occurs in a 'hyperspace' of intensified space and place relations, because the high tech firms studied both embody and transcend them.

[9] I would like to express my gratitude to Professor Knut H. Sørensen at the Norwegian University of Science and Technology for helpful comments. The article also benefits from fruitful intellectual exchanges with CEO Ketil Thorvik and CTO Stig Aga Aandstad, InnoVisionHouse. I thank the Norwegian Research Council for generous support to this project.

From workplace to cyberspace?

The emergence of the modern factory (Hounshell 1984) as well as the modern office (Lockwood 1958) was based on the establishment of collectives of workers. The workplace was an arena of unmediated social encounters, an aspect more or less taken for granted by traditional sociology of work. However, lately, we observe the increasing popularity of concepts like nomadic work and virtual organisations. In particular, the idea of global work and international companies suggest a changing nature of work where social encounters may be mediated by new information and communication technologies.

Clearly, the Internet has become very widespread, and many companies make frequent use of advanced Internet related technologies. Present marketing of high technology suggests quite strongly that you might not need to be in the office any more. Commercials show business leaders giving orders through PDAs, Cellphones, and Laptops - sitting on Caribbean beaches. In *The Dream Society* (Jensen, 1999:130) this vision is spelled out:

> «[…] the workplace can be wherever you happen to be at any particular moment. We will be able to communicate anything, at any time, to any place – and we will be able to do so in full colour. This is the technological background for the disappearance of the work place, as we know it. We can work at home, on the plane, aboard the yacht, and on vacation in Borneo. The geographical dimension to work has been abolished».

Similarly, high tech think tanks like The Nokia Wireless Future lab says that soon a customised data environment will follow you everywhere, they call it the 'personal bubble' (Wired magazine, October 1999). The long-range vision is that once we stop thinking of the phone as a handset with a keyboard, we envision «applications that bring the information close to our senses: eyeglasses, earphones, wearable wireless». Indeed, all these displays could be inputs, recording everything you see and hear, and shipping it all off to your personal server».

This marketing is very persuasive, probably because it seems to combine an argument about what is necessary to be competitive in

the "new economy" with attractive ideas that work may be done in more comfortable places than a tiny office. However, some recent experiences of mine made me suspicious that the marketing argument was misleading. This motivated me to study work in companies that I expected to be on the vanguard of the new trends, namely telecom companies and so-called incubators.

The choice of the latter type of company was inspired by my own experiences from part-time participation in the establishment of such an incubator. The company was called InnoVisionHouse. It was established in the summer of 2000, still in the heyday of the dotcom era.

InnoVisionHouse was funded by Kjeldsberg, the oldest merchant family of Trondheim. The first year was spent in securing a physical location at Nedre Elvehavn, a dockside development in Trondheim, Norway. Following an urban trend, six start-up companies agree to co-locate in the two-century old brick building by the river. Their motivation was mixed. Some saw this as an opportunity to get cheap office space in a young, entrepreneurial climate. For others, this was a safe haven before a possible large scale business launch. For all it was a social environment. Parallell with the development of an innovative work environment characterized by open walls between companies, collaboration, and social gatherings on Fridays, InnoVisionHouse also have been running a webzine (www.ihouse.no) that is documenting the activities of business and technology companies and discussing trends. By 2001, InnoVisionHouse has become the home of 22 start-up and early phase media- and technology companies, and the number is growing. Within the House there is also a network incubator, currently (2001) hosting two firms. Here, companies receive considerable attention and advice in order to accellerate growth and take them to market. Says CEO Oddbjørn Rødsten of Plasus Technology, developing mobile tracking and positioning devices and software: "We would not have been here today, had it not been for InnoVisionHouse. They believed in our idea and helped us start the company. While their expertise and networks have been indispensable, we have also benefited from their encouragement on a daily basis. Being part of a community has made our start-up period less lonely".

There are also critical voices. Dossier Solutions, who make interactive teamwork and project competence software solutions for knowledge businesses, have not been a big part of InnoVisionHouse

activities, despite residing in the penthouse position, overlooking everything. Their approach has been to target 'where the market is'. CEO Per Kristian Vestre states: "While we are not negative to the efforts of InnoVisionHouse, we do not see how it helps our business. We have a global product". Dossier Solutions prefer to deal with their Singapore office, or with the marketing department in Oslo, to local interaction with other companies or their customers and investors. The office setting of their headquarters and R&D unit is to them a strategic choice because it is close to the Norwegian University of Science and Technology. Interaction with other high tech companies in their surroundings is not a priority.

With this personal experience in mind, I wanted to inquire about the intersection of two seemingly separate strategies of economic embedding in today's economy: global embedding and local embedding (Giddens, 1991). It seems reasonable to assume that the former strategy typically is employed by companies whose product has a world market, while the latter strategy is prevalent among local players. However, this hypothesis may be too neat and it does not fit with the more general arguments provided by high-tech marketing. In particular, thirty years of more or less failure of telework experiments suggest that we need to look more closely at the actual practice of work in companies where the nomadic and the virtual could be expected to succeed. This invites a particular focus on so-called knowledge work.

The practice of work

Traditional sociology of work and professions (Abbot, 1988; Freidson, 1973) describes work as a centrepiece of modern identity and social life. A large number of studies of modern worklife has emphasised the role of the workplace in satisfying important social needs and criticised for example assembly line organisation as alienating and degrading because social needs are neglected. However, to the industrial sociologist of the 1950s, 1960s and 1970s, the idea that work could be nomadic would run counter to their very definition of work as a collective enterprise.

Studies of professionals basically share the same understanding of work. The ethos of professionals has been understood as reproduced through workplace interaction and the norms of conduct as reinforced by colleagues and clients in daily practice (Crozier,

1971; Mills, 1956). Moreover, assumptions that modern societies produce a lack of unmediated social encounters play an important role in much post 1945 social critique (Riesman, 1950).

However, there are new theoretical developments that seem to provide different arguments. Of particular relevance are recent contributions that may be classified under four headings: globalisation theory, cyberspace theory, geography of innovation, and organisation theory. I will briefly summarise some of the major arguments.

The adoption of Internet technologies and the changing mobility patterns of people, things, and information is commonly viewed together as a process of globalisation (Giddens, 1991). While accepting the change itself, globalization theory tries to account for the impact of these changes. Globalisation theorists, policy-makers, and visionaries share the notion that social space has become ubiquitous[10] (Castells, 1996; Lash & Urry, 1994; Featherstone & Lash, 1999; Sassen, 1994; Beck, 2000; Giddens, 1991). Castells (1996:244), in particular, claims a networked mode of production is underway. This will reshape business because networks adapt much quicker than before. The élite is not any more constrained by a place-bound logic, but can position themselves continually, shift attention, block outsiders, and 'forget' territorially bound people on the outside, making it impossible to 'get in'. The élite, in Castells' (1996) view, does not operate in places, but in spaces of flows. Flows of capital, information, technology, organizational interaction, networks, sounds, symbols, and images, are controlled and initiated by powerful *switchers* who believe in the 'spirit of informationalism'. This, incidentally, originates as a 'hacker ethos' (Himanen, 2001), but spreads into society at large.

Globalisation through the Internet is often viewed as a social enterprise, and cyberspace as a social space. No surprise, Internet scholars tend to view the Internet as the most fundamental element of globalisation, and often share the view that virtual space is more and more important in society (Turkle, 1999; Wellman, 1999). Indeed, 'we are living in a paradigm shift, not only in the way we perceive society, but even more in the way in which people and institutions

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are connected. It is the shift from living in 'little boxes' to living in networked societies" (Wellman, 1999:648). These boxes are for instance neighborhoods, and it seems evident that 'people usually have more friends outside their neighborhood than within it', thus are 'networked', and they actually use 'computer networks as social networks'. These networks are social 'because they are', it seems, and in addition they bring new social elements in, like asynchronous communication, rapid exhanges, complex interactions, own norms, and more extreme communication. Forwarding allows indirect ties to become direct relationships, email is accessible, one-to-many communication is simple, it 'fosters weak ties', sustains specialist communities of interest, and support both purely online communities, as well as those who intertwine computer-mediated and face-to-face communication.

Wellman (1999:xx) argues communities in cyberspace are effective networks, arguing you should look for socially, not spatially defined networks. Whereas his main focus is community networks, Wellman's findings have implications for business. As part of the social network analyst community, he argues communities usually are loosely bounded, sparsely knit, and with specialized ties. To Wellman, community is not a place, but a social network. Accordingly, we should study work practices, not in particular places or settings, but we should focus on 'what people do for each other'. Scholars concerned with the geography of innovation are sensitive to territorial issues (Saxenian, 1994; Sassen, 1994; Storper & Walker, 1989). As Storper & Walker (1989:226) argue:

> "The prevailing assumption in the social sciences is that society and economy have geographical outcomes but not geographical foundations. We disagree. In our view the territorial arrangement of activities is central to the broader constitution of any society's economic, social, and political fabric; indeed, societies are shaped only by virtue of their imbrication in territorial formations".

Global capitalism, to them, grows through territorial development (p.9). And, 'the potential for new industrial locations to develop at relatively unindustrialized places has limits … [because] … resources cannot be immediately transferred…this is especially true of highly-skilled scientific and technical workers, who, regardless of wage incentives, often cannot be induced to migrate"

(p.75). Thus we see the development of regional growth complexes near metropolitan cities like Route 128 near Boston, Orange County near Los Angeles, and Silicon Valley near San Francisco. The workplace itself is a geographical cluster, because of the intensification of work possible in factories, workshops, and large workspaces:

> "It would be a mistake to treat workplaces as mere points on the map, because they can include dozens of buildings, yards, canals, roads, or docks, extending to scores of acres. Furthermore, factories and other large workplaces, such as construction sites or airports, generate complementary processes of spatial aggregation by drawing into their orbits many smaller suppliers of materials, parts, machinery or business services" (p.78).

Due to the intensity of knowledges, cultural institutions of flow, and diversity of people, cities like San Francisco become havens of peripheral expression. Sometimes knowledge of the periphery is much more available in the centre itself because of the way peripheral knowledge is organised and analysed (Hannerz, 1992:222).

Of course, work has also been thoroughly studied as an organizational topic (Adler, 1992). Recently, what we could call advanced work practices have also received attention (e.g. Frenkel et al, 1999). Management literature, in particular, shows a growing interest in learning and knowledge (Senge, 1990; Argyris, 1993, Davenport and Prusack, 1998). Drücker (1993) has since the 1960s called such practices 'knowledge work'. High tech, especially, uses knowledge workers, people whose work consists of reading, researching, analysing, and presenting information (Drücker, 1993; Frenkel et al, 1999; Nonaka & Takeuchi, 1995; Reich, 1994; Tolmie, 1999, Ware & Degoey, 1998). Frenkel et al (1999) claim work consists of knowledge (theoretical, procedural, or declarative), creativity (where new solutions are developed), and skills (analytical, action-centred, and social). The organisation of work, however, is believed to change with the changes in technology. In particular, there is a strong belief the work altering aspects of computer technology (Jackson, 1999). With the advent of knowledge management, knowledge is assumed to be mobile, and transferable, even while relatively tacit (Nonaka, 1998). Knowledge moves by ways of social capital, the trust and social relations that, when enhanced by virtual

networks, enable organisations to share, create, and use an organisation's knowledge assets (Lesser, 2000:16). When knowledge flows virtually, it is in some sense, disembodied (Jackson, 1999:10).

While there is a relative lack of empirical research on virtual work (Depickere, 1999:100), both research and practice so far show that virtual teams need to build a relationship by face-to-face encounters *before* they can collaborate effectively (McDermott, 1999:104), and often need to reinforce this relationship *during* knowledge work processes (Riain, 2000), as well as *after* such processes are over. Building relationships seems essential to launch virtual work. For instance, many firms are born from personal networks that are formed at conferences and meetings where face-to-face contact is made (Jackson, 1999:213).

Knowledge workers, it is assumed, engage in complex interchanges with clients and co-workers, and analyze large amounts of oral and written material. With Reich (1991) they are 'symbolic analysts', thus the cognitive capabilities are challenged. However, literature also orients knowledge work towards social intelligence (Gardner, 1983). Examples of this can be found in job advertisements. For instance, *The World Economic Forum* wants a 'Relationship Manager' in the Regional Affairs Team (October 1999), someone who has «a unique combination of communicative, conceptual and operational skills». Then, this is specified as «good communications and networking skills (spoken and written), research skills, analytical and synthesis capabilities, and the ability to understand the opinion of others». In addition to this, a specific type of *personality* is singled out as a fundamental asset. The keywords are «doer» (with entrepreneurial spirit), «event manager», «generalist», and «communicator» and «team player». If we look at a similar job-listing 10 years ago we find fewer of these terms, and more weight on formal qualifications as well as traditional business experience (certainly not entrepreneurial). This example, of course, is not selected randomly. The Regional Affairs Team is expected to conceptualise, build and execute the program of each Regional Summit. The team builds, maintains and continuously deepens the networks and communities of regional leaders. In other words, this is a typical global networking job.

Summarising the last decade's writings about knowledge work, taking into account organisational and technological developments, work is mobile, collaborative, customer-oriented (Frenkel et al, 1999),

and virtual (Jackson, 1999). But while new work practices are explored, there is a lack of attention to the day-to-day operation of knowledge workers (Ware and Degoey, 1998:5). In fact, it is often assumed that knowledge work is a virtual affair that can be completely automated, or virtualized. Hence, the development of distance-irradicating software and conferencing tools like Telenor' s "Meet at 119", and the August 2001 advertising of Nokia communicator's spreadsheet capability with: "get your work done before you get to work". To Bontis and Girardi (1998):

> "The human capital embedded in these employees is important because it is a source of innovation and strategic renewal whether it is from individuals' brainstorming in a research lab, daydreaming at the office, throwing out old files, re-engineering new processes, improving personal skills, or developing new leads in a sales rep's little black book".

However, organisation theory, when focused on learning (Senge, 1990), tends to take a rationalist perspective that singles out individuals or organisations as objects of study, not their configurations and practices across organisations and networks. When human capital tools are employed, the value is computed as an effect of the sheer intelligence of each organisational member (Bontis and Girardi, 1998). The literature on 'virtual organisations' (Davidow and Malone, 1992:216) were early to claim that 'virtual' products would soon dominate, breeding a new worker where 'solid and steady', once virtues are negative traits in the virtual corporation.

All of the approaches reviewed above, whether globalisation theory, cyberspace theory, regional studies, or organisation theory, tends to take a nomadic approach to knowledge production. That is, they subscribe to the view that knowledge can be disembodied, codified, and transferred without people, or at least that work mobility, by Internet technology, is greatly enhanced. In fact, as we have seen, Castells (1996) argues the norm will be that networks of people from many different organisations create virtual 'project' organisations.

By contrast, the communities of practice approach (Wenger, 1998) works from the assumption that work is embedded in a larger framework. These communities have a 'geography of practice' defined by relations of locality, proximity, and distance 'which are

not necessarily congruent with physical proximity', says Wenger (1998:130). To Seely Brown and Duguid (2000:168) we need to see this as knowledge ecologies. However, the conditions of legitimate peripheral participation often turn out to be intense and performative (Lave and Wenger, 1991). In fact, the lost proximity of virtual teams sometimes has implications for the emergence of trust (Nandhakumar, 1999:46). Also, teleworkers who work from home (Mirchandani, 1999:67), or workers without offices sometimes feel the need to develop a particular 'environment' for work where they can build relationships. Flexible working means they miss a lot of organisational storytelling (Galpin and Sims, 1999:85). Hence, like Granovetter (1985) argues, it seems clear that economic action is embedded in social relations. To him, detailed study of interpersonal relations is needed (Korsnes, 1998). In consequence, both organisational culture, understood as implicit orientations on groups interaction (Suomi and Pekkola, 1999:123), and larger (suburban, urban, regional) cultures impact how mobile work practices can be introduced.

It should be clear from the above review that the understanding of the role of social relations of work has become contested. What used to be a standard view, that work played an important role in meeting people's social needs, cannot any longer be taken for granted. However, the individualised conception of work that argues that nomadic practices are productive as well as socially rewarding has not replaced the standard view. While there is little doubt that there has been a diffusion of nomadic work practices and virtual organisations, it is less clear how important this phenomenon is. Do we really observe a nomadic transformation of work, or is the trend basically towards a mix of collective and nomadic practices?

Method

This paper is based on a number of case studies of telecom companies and incubators in Norway and in California. Both of these countries are at the forefront of Internet usage, they provide ideological support of incubation, while the resident telecoms are eager to exploit the possibilities of virtual working in particular as a business idea to provide the necessary technological solutions.

The data were collected in 1999-2000 in Norway and during my stay as research associate at University of California, Berkeley.

Lessons on the workplace and setting of knowledge work were also drawn from fieldwork in the Silicon Valley region. The companies I studied in more detail were AT Kearney, The Design Company, Guru.com, Armada Global, Futureperf, Postcommunications, Scanaccellerator, Razorfish, Cisco, Berkeley Incubator, 3220 Sacramento Street, Formfactor, Campsix, Picostar, Santa Clara Software Business Incubator, Industry Standard, McKenna Group, IBI, and It's-quick. Most of these are New Economy type companies (incubators, Internet start-ups, consultant firms, or software firms). Some were purposely targeted; others were recruited by snowball sample, or directly via my Berkeley affiliation. Qualitative data from these companies was collected through interviews with key personnel, workplace fieldtrips, and participant observation. In addition I interviewed five venture capitalists and one angel investor (individual investors, who often are former entrepreneurs who invest "for fun"). I have also met with a large number of software programmers, engineers, entrepreneurs and commentators on a more informal basis throughout the year. The case-study of Telenor also utilises data collected as part of a master thesis on telework (Langseth 2000).

One of the telecom companies I chose to study was Cisco Systems, one of the world's largest companies, which is situated in California. The other is a smaller formerly 'national' company, Telenor in Norway. Both of them are active in the discourse on nomadic work and virtual organisations. These companies are also interesting because they invite a comparison of their marketing messages and their in-house work practices. If they practice what they preach, they should be pioneers of nomadic work.

The second set of case-studies consists of incubator companies. The choice to study business incubators was initially motivated by the seeming contradiction between the ideals of a high tech worklife towards virtuality and the fact that these companies were established to provide particular social environments of work. The selection of such companies was meant to highlight opposites. One, Awarehouse, exhibits extreme community-based work practices. The other incubators (Campsix, Picostar, Berkeley Incubator) were more 'standard'. While the telecoms were extreme on marketing mobility, the business incubators were against this.

A total of 30 interviews were conducted for this study. The informants were asked about their use of ICT and their way of

working, but the interviews were focused on company practices rather than individual details. Thus, details about the actual content of work have not been collected.

In particular, Cisco but also Telenor are large companies. Thus, the limited numbers of interviews raise the issue of whether the data may be considered sufficiently representative to allow general characterisations of these companies. However, the research questions I raise are rather robust in relation to these issues, since my concern is in the underlying logic of the practices of work rather than in the distribution of the one or the other practice. But of course, some caution has to be exercised in the interpretation of the findings.

Community versus cyberspace as organising principles

The organisation of knowledge practices is, at first sight, surprisingly uniform in high tech companies across the world. This might have to do with the massive influx of American management practices, or with high tech advertising. However, when we look more closely, we observe considerable variation.

Let us begin by considering the situation of Brent Williams. He belongs to the new generation of knowledge workers. A web programmer, he lives and works in Awarehouse, Howard Street 960, SoMA, San Francisco. In the 1920s, Awarehouse was a Levi's factory. In 1994, Andy and Tony moved in, and brought Brent as well as others from the Stanford school of product design. Here they created their own lifestyle, built on openness, trust, and fun. The office space is rough, most furniture is bought to wear and tear from nearby flee markets or ordered on the everpresent Craigslist (www.craigslist.org), a community website that started in Northern California. Awarehouse is a sort of 1960s collective with commercial parts. "We only do business with people we adore", proclaims Angela from PR-agency Armada Global. ("naked PR experts"). Here you find architects, web programmers, and a juveleer. Even two authors have their desk here. Most people who move into @warehouse are friends, or friends of friends. "We like it this way", says coordinator Brent, "this is a really hangloose environment, we invited everyone we knew. It is a space where people can find community".

The group dynamics of this work collective is stimulating. Not haphazardly, they actually like each other. They see each other's customers and there are few secrets. Customers who enter the non-prominent glass door from a ghastly green facade, meet a rough location, raw, dusty floors and wooden, sprinkly roof that looks like the inside of a Viking Long Ship. We are in the middle of San Francisco's Multimedia Gulch, with the necessary ingredients of computers, communications, and coffee. The owner of the house, luckily, knows little about business, and the rent is low. "We have a party in the garage every month", says Brent, and invites to the next party. "The parties give us a thing to do together, but it also brings business. Often, I hear 'I have been to one of your parties' from house customers.

But, everything will not stay the same, "the space is growing with the people in it […] we are thinking about having two levels, one more respectable, fancy, 'posh' area, and another less developed space with a more rough look. For it is important not to loose the unfinished touch. It is good to be funky", Brent nods knowingly, and leans forward. Businesswise, Awarehouse is quite particular. Rough in the edges, true, but also innovative. Awarehouse firms prefer to have customers come there, rather than go to their customers because they actually 'like' their office space. Knowledge work, to them, means human encounters, relaxed atmosphere, and creativity. But the most striking feature is how clients are encouraged to meet with other co-located companies, by way of informal referrals. And, as Brent says: "we meet each other clients. And it is an open space, so everybody hears each other's business. And nothing is locked up". Certainly, Awarehouse is based on trust. No wonder they want to attract 'friends of friends'.

The first impression of Cisco Systems Inc. is that this company is an anti-thesis to Awarehouse. Historically, telecoms have not been 'innovative', but rather quite structured, and 'boring' companies. It is not until the late 1990s that satellite communications matched with developments in information technology produce unprecedented expectations. First, the fixed Internet network, then possibilities with adding wireless communications empowers visions about virtual work. Then, visionary production blasted into our homes - Internet commercials, cell-phone salesmen, and everyday practices of our teenages made our reality saturated with wireless rhetoric. Awarehouse sees work from a community-perspective, even more

radical than Wenger's (1998) notion of community of practice. In Cisco systems Inc., by contrast, work is thought of as completely virtualized. "We do everything online", states Sarah, a manager with the company. Bunnel (2000:xii) writes in his celebratory book on Cisco: "I hope to explain how Cisco has become synonymous with the Internet". Importantly, Cisco actually cultivates a virtual culture both inside and outside its borders. No product is sent out without rigorous virtual testing by Cisco employees. Cisco's Intranet, as well as their web site (www.cisco.com) is among the largest on the Web. High tech marketing is fierce, and Cisco rose rapidly with the advent of the Internet as a major producer of computer network hardware and infrastructure. 'Make friends@Cisco'. Its job advertising campaign of the summer 2000 states the obvious: when all you do is work, your friends will be at Cisco. Its mission statement, to change the way people work, live, play, and learn, resonates with most of Cisco's Californian employees. Bunnel (2000) claims Cisco employees are 'dedicated and driven'.

The physical work-setting at Cisco headquarters is standardised, corporate, and isolated. 'Cisco village' lies outside San Jose, and there are no other companies around. The huge water fountain with Cisco's emblem dominates the main driveway, all houses look the same, and so do the cubicles between which we had to whisper when walking around. The place smells of hygiene, standards, rules, and planning. No random objects are lying around. I could not help but think this would be the perfect place for rational planner-types.

Fieldwork for this study was conducted at the hight of the so-called New Economy. While hype was high, the community factor was also pronounced, maybe because companies and entrepreneurs could afford it. For whatever reason, Awarehouse emphasised community as their core strength. So did Cisco, for that matter, albeit for different reasons and with different measures. Where Awarehouse secured community by friends-of-friends, with laid back, hip parties, Cisco ran standardised worker get-together programs and supplied interest-based communities for their life-style segment. Both of them, at that time, had the resources to spend time on worker maintenance.

In line with Ware and Degoey (1998), my data from Cisco as well as Awarehouse shows that knowledge workers analyse, synthesise, link, choose, decide, and plan in a variety of intense work

practices. But they also socialise, laugh, fight, flirt, break-up, and relax.

Says Roger, a consultant with the McKenna Group: "Cisco is impressive for the way they leverage the Internet in anything they do […] But, I get some of my most interesting contacts at my kid's birthday. The fusion between work and family is almost complete. And, an outsider can only tell you so much. This also goes for people generally here in the Valley. They only trust people who have done it personally". This is reverberated by John, a former Cisco employee. "Visibility is key at Cisco", he says, "you cannot get by without face-time. You get promoted based on image and culture. Even at home, my email-time is monitored by my boss. I sent him an email whenever I logged on to the system".

Knowledge workers pitch their ideas, or create a pitch out of other people's ideas. But knowledge work is more than focusing attention. Their task is to convince, convey messages, and combine thoughts into worldviews. And their task is influenced by personality, mood, and setting. In addition to virtual helping hands in Internet, PDAs, cellphones, and laptops, work requires a context, and a physical playground.

Thus, Cisco is closer to the ideals of traditional sociology of work that recent theories of globalisation and virtual organisations suggest and also closer than suggested by its own rhetorics. The company definitely utilises the potential of new ICT to do work, but they retain the ideal that work is communal rather than displaying anomie. Why is this?

Marketing is marketing: The case of Telenor

While Cisco is a world leader in the extended 'telecom' type companies, Telenor, as the largest Norwegian telecommunications carrier has a way to go in terms of size. But what about it's work practices? Owned by the Norwegian State until the late 1990s, it has undergone a myriad of organisational changes, and now consists of at least eight different subsidiary companies. The nomadic theme has been a part of Telenor even before the current mobility craze. This has to do with Norwegian challenges to communicate across natural barriers - lakes, mountains, and oceans. In fact, the Scandinavian lead in satellite communications is, in part, due to this challenge.

In the summer of 1998 Telenor Mobile launches a mobile office package called *Nomade*, with the slogan "freedom to work independent of time, place and space". The product itself was no success, due to its launch well before the product could be delivered. It ran on merely 2000 customers the first years, and never completely took off. On the other hand, Telenor has had more success with its mobile portal, Djuice, which will be launched world-wide.

In contrast to the nomadic ideals of their marketing department, Telenor itself is much more cautious in allowing nomadic work practices. The company has given each of its employees a home computer with Internet connection, but this is explained to be part of a strategy of training and not of teleworking. Employees are supposed to use the home PCs to improve their computer skills, but not for work (Langseth, 2000). The rationale behind this rather conservative strategy was explained by Eve, a personell director with Telenor in the following way:

> "Flexibility is so much. You cannot have someone working from home and being flexible […] if the organization is not ready for it. For instance, if somebody is home all week and only comes to work for two hours, then we've got to make sure s/he meets somebody those two hours […] I think we [Telenor] have a really big job before us".

Telenor knowledge workers actually work in a traditional fashion. They spend time in their office, organizing papers, writing proposals, calling and emailing customers, going to lunch in the corporate lunch room, participating at in-house meetings, and occasionally meeting customers for lunch, or going on a business trip. In the R&D headquarters at Kjeller, Telenor workers are completely isolated from other companies, apart from some defence installations and R&D activities. This closely mirrors Cisco's remote San Jose campus and it might be significant that many telecoms seem to make this choice. On the other hand, large firms generally need so much space that they are constrained to remote locations.

Different from Cisco, Telenor's Intranet has been met with considerable internal resistance. They seem to prefer their own ways of dealing with work, rather than being imposed to follow new routines online. Also, Telenor workers do not themselves agreee on, nor do they know about the marketing efforts of other parts of their organisation. Thus, some workers have no idea about the Nomade

product, nor of Telenor's close reading of 'Norwegian metaphors' and their sponsoring of the Volvo Ocean Race (formerly called the Whitbread regatta).

Telenor officials claim that the company has been hampered by too many office locations and too many scattered subsidiary companies. This is an ironic fact, given our point about mobile communications across boundaries. Even between groups at the same location, communication has been limited. Rolf, a Telenor R&D employee states: "Talking to other groups during lunch? There is very little of that. Future Users [group] sit over there and eat - Applied Media Technology sit over there, it goes like that. But I have a project with another group, and we [talk at group meetings].. Late 2001, 35 sub-units will co-locate on the old airport grounds just outside the capital of Norway, Oslo. Here, a completely wireless and paperless solution is underway. There will be no offices and only workspace for 5000 out of 8000 employees.

This change may give Telenor a boost in terms developing new work practices that are closer to the ideals of the virtual organisation. Of course, the effects remain to be seen. Part of the changes only mean that Telenor pursue a trend initiated by engineering companies decades ago, the use of open office space, work cubes and meeting rooms to support continuos shifts in the composition of project teams. Improved mobile communication may just mean more communication rather than less importance of a common workplace, since knowledge workers seldom spend all their time in one office.

Telenor and Cisco both appear as self-contradictory companies, since they do not practice what they preach. This suggests a worrysome lack of self-reflection and ability to make use of their own experience in the development of new product visions. In fact, one may be tempted to ask how it has been possible that the visions of nomadic work and virtual organisations have remained so attractive that it is a main ingredient in the advertising of ICT for business. However, before one continues that line of reasoning it may be wise to reflect if some of the puzzle is in fact produced by academics that take the marketing buzz too much at face value. Let us return to the incubator cases because they may tell us something more about the practice of combining communal thinking about work with the potential of new ICT and mobile communication.

Raising business in a virtual world?

The business incubator is a recent phenomenon, at least the proliferation of Internet incubators. Business incubation essentially offers shared office services, access to equipment, flexible leases and expandable space — all under one roof. That is the instrumental aspects. Another is the access to relevant networks, the business advice and the social dynamics of several start-ups coming together to share perspectives, and use each other's networks. According to Chinsomboon (2000:40-50), the promise of incubators to start-ups is (1) track-record expertise, (2) brand name that 'carries' the start-up (3) a community-network of contacts and partnerships, (4) infrastructure (plug-and-play office, staff, software), and (5) technology. To venture capitalists and customers, the incubator provides (1) assurance of the 'quality' and 'stability' of the start-up, and (2) access to many firms from one physical source, if desired. Business incubation has grown markedly, both in the US and abroad. From 12 North American programs in 1980, there are about 600 in 1999, according to the National Business Incubation Association.[11]

So, what to make of these growing numbers? Does that necessarily mean that sharing physical space enhances network space and productivity? Decidedly not, the effect of incubators is hard to measure. Halvorsen (2000) found that science park firms actually performed worse, measured by profitability, but had better short-term dept-paying ability. It has to be noted that this was a study of Norwegian science parks, which are larger structures that do not necessarily take equity in their companies. Incubators come in many forms. Some are completely virtual, others are hybrids, or only physical work spaces. Some come out of venture capital firms, others of consultant firms, or from universities. Most of them take equity in return for access to networks and manpower, while there are also 'research parks' or 'innovation houses' (the names proliferate) where A few, like InnoVisionHouse and Awarehouse are created by and for early-stage entrepreneurs. Here, I am going to focus on the work practices incubators specialize in.

That the way incubators think is different from the 'online imperatives' of telecoms is expressed most clearly by Dan at Berkeley Incubator. To him, work is a physical process with 'sweat and tears',

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[11] http://www.nbia.org

but also a networking job 'where I make all the phone calls to get a new firm into customer meetings, venture capitalists, and the right lawyers'. To him, Berkeley is a prime location. Campus is a five minute drive, or 15 minute walk away. Through his local business network, which incidentally is world class, he can access top lawyers, the nation's leading venture capitalists, and quite a few potential customers. However, he has a hard time convincing investors to come from Silicon Valley, only an hour's drive away.

Further evidence of the 'counter'-nomadic trend is Techspace. Not an incubator, strictly speaking, they charge cash for plug-and-play workspace through sub-leases to other companies. As of now, Techspace has six US locations, as well as London and Toronto sites that all house a twentyfold companies. Tenants are called 'members', and get access to venture capital and other services through paying cash fees. Nothing is equity-based, like other incubators.

Working out of Techspace is much like 'being on your own', apart from the availability of resources. Thus, the firms exploit what they feel they need, but do not have to give away equity. The main asset of Techspace is the identity and brand name itself, as well as the socio-cultural, and practical advantages of being positioned somewhere 'safe' and 'harbored'.

Campsix, on the other hand, is located in downtown San Francisco (that is, South of Market street, in the previously mentioned Multimedia Gulch). Their approach is hybrid, both online and physical, but with heavy emphasis on hype and gimmicks. For instance, they obtained wide publicity on their oxygen flasks destined to 'cool off' and 'refreshen' tired employees. The office space is brand new, luxurious, and slick. And, their website features K2, one of the peaks of the Himalaya's stating Campsix is your 'basecamp to reach your high tech peak'. Campsix are high on networking and arrange daily warm lunches and Friday luncheons that become meeting place for city venture capitalists and business network. To co-founder Neil Cohen at Campsix, working is networking: "We've got to make sure that whoever comes to us becomes an evangelist to the highest degree. If we can do that, the rest will be easy".

Palo Alto-based Picostar focused on high tech hardware. Many, I was told, use Picostar as a virtual incubator before they transfer from Europe. A Palo Alto commercial address is worth a lot. Here, branding was 'natural' and visible in the amount of cable, ongoing mechanical manoeuvring, and electronic appliances lying around

everywhere; for instance, the first Spykit containing a laptop, a wireless phone, and microphones produced for the CIA by one of Picostar's inventors. No Campsix company would ever set their feet in Picostar's somewhat muddy, 70s looking aluminium grid of a place, nor would a Picostarian visit Campsix's carpeted floors. On the other hand, Picostar's companies are much closer to the 'cernel' of Silicon Valley than Campsix. To drive here, many investors would need less than 10 minutes.

When I contrasted the incubator Awarehouse with the telecom company Cisco, I used them to represent ideal type differences of thinking between a communal and cyberspace approach to the organisation of work. However, as we observe from the above analysis of other incubators, this juxtaposition of the communal and the cyberspace thinking is quite problematic. These incubators pursue a combination, the communal as well as the cyberspace ideas. They are heavy users of ICT and mobile communication while emphasising the importance of close social encounters to be able to survive in a harsh competitive situation. Arguably, you need a home base to extend efficiently on a more global scale. This points to the possibility that we may need to reconsider the meaning of slogans like nomadic and virtual.

Knowledge work: thinking, pushing, and pitching

Innovative learning mostly occurs in connection with what I call *the knowledge intensive space of places*, or the compound of available sites of knowledge at a given time, space and place, with the possibility of face-to-face interaction and space-making (without going out-of-budget, or out-of-range of everyday knowledge activity). Typically, libraries, bookstores, innovation centres, clusters, or parts of cities provide incentives to create such spaces. For, while knowledge cannot necessarily be stored, as information can, it exists more so as potential knowledge in some places. Knowledge workers, however global in outlook, are bounded in particular places. They are human beings that need attention, care, inspiration and motivation. The possibility of face-to-face interaction is crucial to knowledge creation and successful knowledge work. Face-to-face work is about transforming tacit knowledge. This process is a sort of convincing-work; first pitching the idea to someone, then stirring-up conceptual energy to «freeze» their attention. Knowledge occurs when we

activate a hyperspace around our flow of information. The term hyperspace is used to bypass the passive notion of tacit knowledge, inherited from Polyani, but too passive to convey the practice of today's high tech professionals. They move around information, often using Internet and other advanced communications, but cannot move around knowledge that easily. This is not only because knowledge is tacit or unspoken, but also because knowledge is only relevant if it convinces others. Physical co-presence is therefore important to create the type of intensity in time and space needed for knowledge transfer. But co-presence in itself is not enough. Effective knowledge workers know it. Pitching work – the constant pushing, refining and shortening of messages – is crucial, and will require both online and offline space making.

Knowledge is only a relationship between networks, or between networks and switchers (powerful individuals who stand at the intersection of network flows, and can initiate and stop such flows). Therefore, the creation of powerful social spaces, that is, shared spaces of true interaction (while they might be temporary or ephemeral) is essential to generate knowledge. Many of these spaces, however, are places, too. Or, they are rooted in place-bound practices. Even most so-called virtual encounters take place with the two separate places in mind. The time for a reaction against visionary talk about Internet as the total solution is way overdue. Both research and practice so far show that virtual teams need to build a relationship by face-to-face encounters *before* they can collaborate effectively (McDermott, 1999:104), and often need to reinforce this relationship *during* knowledge work processes (Riain, 2000), as well as *after* such processes are over. The Net is not enough!

Some work practices are still not completely virtually enabled. Those are, for instance: (1) market presence and proximity to switchers, (2) creative stimuli from an urban work setting, (3) sustained stimuli from competitors. First, market presence can never be completely mediated, even though some products sell online. Also, switchers tend to be close to these markets, or in hubs that mediate between markets (Castells, 1996), and not all of this can go through the Internet, even though Cisco breaks new ground here. Second, the urban work settings seen in cities like San Francisco, where Awarehouse operates, or even intimate Trondheim, where InnoVisionHouse is situated, provide extrinsic motivation by ways of coffée houses, pubs, and walking distance meeting places. In fact, the

sustained effort made possible through presence, generally, enables the knowledge worker to always try again, insist, and return to his fellow knowledge workers, competitors, or investors, and enjoy serendipitous encounters. The urban complexity facilitates foreign, multicultural, and diverse encounters. With Cisco, caught in its own Cisco village in the meadows outside San Jose, those options do not exist. Workers are condemned to themselves, alike in socio-economic status, and supposedly with matching interests. However, while diversity is also found within, the effervescence of 'place' as a symbolic and as a *de facto* motivator must be reckoned with.

Due to the intensity of knowledges, cultural institutions of flow, and diversity of people, cities like San Francisco become havens of peripheral expression. Sometimes knowledge of the periphery is much more available in the center itself because of the way peripheral knowledge is organized and analysed (Hannerz, 1992:222). Innovative work, knowledge work, whatever you want to call it, mostly occurs in knowledge intensive space-places, or in connection with them, and the creative individuals who participate to sustain them thrive in such environments, and equally benefit from being on the borders of such environments.

Conclusion

Through our analysis of Cisco, Telenor, Awarehouse, and several incubators, we have argued that the Internet might not be the only space to centre our knowledge making efforts around. There are certain things the Net can't do. Among them is the institution of a collective, binding social order that we call a knowledge intensive encounter space, or even better, an arena for place-making. Without this continued, often physical, place-bound presence, knowledge work becomes a dispersed activity unable to hold together epistemic units worthy of the label knowledge. In particular, this goes for the type of knowledge that provides the backbone of most innovation, new product development and new venturing among high tech workers.

Rather than seeing the influx of ICT in the workplace as an occasion for a complete turn to virtual work practices, many companies now are coming to terms with the fact that ICT does not reduce the amount of coordination, encounters, and knowledge work needed. While the nomadic opportunity with mobile Internet is a

necessary and valuable asset of post 1990s high tech organizations, the attachment to the workplace and its immediate environment will prevail.

With this focus, we stress continuity, rather than change, and give Storper and Walker (1989) and Wenger (1998) more right than Castells (1996) and Wellman (1999). Actually, although virtualizing, pitching and pushing becomes part of knowledge work, the day the office were totally abolished would be a sad day for knowledge, creativity and thinking. Luckily, the office, or some office-like site tends to reintroduce itself. Even business consultants, whose paperless, nomadic behavior we have seen for years, have a plug to come back to, and even more important - a customer site to go to in which s/he spends face-to-face and face-to-desk-time.

We conclude that while (a) cyberspace is a relevant arena for knowledge and communities of practice, (b) cyberspace is not enough, and (c) knowledge work increasingly occurs in a 'hyperspace' of intensified space and place relations. Networks are not enough. They must be interpreted, acted upon, and 'stirred-up', as it were, before they are active. So-called 'virtual organizations' (Davidow and Malone, 1992) are more imaginary, than real.

The study indicates that it is dangerous to begin with Information- and Communication Technology (ICT) when discussing the knowledge workplace. There are many other issues to be resolved, as well, such as worker motivation, knowledge practices, and the interplay between technology and communication. By extension, the ICT-driven idea of nomadic knowledge production is not tailored to all knowledge workpractices. Thus, although telecom wants us to live in a 'wireless society', there still seems to be strings attached.

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5. Space over Place

Situated high tech practices in Silicon Valley

Abstract

Through an analysis of the situated work practices in Silicon Valley's New Economy between 1999 and 2000, the author points out how sociologists of globalisation (Beck, 2000; Castells, 1996) underscore the importance of Silicon Valley as a physical setting. In other words, networks based on physical proximity have a quality so far unmatched by networks based on technological mediation (especially Internet-based). This argument draws on sociologists of place who all explore how settings and situated practices shape social action. The empirical material, obtained through a one year fieldwork in Silicon Valley and its environs, supports the thesis that innovation cannot be de-coupled from the physical setting in which it occurs. Dismantling the possibility of disembodied, nomadic knowledge production, a theory of *place making* in social networks emerges, where knowledge work more aptly is described as *convincing work* where meaning, as well as possible markets are established.

Introduction

In the *New Rules for the New Economy,* a Business Week best seller from 1998, former Wired editor Kevin Kelly writes:

> ”This new economy has three distinguishing characteristics. It is global. It favours intangible things – ideas, information, and relationships. And it is intensely interlinked. These three attributes produce a new type of marketplace and society, one that is rooted in ubiquitous electronic networks” (p.2)…”the future of technology is networks. Networks large, deep, and wide” (p.160)…"Rule number 7: ”From places to spaces…physical proximity (place) is replaced by multiple interactions with anything, anytime, anywhere (space)” (Kelly, 1998: 2, 160-161).

The New Economy’s visible presence in Silicon Valley, and adjacent areas, seems to be a contradiction in terms. When place is replaced by space, why is there still such a physical concentration of innovation activities? Precisely for this reason, Silicon Valley provides excellent opportunities to explore the thesis that powerful places are not so important anymore, that the globalising forces of the New Economy pushes disembodied knowledge, through networks that travel freely between places. This article confronts such views through a study of high tech practices.

Currently, sociologists of globalisation (Beck, 2000; Castells, 1996; Giddens, 1991; Lash & Urry, 1994) argue that we are currently witnessing a social shift from a place-based to a space-based logic of production due to the increasing mobility of people, information, knowledge, and capital. This process, they say, will shrink the local, *territorial* organization of practices, connect global elites onto common networks, and will in the end create 'ubiquitous social space'. The process, we are led to believe, is driven by the globally pervasive use of Internet and other networking technologies.

The New Economy makes use of knowledge workers, people whose work consists of reading, researching, analysing, and presenting information (Drücker, 1993; Frenkel et al, 1999; Nonaka & Takeuchi, 1995; Reich, 1994; Tolmie, 1999, Warre & Degoey, 1998). In Drücker's original conception from 1960, knowledge workers 'know how to allocate knowledge to productive use just as the capitalists

knew how to allocate capital to productive use'. Moreover, they 'own their own knowledge and can take it with them wherever they go' (Drücker, 1993). The latter point is important to keep in mind, because it has set the tone for management literature on the topic. But while the shift from disembodied to embodied production is a correct observation, the conclusion that workers can be readily moved, can access knowledge wherever, and can freely move around with their knowledge, does not immediately follow. The argument needs to be assessed.

Place versus hyperspace in the New Economy

According to the paradigm of ubiquitous social space prevalent in current social theory (Beck, 2000; Castells, 1996), knowledge workers now benefit from the Internet to such a degree that they can work comfortably beyond the limits of time and place. Trying to operationalize Castells (1996) I now move to the following claim: if Silicon Valley knowledge workers conform to this expectation, they should be less concerned with where they work, both in terms of the location of their company (urban, suburban, or peripheral) and in terms of their immediate workplace. The Internet provides virtual work and co-ordination tools that actually *enhance* knowledge work by access to more updated, globally gathered information, and through one-to-many interaction (email, GroupWare, videoconferencing). Their work practice should then occur mainly online, which means workers can be anywhere with an Internet connection. As a result of networks and spaces of flows they should favour and practice disembodied, *nomadic* knowledge production.

In the contrary perspective, which I will call the sociology of place, both location and workplace are *settings.* That is, they imply, but do not determine, specific social practices, and they delimit possible ways of relating to the physical environment (Tolmie, 1999). One obvious situation is the face-to-face encounter, whether planned, as a 'meeting', or unplanned as a casual 'coffee machine' coincidence. Sociologists of place do not believe work can be completely virtualised, and they believe even global work must have locally organized production. However, whereas proximity relations enable a complexity of impressions, stimuli, or disturbances, it does not necessarily lead to interaction productive to the knowledge creating company.

I want to explore the validity of two diverging hypotheses. The first thesis is that work is de-coupled from place, and the second is that work is still dependent on and characterized by place-specific practices, with an open mind to the possibility that they represent end points of a continuum of practices rather than an either-or. To clarify the issue, I will first look at how current social theory portrays the development of Silicon Valley, before I describe situated innovation practices more generally through the works of Sassen (1994), Wenger (1998), and Sennet (1998).

While a lot has been written about Silicon Valley (Borsook, 2000; Hiltzik, 1999; Kaplan, 1999; Kelly, 1998; Kenney, 2001; Lewis, 2000; Miller et al, 2001; Stross, 2000), Saxenian (1994), and Castells (1996) provide the most sophisticated sociological accounts. Manuel Castells (1996:423) defines place as ”a locale whose form, function and meaning are self-contained within the boundaries of physical contiguity”. In his framework this means place is locked into local considerations and held together by a closely-knit culture.

Castells' opus magnum on the Network society argues that ”spatial proximity is a necessary condition for the existence of such milieux [of innovation]” (Castells, 1996:390), and ”social networks...[ensured] the communication of ideas, the circulation of labour, and the cross-fertilization of technological innovation and business entrepreneurialism”. In his later works, however, the integrity of a place is questioned. His approach has turned completely structuralist, and the space of flows rules the terrain. Thus, his real agenda is the following:

> ”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. Flows are not just one element of the social organization: they are the expression of processes *dominating* our economic, political, and symbolic life” (Castells, 1996:412).

The space of flows consists of three material layers: a circuit of electronic impulses (Internet), nodes and hubs (Silicon Valley), and the spatial organisation of the dominant, managerial elite continually unifying its symbolic environments (VIP lounges etc).

While space is the logic of high tech, Castells still admits, ”the space of flows is made up of personal micro-networks that project

their interests in functional macro-networks throughout the global set of interactions in the space of flows" (p.416). These macro networks are, to Castells, what really matters. In a more recent examination of the issue, Castells (2000:12) states: "The work process is interconnected between firms, regions, and countries, in a stepped up spatial division of labour, in which networks of locations are more important than the hierarchy of places". The space of flows, then, refers to the "technological and organizational possibility of organizing the simultaneity of social practices without geographical contiguity" (Castells 2000:14).

In contrast to Castells, Annalee Saxenian (1994) explains Silicon Valley's regional advantage by the close relationship between Stanford University and the local culture. Stanford was, and is, far more deeply integrated into regional surroundings than MIT, the comparable university in the Boston area. Stanford promotes collaborative relationships between small firms, and MIT orients itself towards Washington.

The term Silicon Valley refers to what journalist Don Hoefler in 1971 observed as a tightly knit semiconductor community. "They eat at the same restaurants, drink at the same bars, and go to the same parties. Despite their fierce competition during business hours, away from the office they remain the greatest friends" (Saxenian, 1994:32, quoting Hoefler).

"This is a culture in which people talk to their competitors" (Saxenian, 1994:33). In addition, moving from job to job is seen as ok. In such an environment there is the shared understanding that everyone could be an entrepreneur, which is even reflected in the physical office and lab facilities. There is impermanence in the air, and in the buildings, around the facilities – they are ready to change (Saxenian, 1994:5). To Saxenian, Silicon Valley was built by people who disagreed about the way business was done on the East coast and who were motivated by creating something new, not by stimulating status quo. In addition, she points out the pragmatic element: "when things are right down the street, decisions get made quickly", and "the most strategic relationships are often local because of the importance of timeliness and face-to-face communication for rapid product development" (p.5). Another place she states: "Geographic proximity promotes the repeated interaction and mutual trust needed to sustain collaboration" (p.161).

However, the geography of innovation is a highly contested issue. Sassen (1994:1) writes ironically: "Globalization of economic activity suggests that place - particularly the type of place represented by cities - no longer matters"…"but alongside the well-documented spatial dispersal of economic activities, new forms of territorial centralization of top-level management and control operations have appeared. National and global markets, as well as globally integrated operations, require central places where the work of globalisation gets done. Furthermore, information industries require a vast physical infrastructure containing strategic nodes with a hyper concentration of facilities.

Sassen claims risk-laden, speculative activities such as security trading are better performed within a dense 'financial district':

> "It is the nature of these activities - the large amounts of capital, the complexity, the risk, and the multiplicity of firms involved in each transaction - that also contributes to the high density"…[…]…"the financial district offers multiple possibilities for face-to-face contact: breakfast meetings, lunches, inter- and intrafirm meeting, cocktail parties, and most recently, health clubs. These are all opportunities for regularly meeting with many of the crucial individuals, for developing trust"…"telecommunications cannot replace these networks beyond the possibility of acting on new information obtained in a face-to-face encounter" (Sassen, 1994:85).

In short, to Sassen, the prevalence of 'financial districts' in the geography of advanced cities has organizational reasons. Her quest to understand how knowledge communities organize themselves is shared by Wenger (1998). In Wenger's (1998) account, knowledge work occurs in and around 'communities of practice' that arise when locations, organizations, and individuals 'want to be exposed' to each other. These communities have a 'geography of practice' defined by relations of locality, proximity, and distance 'which are not necessarily congruent with physical proximity', says Wenger (1998:130). Thus, it is not true that globalisation necessarily leads to the destruction of community. Rather, different constellations of participation always coexist and shape each other. However, while you can *participate* in the global, you cannot *engage* with it. You can

only engage with your own community of practice and a few other people (Wenger, 1998:131).

Wengers' analysis is sharp because it allows us to dismantle much of the hype about nomadic knowledge production, at the same time it does not deny virtually enabled work altogether. In fact, as Wenger claims, technology involves trade-offs. You now have to choose whether to use statistics, or use participant observation, or use email and videoconferencing instead of flying in. GroupWare, for instance, can be a powerful boundary object (Leigh Star, 1989), enabling you to configure, organize, and interconnect your virtual work team. But you have to know what you are gaining and loosing by each trade-off. Not only does the scope change, or the content cause different interpretation of the same phenomena. Actually, there might be different *types* of knowledge created based on what process you choose to obtain it:.

> "[…] changing the scope of our engagement is not so much expanding its range as it is a series of trade-offs between forms of complexity", and, "focusing on the level of communities of practice is not to glorify the local, but to see these processes - negotiation of meaning, learning, the development of practices, and the formation of identities and social configurations - as involving complex interactions between the local and the global" (Wenger, 1998:132-133).

Wenger (1998) pokes fun at communitarian fears of the 'death of community' (Etzioni, 1994; Putnam, 2000). But rather than dismissing these claims, I shall consider Sennet's urban communitarianism because of its sensitivity the interplay of morals, places, and communication. In *The Corrosion of Character*, Sennet (1998) warns of the corrosive effects of a nomadic attitude to life, a life where moral value has no place. He has observed New York media people network, socialise and transfer the latest "buzz" both day and night. He calls their virtue "portable social skills", and states that this is alarming. Sennet, however, makes no secret about the importance of place in his argument. In one sense he, is concerned that place, which has great moral value, is disappearing.

In Sennet (1998), work increasingly occurs everywhere (when in a metropolis like New York) but certainly not anywhere (outside the urban 'buzz'). The locations where "buzz" occurs are few, and change constantly. The imperative is you have to be there. With this, Sennet

(1998) seems to argue that the shift from place to space is a process that will take longer time than Castells (1996) envisions and maybe even meet with strict cultural constraints.

There are also those who claim place is more important in globalisation. Tolmie et al. (1999) show that the virtual claims are by no means settled. In their ethnomethodological study of the work of middle managers in a major UK retail bank, they found that managers favour face-to-face-interaction to update them, instruct them, or advice them (Tolmie et al, 1999:4). This indicates that an activity like monitoring is incidental to other activities and cannot be planned. The kinds of competencies performed in co-present indication rely upon social, interactional items such as how to tell a story, how to get attention, how to handle topic changes in a conversation etc. The shared relevance produced by such co-present behaviour is hard to reproduce virtually, and most likely will remain so. Thus, it is important to remember that the case study from Silicon Valley involves even more knowledge intensive endeavours than managerial and customer work. Here, what is at stake is also the type of knowledge work practice that involves establishing a vision, a team and a board of advisors, in short, a start-up team where shared meanings are established *for the first time*.

The interaction of physical artefacts (climate, local scenery, vineyards or redwoods) and cultural artefacts is what constitutes the phenomenology of place (Berger & Luckmann, 1966; Czikzentmihalyi, 1990; van Dijk, 1991; Harvey 1989, Shapin, 1998). A place, though, is a potential, but not a given. Human action consists of turning an encounter-space into a meeting-place, finding and building relationships.

We have thus far seen that social theory is ambivalent towards exactly how Silicon Valley should be understood as a knowledge community. Basically, there seems to be three main assumptions:

Knowledge work occurs as 'space of flows', and place has lost its importance because Internetted networks of information are much more powerful through their access to vast amounts of information, people, and other knowledge resources (Castells, 1996).

Knowledge work is still 'place bound' because of the important local ties companies start out with, maintain, and continually develop with its suppliers (Saxenian, 1994), with the overall infrastructure (Sassen, 1994), in the community of practice (Wenger, 1998) and among the social relationships of its workers (Sennet, 1998).

The 'setting', or location of knowledge work is more important than before, because you know to a large degree get to choose where you want to put in your 'face time'. You will always choose the most important place first, and mediate your presence to other places (Berger & Luckmann, 1966; Czikzentmihalyi, 1990; van Dijk, 1991; Harvey, 1989; Shapin, 1998; Tolmie, 1999).

We shall now explore these assumptions.

Fieldwork

How may we study whether New Economy practices are completely networked, virtualised or better understood as situated somewhere in a particular spatio-temporal ordering of production? This paper has chosen to approach the matter at hand by analysing one significant setting believed to be a 'critical case' for our hypothesis. The case chosen is, as previously noted, Silicon Valley and its environs. I thought that if the phenomena of 'ubiquitous social space' did not show up there, the empirical validity of current sociology of globalisation (Castells, 1996, Beck, 2000) is questionable. Instead of focusing on global information flows like Castells (1996), on global cities like Sassen (1994), or neatly comparing two innovative regions, like Saxenian (1994), I study the place-making between several different, but related, communities of practice (Wenger, 1998). I have chosen case studies that all come from cities around Silicon Valley in order to focus on the *convincing work* that goes on when people at the rim try to 'get inside' to benefit from the catalyst of high tech (venture capital, experience, technology). In other words, I chose to take part in the *place making* of Silicon Valleyans, to define, explore, and hopefully explain the impact of social networks as embodied practices, rather than compare structural features.

As Wenger (1998: 132) states, research is a trade-off between different types of complexity. I felt the sociology of globalisation might be insensitive to the advocacy, meaning, and social practices inherent in knowledge production. Therefore, to observe the inside of the Californian knowledge worker culture, I used ethnographic methods like participant observation (taking classes in entrepreneurship, going to one-day courses for start-ups, fairs, exhibitions etc.). I also did interviews with start-ups, venture capitalists, dot.coms, and Human Resource Managers. A major rule

for all my work was to focus on things that only could be accomplished on site (not virtually, or from Europe). Thus I spent a lot of time "hanging out" in and around knowledge intensive environments. Apart from the interviews I made company visits both formally and informally, and I talked to workers also outside of the 'regular work context', a distinction I came to believe had no real meaning. I also took courses at Berkeley, talked to top faculty and students, and used the impressive library. The Berkeley environment is an integral part of what "growing up digital" means in Silicon Valley and has a profound impact on the 'possible impressions' that give rise to entrepreneurial and academic aspirations. Here, I am indebted to the way Bourdieu (1996) understands the production of habitus as both 'structuring' and 'structured' practices.

Fieldwork to me meant to "feel the culture", to go out and socialise with knowledge workers, to approach venture capitalists, even to 'work' in Silicon Valley (I did some sporadic management consulting for a major hardware company). In short, I tried to gain a totality of impressions from California: weather, networks, information flows, tech updates, nature, scenery, car culture, work settings, and social life. One fascinating arena was 'dot-com parties' and mixers, a recent phenomena from San Francisco where the young, single, urban part of the New Economy labour force get together for free beer, a snack, and some weekday networking.

The data was collected in 1999-2000 during my stay as research associate at University of California, Berkeley. The companies I studied in more detail were The Design Company, Guru.com, Armada Global, Futureperf, Postcommunications, Scanaccellerator, Razorfish, Cisco, Berkeley Incubator, 3220 Sacramento Street, Formfactor, Campsix, Picostar, Santa Clara Software Business Incubator, Industry Standard, McKenna Group, IBI, and It's-quick. Most of these are New Economy type companies (incubators, Internet start-ups, consultant firms, or software firms). Some were purposely targeted; others were recruited by snowball sample, or directly via my Berkeley affiliation. Qualitative data from these companies was collected through interviews with key personnel, workplace fieldtrips, and participant observation. In addition I interviewed five venture capitalists and one angel investor (individual investors, who often are former entrepreneurs who invest "for fun"). In addition, I have met with a large number of software programmers, engineers,

entrepreneurs and commentators on a more informal basis throughout the year.

In the following I will present my findings in two ways. First, I will provide a more general account of characteristics of work in the Silicon Valley and its environments. Second, I will look in greater detail at three examples related to three different persons. They have been chosen to highlight the practical, material, and social considerations that play a large part in knowledge-creating collectives. The choice of these, and not other parts of my field notes, is purely strategic in nature. I do not claim those stories represents Silicon Valley in any comprehensive way. Other studies will go more in detail on work content, be more thorough on the structure of organised work, or take a systematic approach and try to synthesise. On the other hand, I have picked stories that allow us to see issues around knowledge workers that are seldom explored. The strength of my approach lies in describing knowledge and work ethnographically. Not with the interest of discovering 'culture' as such, but rather with capturing the *situated* character of innovation and show the interplay of places and spaces.

Clearly, there are important limitations to my material, in the extent of the fieldwork as well as in the choice of companies and people to investigate. However, I believe that there is sufficient breath and scope in the data to allow for a critical investigation of the meaning of space versus place.

Silicon Valley Work

Silicon Valley knowledge workers are both immersed in 'their own thing' and at the same time globally oriented. If sociologists of globalisation (Beck, 2000; Castells, 1996) are right, knowledge workers are mediated, networked, and disembodied. Indeed, Saxenian (1999) in her latest study claim immigrant entrepreneurs, in a sense, 'uphold' Silicon Valley through their networks to foreign markets. Business is conducted globally and capital markets are everywhere your network goes. As Phil of the McKenna group states: "what the Internet has done to business is amazing. We now accomplish tasks faster, more systematic, and have greater transparency". All major companies use the Internet, the growth of content on the Internet is astounding, the amount of users, program, and virtual work tools are rising, and email obviously is a *killer*

application both for work and socialising. In San Francisco, the Craigslist web pages is *the* way to discover, discuss, or complain about parties for the young dot-com workers, as well as a good way to find work listings. Indeed, it would seem like "the flows of messages and images between networks constitute the basic thread of our social structure" (Castells, 1996:477).

Every morning the Silicon Valley worker logs on to the company Intranet, checks his email accounts, checks headlines on the major online newspapers, and sends an email to the manager saying he is online. From this time on, ironically, time and place cease to exist. Online reality has begun, a continuous process of events only ends when the computer is turned off, or the doors closed and the worker is back in his bed. The virtual impressions overwhelms every knowledge worker to the extent that there is nothing outside the corporate network if he works in a large firm, or outside the entrepreneurial reality if he works for a start-up.

Ray, a former sales manager with Cisco says the network work style means that: "instead of face-time, we have email-time. I did not always have to go in to work in the morning, but I had to check in anyway. I sent an email every morning at 8AM so the boss would see I was working. He could also monitor all that I did through our Intranet". Or, as Mike, an entrepreneur from Berkeley explains: "My life consists of nothing but work, contacts, networking, meetings, and a lot of my time is spent online. I send out hundreds of emails every day". His life consists in furthering the world of global high tech, which incidentally has become the world of everyone in Silicon Valley, from dot-com children to homeless people competing for people's attention with low-tech means, but technological pace. A knowledge worker's job is to make sure that Silicon Valley continues, that the industry blossoms, and that his firm is at the forefront of global technological discovery.

The Silicon Valley worker spends his time, energy and effort in a constant interplay of spaces, mostly Internet-enabled. In fact, his time is lived through the screen (Turkle, 1994). Sarah, a manager at Cisco Systems states: "We are doing everything by the Internet. Our current, up-to-date, cutting edge training is done online in the field. That is amazing and unparalleled. We do everything online" (from interview, Spring 2000). The Internet is where she plans her meetings, gets instructions, sends out initiatives, organises meetings, and collaboratates. She is entangled in technology to the extent that she

herself becomes immersed in the whole machinery that constitutes the network of events in Silicon Valley. The Silicon Valley worker is a face-to-screen cyborg, a fusion between woman and machine (Haraway, 1991).

The Cisco experience is shared throughout Silicon Valley. Knowledge workers are enrolled in a practice of technological rejoicing. It happens through social gatherings, through invoices, and through the social imaginary of Silicon Valley itself. You are supposed to care about technology. It feels natural. After all, it is your life, and most people's life in Northern California. Neil, an executive at the Incubator Campsix in San Francisco says it this way: "We've got to make sure that whoever comes to us becomes an evangelist to the highest degree. If we can do that, the rest will be easy".

The Californian social reality is already saturated with technology. There is no need to be ashamed of doing work related things off work. In a way you are never off work. A Californian family I lived with discussed stock quotes for dinner. They ate to the sound of CNN, used Fortune magazine as toilet paper, and continually mused about the strength of American technology. For them it was the most natural things there is. The issue has entered the tissue of society.

On the surface, such observations of a technology empowered workplace reality supports the claims of globalisation sociologists about the increasing importance of space of flows. But does this impression stand up to closer scrutiny?

Exploring place making and convincing work

In the following, I will explore three cases related to the work practices of three different persons, in order to look in greater detail at the way they work. All three are knowledge workers, but they perform different aspects of such activities.

The case of Robert: Building a corridor to Silicon Valley

Robert Lattimore is President of Contra Costa Software Business Incubator in Concord, California. With background from venture capital (VC) he helps an average of 21 firms who at any time are located in his incubator with strategy, financing and building a business culture. He is, according to himself, a ”heavy lifter”.

”There are some basic rules of the road [referring to Sand Hill Road, the road most firms have office]. There are heavy lifters and light lifters. The heavy lifters want to build companies; they want to be part of the whole process, from strategy to building a team and a business culture. This is the traditional Silicon Valley model. There’s the sense that you have to have companies you can get to. Just get in the car and be there before lunchtime. The light lifters are the typical Wall Street guys. They just put in their money and let the spreadsheets do their job. They take no interest in the company as such”.

Robert is fully aware of how locally situated Silicon Valley innovation is, for all its global pretension. Concord is a city about 65 miles from Sand Hill Road in Palo Alto, home of the big and strong venture capital firms. Venture capitalists rule the scene. They dictate the way people talk to each other. VCs are nowadays the only visible group that sets the Valley apart from other innovative environments. No other region has so much capital and so many experienced investors on such a small place.

”Convincing them to get in the car and drive up to Concord is not easy. They just want to stay where they are. Most VCs have a limit of 50 miles distance to the firm they invest in”

The 50 miles limit reoccurs in most of my interviews with venture capitalists. Given the traffic in the area, 50 miles is the threshold for lunch appointments, and for what would 'disrupt' the order of their everyday activities, their 'paramount reality' (Berger & Luckmann, 1966).

Nowadays, venture capitalists work in teams where each of them has different sets of skills. "One might be a software guru, another a communications specialist, a third a networker who loves to go to cocktail parties and who knows all VCs in the Valley", according to Faruq Ahmad, venture capitalist at Charter Ventures Capital in Palo Alto. "Most VCs are not financial experts, he says, "and softer skills are becoming more important". The most important skill is to be able to build a team through tough times, although he admits: "ideally I want to visit the company, drink and give away smiles".

Concord, California is outside of Silicon Valley by about one bridge and 40 miles. Until the early 1990s there was only apple trees

and peaches out there, but now the urban development has come a long way. Real estate is exploding, and everyone is acquiring property to be ahead of time, waiting for the boom to come, also out here. According to Robert Lattimore, there's an East Bay corridor in the making; an area adjacent to Silicon Valley where a gentler, more pleasant environment gives room to a different approach to business.

> "[The East Bay] gives space to build a company culture without the pressure of the Valley model. But on the other hand, gatekeepers control destiny. The three-M's as I call them; money, management and markets all have their gatekeepers. Because of the 50 miles Venture line the East Bay corridor is clearly a disadvantage for money. But for angel investors the scene is a bit different. The "925 investors" [925 is the area code to most of the East Bay] are more experienced and more willing to put in the time to grow companies than before. For pre-seed and seed stage funding they are ok for most start-up companies. They often have links into major Venture guys, so that the next phase of funding happens" (Robert Lattimore).

Being at the border of Silicon Valley is sometimes a challenge: "Finding enough senior managers is a problem everywhere, but has almost become a competitive advantage out here, as more experienced older entrepreneurs are moving out here to live. But this is only recently. As for markets, it's almost impossible to grow a global company in the East Bay yet. There's not enough big companies around that lead the way, that drive the networks necessary for a global presence". Clearly, Lattimore is sensitive to the power of place, having worked for IBM as well as for a venture firm in Silicon Valley in previous jobs. To him the challenge becomes to exploit the advantages a Concord location can give.

Lattimore's story highlights that growing companies is a continuous, situated effort, more so than globalisation sociologists allow. Moreover, it seems that venture capitalists set the Valley apart because of their close community of practice (Brown & Duguid, 2001, Wenger, 1998), not because of their skills in communicating through new technologies. In addition, we see how practical considerations matter. For instance, traffic is a major concern, and most people do not want their workday disrupted. Such banal factors are also

shaping the performance of work and the choice of place from which to do it.

The case of Dan: "Running Berkeley business like a sweatshop"

Incubator inc. in Berkeley is a small building not very far from the university campus. The boss, Dan Worley, has close relations with university graduates, and knows a lot of venture capitalists. Dan has spent a lot of time at Berkeley University. A graduate of Haas School of Business at Berkeley, he says professors now pass him most of his deal-flow. His relations are mostly to the Computer and Information Science and Business departments. Dan enjoys working with students, spends a lot of time speaking at student events, in fact when I spoke with him, he had just been on campus to give a lecture a week ago. About 10% of his profits are donated back to the university. Dan works with four new teams every year, has an average of 7 deals a year, while the average company stays 6 months. ”My place is like an old sweat gym”, he says, ”It consists of very much day-to-day work”. And what does he do? He gives every-day attention to his companies, takes care of the space, handles some of the customer relations, and looks for ”bridge” financing. ”We [incubators] are a funnel for VCs. The angels [angel investors] do it to spread risk”, Worley says.

One of Dan’s companies is GetOutdoors.com, a portal for bicycles, boats and other outdoor products. The young entrepreneurs wanted to finance their venture with banner advertising, and direct retail. Since they came, Dan has suggested several strategic changes to their business concept. Now they are more like ”the CNET of the outdoors” [CNET is the major portal for technology products, with the proud proclamation: "the source of computers and technology"]. GetOutdoors.com now has "everything needed to go outdoors", and a completely refurbished business model. They no longer aim to take on the whole logistic processes of existing retailers but to act more as a middleman. Dan's insider knowledge in high tech proves crucial to young entrepreneurs right out of University. His contacts and close touch with the market helps them to build momentum and take part in Silicon Valley place making.

Watching for strategic change on a day-to-day basis is part of the job. It means to take care of whatever the business needs at the time, whether small or large things. Dan has good relations with

Berkeley lawyers. ”A lawyer is a gateway to investors and all sorts of clients”, he explains. In fact, so important are these relations that you cannot be without them. You have to be part of the buzz, ”always be out there, and attend plenty of forums". For example, you can join the Fast Company of friends [a social club for magazine readers].

Dan Worley provides a service that is place-bound. He spends most of his time on the phone trying to get venture capitalists interested in his companies, in meeting with these venture guys, or in strategy sessions with his companies. He would not dream of doing this elsewhere. This is where he knows his way around. This is where he has his contacts (lawyers, investors, and advisors). Berkeley is his playground, his little place in the New Economy. It is a niche few can beat right now. Berkeley is small. You can get to most parts of the town without entering one of the many highways that penetrate the outskirts of the city. The proximity combined with a complex cultural environment of 'shared understanding' dating back to the 1960s, provides the emotional glue, but work practices are also situated in pragmatic decisions about efficiency.

To Dan, place definitely has not lost its relevance. Rather, place intensifies market relations that are crucial to the survival of a business. Part of the reason, is that the Silicon Valley environs, has a density of suppliers unmatched by other regions, part of it is the 'stimuli' given by the surrounding support for business thinking. His life is entirely entangled in business, and there is no time for other concerns. The moral corrosion Sennet (1998) is afraid of lies in a loosening of social ties among the workers. Dan's incubator seems close-knit and is built on community values from the local Berkeley environment. While Dan's business uses the New Economy and Castells 'spaces' for business, he has chosen *location* as a niche. Dan's story shows what Sassen (1994) argued about financial districts - they are place-bound because of the fragile processes of creating trust. And, I will add, because *convincing work* needs face-to-face contact to make sense of face-to-screen investments.

The case of Stacey: "The Rooftop culture of San Francisco”

Stacey Foreman is chief of staff at *The Industry Standard*, a newsmagazine of the Internet economy founded in 1998 by former Wired editor John Battelle. The magazine attempts to provide the cultural glue to the technology industry. As Stacy Foreman says, ”we

are not tied to a certain technology, if the industry changes, we change". The Standard has in a short time established itself as the most serious Internet watchdog, both online (www.thestandard.com) and offline through the weekly 244-page magazine *The Industry Standard*. Typical for the New Economy in San Francisco is that lifestyle is part of the work-place mindset. Companies are supposed to be "fun", they allow employees to be relaxed again, after stress at home, maybe a little careless sometimes, and try to make their workers "liberated" and excited.

> "I'm passionate about the culture we've created. We have a chef onsite, we do kayaking with staff, we throw parties, and we have a masseuse and a free Monday morning breakfast. It's been exciting to see this grow from 3 to 360 on staff in only two and a half years" (Stacey)

Typical of an Internet company, they try to create an active and pulsating atmosphere around work. This is work inspired by passion and ignited by the influx of young workers, many in their early twenties. In fact, available statistics from 2000 show around 40 000 San Franciscans are employed in the digital economy, and around the same number commute to the city every day to take part in the show. But even given this input, *The Industry Standard* is extreme. Their focus on building an Internet culture is striking and really evident in the phenomenon called Rooftop party, the 'coolest' networking event for Internet insiders in San Francisco, according to our sources at the party:

> "When we started our rooftop parties in 1998, it was to celebrate each new issue, and the party was a perk to our staff. It was a weekly hangout, an after-week happy hour. I recall our first Rooftop on April 27th 1998 we had 40 staff that each brought six invites that they thought were "right" for this event. It was an immediate success. Soon advertisers started calling and said, "I have to sponsor your party". Now people are calling me every day saying how can I get on the list? There are lines outside our doors, I have a database of invites, and we have 40 parties a year and 4-8 large offsite parties with 1000 people."

The New Economy is 'Internet-party-buzz-culture' at its most intense. Internet becomes a tool to organize local encounters.

Through Craigslist (www.craigslist.com) or SF girl (www.sfgirl.com), the young crowd of dot-comers can browse through the latest party buzz, or comment on last week's parties. These parties range from small invite-only gigs, to large raves, but never change their fundamental ingredients – free drinks and free networking.

Stacey Foreman is at the epicentre of the dot-com phenomenon. Her Rooftop parties are the most popular networking events in the city of San Francisco. This is not something you can take part in virtually; you have got to be there. I went, I saw, I was amazed. At first, I was shocked by the very casual nature of the party. Then by the discovery that ”networking” occurred naturally, it was not forced. It had entered their 'character' (Sennet, 1998), I am sure. The kind of conversations I overheard was casually interwoven interchanges of flirt, flings and technological frenzy. A lot of technical knowledge was assumed, even among strangers. A film director I met said: "I was convinced to come by my friend who works for an Internet company, but I almost did not come, because I thought I would be the only non dot-com here". And she was right. The outsiders were not there, but 1200 other young, urban, hip ones did not mind As Sonya Prubotok of Campsix complains, or merely explains, I am not quite sure: "It is hard to find friends who don't work in Dotcoms. We all do right now". Well, from a city of 1 million people this is hard to believe. Rather we have to conclude this is a close-knit cultural environment that does not 'see' the outside world.

The 'Rooftop culture' has emerged because the knowledge workers of the Internet economy now reach a critical mass. They are visible in a city otherwise known for its gay and lesbian presence, artistic endeavours, and a thriving cultural intelligentsia. In short, they use the power of place to their own advantage, taking hold on the urban presence.

The 'Internet generation' seems to mix socializing with business to the degree that the boundary ceases to exist. There is no outside of their *situated practices*, their enthusiasm and embodied pursuits towards knowledge, technology, and community. San Francisco becomes a tacit, situated place, so different from Sennet's (1998) New York, yet urban still. The Internet is domesticated. Saxenian's 'co-operative cooperation' has become 'socializing' activities. The 'setting' (the Rooftop) is crucial in enabling *place making* encounters.

The meaning of place in the New Economy

The New Economy of San Francisco, Concord, and Berkeley shows that when physical processes are Internetted, their practical, material, and social constituency becomes apparent. Castells 'spaces of flows' can explain the globalizing trend in 'grown up' Internet firms and their flirt with disembodied, nomadic knowledge production through Groupware, email and database technology. However, studies that focalise proximity (Sennet, 1998, Sassen, 1994; Wenger, 1998), as well as our own fieldwork, suggest the impermeability of the 'setting' in which knowledge work occurs.

Characteristic for Silicon Valley is pragmatic, quick decisions about capital investments with huge impact on the lives of many (Sassen, 1994). But for this to happen, a lot of work has been carried out beforehand. Most entrepreneurs have learnt the lesson; draw attention to your project, so that the best people can start working on it. *Convincing work* puts the emphasis on what 'makes sense' to do. The notion, which emerged from my fieldwork, also draws on what I call phenomenology of practice (Berger & Luckmann, 1966; Bourdieu, 1996; Czikszentmihalyi, 1990; Latour, 1987; Merleau-Ponty, 1962; Sennet, 1998; Wenger, 1998). The vivacity of *convincing work* is particularly visible in entrepreneurial knowledge work. Nothing gets done if you do not convince your team, your manager, your C.E.O., customers, venture capitalists, media, and many others. *Place making*, as we know, is about making places (markets, workplaces, regions, or face-to-face encounters) happen. No other place in the world is as good for those activities as Silicon Valley and the surrounding areas.

My informants become embedded in their own place of work, regardless of their international links, their use of the Internet, their mobile phones, and their nomadic aspirations. For this reason, their inputs are crucial to understand the social and cultural context of knowledge work. Together they illustrate the place-bound logic of innovation. Robert and Dan try to build companies, need to physically see them, and spend most of their day trying to get venture capitalists and customers to face-to-face meetings with these companies. Stacey works with a young, urban, party-loving networking crowd. Her rooftop parties are an essential part of keeping The Standard oriented and positioned in the industry. All of our informants belong to communities of expertise (Wenger, 1998) and struggle to be inside the 'setting' they describe as Silicon Valley.

More than a hub, or a space, Silicon Valley is a place, a geographically knit community that cannot be split into merely 'spaces of flows'.

Thus, I will claim that Castells (1996) exaggerates the disembodiment of global business. Probably he would realize this if he started doing interviews instead of looking at statistics of major global information flows. That these flows increase is true, but this fact cannot deny the experience of day-to-day business. Simultaneously with the global spaces of flows of Castells (1996), the de-spacing and corresponding place-making of workers through close encounters, and engagements in few, bounded communities of practice occurs all the time. Knowledge community and knowledge-creating relationships evolve over time, and cannot easily be moved. *Convincing work*, I argue, is based on constituency building and advocacy that is so complex and full of pitfalls that it cannot occur outside of established communities of practice. Contrary to the structuralist view, knowledge is embodied (Collins, 1999; Latour, 1987; Lie and Sørensen, 1996). It is socially generated through interaction in places where knowledge workers meet. In other words, the cultures of knowledge creation are not different than other cultures in that they are essentially social, not technical, or uniquely mediated through technology at a distance.

Silicon Valley is a place, not only a space or hub as Castells (1996) claims. In fact, the Valley is a place in the sense of a laboratory where 'things' (ideas, people, and visions) are mobilized and built to companies. It contains tools (capital, experience, technology), a community of practitioners (VCs, knowledge workers) with tacit, embedded dimensions. Above all, then, Silicon Valley is a geographical area. An area where some people live and work, others wish they did, or claim they do not want to.

Neither Silicon Valley, nor its knowledge workers, could be described as completely networked and immersed in spaces of flows. It might be safe to assume that neither is New Yorkers, Parisians, Londoners, or knowledge workers in Bangalore. Rather, in the midst of spaces of flows, innovation practice still is situated in a particular spatio-temporal ordering of production. Silicon Valley work is, on the whole, not only local. It is predominantly provincial, in the sense that they defend each other, and see Silicon Valley as the centre of the world. But the provincial actors are dealing with large resources. The provincial hubris becomes a powerful catalyst that differentiates

Silicon Valley from other innovative environments. Thus Silicon Valley is simultaneously provincial and global. The real question, then, is how rare is this phenomenon? This will be a task for future research.

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6. The Visionary Practice of Globalization

How the branding of high tech organizations occurs in everyday life

Abstract

Using interview and advertising data, the practice of visionary communication in the American high tech company Cisco Systems Inc. is compared with European telecom companies Telenor and Telecom Italia. The study shows that companies absorb, reshape and reinterpret visions about Internet, work, and mobility. The article draws on social theory (Castells, 1996, Beck, 2000), organizational theory, media and advertising studies, as well as poststructuralist approaches (Bourdieu, 1996, Latour, 1999, Lie & Sørensen, 1996). Social imaginaries make up the *factishes* that visions are based on - hybrid phenomena combining corporate brands with the visionary practice of knowledge workers in the everyday. Key findings include the proliferation of visionary discourse and images, the flirt with a nomadic mode of knowledge production, and the provinciality of knowledge workers' 'paramount reality'.

Introducing visions

When I wake up every morning, I am reminded of globalization. I browse through the first few pages of Fortune magazine, and I know that the world is small, but the competition global. That the path is narrow, and that few will pursue it. But also that I will make it through the day. Before breakfast I briefly check my email on a handy Palm pilot, find that my boss is in China, and thus will not be reached today. But he is back tomorrow, his secretary writes. And then the world is back, too. For now, I am happy, digesting the morning daily with my rushed breakfast; it seems IBM is back on track. 'Solutions for a small world', their fresh advertisement reads. Ha, I think to myself. I made that up. Then I prepare for the Monday staff meeting on my laptop. The taxi to work takes another 20 minutes, but I work all the way. The world is fast. It is changing. Technology never ceases to surprise me. So, I have learned to be prepared. Read things before others. Set my online bot to search up everything written or spoken about tech advertising, industry trends, and future business scenarios.

The above could have been the reflections of any knowledge worker employed in high tech advertising as he ponders his latest taglines and thinks about the next commissioned story to make up. The world comes through by way of advertising, we are taught to believe nowadays. To some, the argument is not even worth a story anymore. Despite this, Leftist radicals like Klein (2000) are concerned we are but brands in the hands of the corporate global world. In her recent bestseller she writes: "Liberated from the real-world burdens of stores and product manufacturing, these brands are free to soar, less as the disseminators of goods or services than as collective hallucinations." In *No Logo*, Klein (2000) tries to demonstrate how brands have become ubiquitous both in society, on the street, in the media, and in schools. Her book now plays a central part in what has become a social movement against big corporation advertising and exploitation of imagery for commercial purposes.

And Lasn (2000) who is editor of Adbusters, a nonprofit organization destined to kill corporate America, writes of 'cultural jam'. America is no longer a country, says Lasn (2000), but a multitrillion-dollar brand. It is an image "sold" not only to the citizens

of the U.S.A., but to consumers worldwide. The American brand is associated with catchwords such as "democracy," "opportunity" and "freedom".

On the other hand, the image of society falling apart, or imploding into cultural massification, is also a typical theory of Leftist radicals and social theorists. I am reminded of Castells' fears of a network society where some people are 'structurally irrelevant' and doomed to oblivion when the highly mediated networks 'look the other way' (Castells, 1996), or the more straightforward thesis of a move towards commercially standardized processes of McDonaldization (Ritzer, 1996). Others believe we are seeing the resurgence of tribal communities in our postmodern society (Maffesoli, 1996). Culturalists describe a joint process of global and local experience, called glocalization (Robertson, 1992). Some say there is an inevitable conflict between local and global worlds and try to show how it becomes fierce battle, or Jihad vs. McWorld (Barber, 1996). Indeed, we might be moving towards a rootless society. Nomadic, footloose, and mobile, but with increased 'effervescence' of the moment. But there seems to be confusion as to whether standardization or fragmentation is the best word to use.

All of the above has some kind of globalization theory intertwined. Together they say something about great social changes that are occurring. And these changes, according to our observers, are occurring faster and faster (Gleich, 1999). Because, according to a mainstream definition, globalization means acting and living (together) over distances, across the seemingly separate worlds of national states, religions, regions, and continents (Giddens, 1991). As we have readily seen, observers disagree about the pace by which this is occurring and also about its moving forces. But contrary to popular belief, what I am going to discuss is not new at all. Visionary discourse on massive social change has been a part of the public scene for three decades, at least. In fact, in 1970 Alvin Toffler wrote this about what he labeled 'future shock':

> "Never in history has distance meant less. Never have man's relationships with place been more numerous, fragile, and temporary. […] Figuratively, we "use up" places and dispose of them in much the same way that we dispose of Kleenex or beer cans…we are breeding a new race of nomads, and

few suspect quite how massive, widespread, and significant their migrations are" (Toffler, 1970:75).

Toffler's (1970) images of using and disposing of place like beer cans and breeding new nomads were powerful musings that now have become commonplace viewpoints. We often hear of these terms in the books of business visionaries like Negroponte (1996) or Gates (1999), a new class of writers who occupy a most interesting space between fact and fiction. Before that, politicians were the *vision makers*. Now, many believe 'the media' produce these visions, or alternatively that 'corporate control' among multinational companies is to blame. Movements like ATTAC and various other global protest movements seem to take this perspective. But as Klein (2000) and Lasn (2000) reminds us not to forget, more and more these visions show up in advertising. High tech advertising provides further evidence of the proliferation of technological symbolism in mainstream business environments. Nokia - connecting people, and IBM - solutions for a small planet, and Cisco - changing the way the world lives, works, plays and learns are contemporary examples. Indeed, in *Promotional Culture,* Wernick (1991) claims advertising has come to change the ethos, texture and constitution of culture as a whole. It should be clear by now, that advertising is not only an organizational issue, and that visions might be produced both in- and between organizations, in- and between hectic life practices. By domestication (Lie & Sørensen, 1996), visions become actively absorbed in the tissue of society. It becomes the stuff that society is made of. The process is now seriously discussed in mainstream media and among the public.

But while Klein (2000) might be right when critical, there are more subtle elements to be found in the branding processes within our 'fluid' or 'liquid' modernity' (Bauman, 2000). To pick up Toffler (1970) again, and add a few deeper thoughts, I could say the subtlety is captured by the term nomadism. According to Braidotti (1994:35): "Being a nomad, living in transition, does not mean that one cannot, or is unwilling to create those necessary stable and reassuring bases for identity that allow one to function in a community. Rather nomadic consciousness consists in not taking any kind of identity as permanent. The nomad is a returning figure in the musings about contemporary society. Maffesoli (1996) writes that the spirit of our times is essentially nomadic. He calls the flow of imagination, desire,

feast and dream the architecture of the contemporary collective unconscious.

In effect, the nomadism we observe is a collective cultural practice, not only a solitary one. In both Braidotti (1994) and Maffesoli (1996) we find the *figure* of the nomad is more important than his empirical counterpart, the real-world people that take part in empirical investigations. And Braidotti's nomad is largely a feminist nomad, a forced position in society that has its merits. But it is the essence of the figurative imagination produced by the nomads that counts. When connected to the notion of mobile technology, it becomes a powerful part of our common social imaginary. Thus, I propose that it might be wise to look for the 'global' in the least likely of places, at home as well as at work, to find what global means to its practitioners. As Hochschild (1997) states, home becomes work and work becomes home. Will we then end up with 'homeless minds' (Berger, Berger & Kellner, 1974)? Time will show.

Futurists like Toffler (1970), leftist activists and social theorists like Castells (1996), Giddens (1991), and Beck (2000) express a zeitgeist. They indicate that we stand at the threshold of something new, both fascinating and disturbing. This sentiment is also found in high tech advertisements. It has to do with the 'global', variously understood and described as unifying, fragmentizing, or merely as dynamic and in a state of flux (Urry, 2000). My interests lie in how the 'global' is expressed. I will study both practices and advertisements, and find out how these ads are talked about and what part they play in work practices, whether they are irrelevant, but flashy, or relevant, but boring. I will do this through studying visions from Cisco, a large high tech company from California, as well as Telecom Italy and Norwegian Telenor, two major knowledge-based organizations in Europe. I think it is useful to consider the Internet and the discourse on globalization as trends that are mediated by a changing social imaginary. The social imaginary of 'globalization', and with that its visual and epistemic practices, is produced by social theorists, business writers, and knowledge workers who perceive, domesticate, conceptualize, and visualize Internet, work, and mobility. These are the issues I will explore in the following.

The branded theory of globalization

How can social theory inform our study of visionary practices? While we have already got a taste of Castells (1996), Giddens (1991), and Beck (2000), at least five approaches shed some insight. First, we have ideological social theory (Marxists, futurists, Liberals). This approach is concerned with the consequences of 'the end of modernity as we know it'. We have already been acquainted with some theory of this sort. Both Toffler's (1970) neoliberalism and the aforementioned scholarly triad would fit safely in this category. Second, the organizational perspective seems relevant. After all, we will be going into the practices of firms and look at their knowledge workers. Here, Dierkes, Hoffman & Marz' (1996) work on the social shaping of visions is relevant. In their account, organizations use visions as leading imaginaries, or *leitbild*, to focus organizational behavior. Third, we should not forget media, culture and advertising studies (Aaker, 1996; Baudrilliard, in Kellner, 1994; Christensen, 1994; Klein, 2000; Lash & Urry, 1994; Nava et al., 1997; Robertson, 1992; Virilio, in Cubbit, 2000; Wernick, 1991). Fourth, we have political economy with its writings on globalization (Barber, 1996; Gilpin, 2001). Fifth, much is to be learned from poststructuralist approaches, because they thematize the interactions between physical, social, and cultural imaginaries (Berger & Luckmann, 1966; Braidotti, 1994; Fischer, 1992; Maffesoli, 1993, 1997; Latour, 1987, 1999). In particular, science and technology studies is helpful to understand the intersections of artifacts and social strategies (Latour, 1999).

I have let Toffler's (1970) observations represent what came: the discourses, movements, and practices known as globalization. In theories developed by social scientists in the late 1990s, globalization arguments provide more subtle ways of interpreting social change and mobility. But these arguments, as I have sketched in the introduction come in many forms, and there is disagreement about the moving forces, as well as about the outcomes.

Actually, current social theory is divided between the sociology of globalization and various sociologies of territoriality. The former perspective is entirely based on the logic of ubiquitous social space, that is, it rests its argument on the discoupling of geography and social space (Beck, 2000; Castells, 1996; Giddens, 1991; Lash & Urry, 1994). The latter perspective, sociology of territoriality, originates in classical sociology with Marx, Durkheim, and Weber. Their

perspective was grounded in the fundamental observation that when people gather and form groups and territories we can derive certain practices from those groups. Its modern adherents are a mixed bag. But whether innovation scholars, science and technology studies' scholars, or cultural sociologists - they all somehow insist on the supremacy of physical places over virtual social spaces (Harvey, 1989; Saxenian, 1994; Shapin, 1998; Sennet, 1998; van Dijk, 1991). I would like to point out this divergence of perspective, but stick to the exploration of a third alternative, trying to sketch out a hybrid sociology of visionary practices. But first, an exploration of full-blown globalized social theory and its claims.

Ulrich Beck (2000:27) is a good representative in this regard. No longer seeing territorial societies as empirically legitimate, he calls his discovery 'transnational social spaces' citing the example of Africa. It is not, as we seem to have believed before, a place, but rather, a transnational idea and the staging of that idea. He touches the idea of invented communities, originally invented by Anderson (1983), and tries to show that the invocation of 'Africa' has many responses across the globe. Beck is right in that Africa is a mental thing as well. But does Africa stop being a physical place with particular smells, routines, and practices because of its existence in people's minds?

In Beck (2000:104-105) we hear that:

> "World society means 'society' that is not territorially fixed, not integrated, not exclusive…[the local tie]…cancels the equation of spatial and social distance…Transnational coexistence means social proximity *in spite of* geographical distance - or, social distance *in spite of* geographical proximity".

Beck (2000) claims cultural theory's insistence on glocal phenomena (Robertson, 1992) is misplaced because global already means translocal. But while there is no question that we increasingly 'live and act across borders' as Giddens (1994) points out, that does not mean that all sociologies of globalization need to loosen their grip on territory. To say that globalization is taking place does not mean that it takes *away* place. Or does it?

Organizational theories show how visions work to motivate technological leadership and focus, as well as knowledge worker performance. Visions serve as "points of communication through which the technological processes can be better conceptualized and

brought up for discussion" (Dierkes, Hoffman & Marz, 1996:148). The leading visions become *leitbild*, or key images, through which the organization understands itself; crystallized understandings that simplify, organize, and focalize. They are potentially collective, integrative and shared understandings that could activate, mobilize, and stabilize organizational practices (op.cit: 52). They might, in this way, help organizations handle the tensions inherent in collectives consisting of relatively diverse individuals. The way visions could work this way is illustrated by another construction, the managed brand. Brands are the perceived corporate identity that modern marketing theory says companies should have. Industry agrees their consumers now shop identity as well as products. Thus, their artifacts have to be endowed with values consumers aspire to. Building on factish, rather than purely imaginary elements, good brands correspond somewhat to the organization they are supposed to represent (Aaker, 1996).

Political economy also contributes knowledge on the interactions between firms, capital, technology, and territory in what most scholars see as increasingly globalized exchanges. Where Ohmae (1990) sees a 'borderless world' with homogenous consumer tastes, others insist on the prevailing dynamic between domestic and international dimensions. In fact, "many and perhaps most of the social, economic, and other problems ascribed to globalization are actually due to technological and other developments that have little or nothing to do with globalization" (Gilpin, 2001:363). There is even room to claim the world was better integrated prior to World War I, relative to the size and magnitude of pre-war economies. Thus, political economy, in its modest form, gives no room to dismantle globalization, but points to the way trade, geography and culture are interrelated (Krugman, 1991). On the social nature of this interaction, however, these scholars have little to contribute.

Media, culture and advertising studies have several points to bring into this discussion. Firstly, in this perspective, marketing is not only an industry but a social force that shapes meaning (Goldman, 1992). The promotional culture (Wernick, 1991) makes use of tools and assumptions found also in social science (Appelbaum, 1998:322). Thus, marketers and consumers together mold cultural consciousness (op.cit: 325). Among Leftist activists, this becomes the claim that advertising is 'taking charge' of our symbolical imaginary (Klein, 2000; Lasn, 2000). Advertising theory of this sort looks at visions

primarily as symbolic communication of power relations. Virilio takes this claim all the way, maintaining that the media now have consummated the distance between us. Globalization is 'the end of one entire world: the world of the particular and the localized" (Cubbit, 2000:130).

Poststructural theory takes a critical approach to structures, institutions, and objective 'truths' preferring to look at the disputes, corrections, and constructions of such orders, rather than dwell on their endurance (Bourdieu, 1996; Latour, 1987; Lie & Sørensen, 1996). Its strength lies in the way interactions between physical, social, and cultural imaginaries are spelled out (Berger & Luckmann, 1966; Braidotti, 1994; Fischer, 1992; Maffesoli, 1993, 1997; Latour, 1987, 1999). In particular, science and technology studies is helpful to understand the intersections of artifacts and social strategies (Latour, 1999). Such a perspective is well suited when confronted with visionary practices. Actually, neither advertisers nor the actual manufacturers of technology control the use and interpretation of their product. Consider for a moment the telephone in its early days. As Fischer's (1992) work on the social history of the telephone shows, everyone thought it would only be a business product, while the entire first decade of the telephone became a social decade where private homes got telephones installed and could now talk to family and friends at distance. Businesses were slower to catch on. Similarly, Latour (1987) shows that social processes are shaped by actor-networks. Mobilizing long chains of arguments and by way of supporters and artifacts, actors translate and modify these processes.

In particular places, however, certain types of translations prevail. These sedimented practices, sometimes embedded in institutions (Douglas, 1987) affect the way people in that place, or culture, act and think. I can here invoke Bourdieu's (1979) image of habitus as 'what makes sense'. We can see why certain practices are altered by globalization, but whether people gather only in physical encounters, in virtual encounters, or both at the same time, their focus is always 'somewhere'. Their main focus is what constitutes 'paramount reality'. In fact, when Berger & Luckmann (1966:43) write that 'only in the face-to-face situation the other is fully real' their point is to stress the 'paramount' character of 'daily life'. While, the notion of daily life is itself problematic (Silverstone, 2001), a lasting contribution of sociology has been to show that the routinization of social life is an ordinary social process. Daily life, as it were, is

occurring to everybody. Therefore, we need words for the combined practices of imagination and living.

Social imaginary is one such attempt to synthesize. As French sociologists use the term, it is the set of basic interpretive schemes that a culture makes use of at a certain time and place (Maffesoli, 1993). Theorist of the social imaginary, Maffesoli (1993:1) claims that the image and the symbolic are increasingly important. These types of theorists tend to study 'those rather uneven and emotionally highly charged events which make up everyday life' (Maffesoli, 1993:1). Moreover, the sociology of the imaginary is characterized by the figurative arrangement of the facts under investigation (Fourastié & Jouron in Maffesoli, 1993:54). For instance, one could speak of the US social imaginary in terms of the weight of the 'individual' (with its related concepts of freedom, equality, individual value, community and consumption). This particular social imaginary is important because it selects certain impressions, not others. All other values derive from it. As Bellah (1985:290) states: "the language of individualism, the primary American language of self-understanding, limits the ways in which people think".

Bourdieu's (1996) notion of habitus complements that of social imaginary. Habitus, as a principle used to describe embodied practice and embodying processes, is what distinguishes 'what makes sense' from what does not in our everyday life. Normally understood as individual habitus manifesting the habitus of the group, another way to see it would be the invocation of a 'habitus of place'. It is embodied, created, and creative within the constraints of a given time and place, in which it can perform what Bourdieu calls practical sense making ('le sens pratique') in society, that is, understood as a symbolically laden social space.

It is well known that advertising produces a make-believe reality, a society yet-to-come that might never come, a figurative dream world. What we seldom think about is how most phenomena in the world have this same fiction-like character. To show this, Latour (1999) has coined the term factish, hybrid between fact and fetish. When Latour says of *factishes* that they are real because they are fabricated, he points to the power of the sound fabrications that constitute our reality. For example, in the modernist framework of reality if you say that 'God' does not exist you are trying to impose a 'polemical state of relations' upon people you then label 'believers'. The modern critic then is the only one who believes. "It is the critical

thinker who invents the notion of belief and manipulation and projects this notion upon a situation in which the fetish plays an entirely different role" (Latour, 1999:270). The modernist takes the attitude of an iconoclast, trying to destroy the power of the image by empowering it with a magical strength its adherents do not rely on themselves.

While the factish seems to be a concept of great heuristic value, Latour says little about how factishes are produced. The following is an attempt to take Latour's (1999) concept of factish one step further. I will look into the mode of production of several factishes; that of Cisco, that of Telenor, and that of Telecom Italia. I will also try to see what kind of social, geographical, and cultural imaginaries these factishes build on.

Factish methodology - exploring visionary practices

I want to study the ways visions are produced, whether they passively diffuse and get adopted, or are actively spread, but then domesticated. How should I go about such a study? What kind of data would I need to answer that question? First, it seems clear that the production of visions occurs both inside and outside high tech organizations. Both modes of production are shaped by the available social imaginary. Second, it seems clear that I need to look at huge, globalized industries because they would show globalization patterns first. Third, I would need to compare two different trajectories, in order to see whether globalization assimilates into a whole (Ohmae, 1990) or whether globalization works fragmentizing and splitting apart (Barber, 1996; Bauman, 2000).[12]

I chose to do an empirical study of the visionary practices that includes Cisco Systems, one of the world's largest companies, which is situated in California. I felt that location might matter, and needed two companies with comparable position somewhere else. I chose Telenor in Norway and Telecom Italia. In addition, I included smaller companies in their peripheries, not to get too narrow a picture. I have

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[12] Although we look at the production of factishes in several companies, we will not address at length the way the visions travel between the US and Europe, apart from a short note on visionary business literature. Rather, we are concerned with the specific modes of factish production we have observed.

the most material from the US and Norway, with significantly less material from Italy. For instance, I have few interviews from Italy. The limited Italian material stems from the fact that I was denied access at Telecom Italia. I was asked directly 'if I was some kind of industry spy?' by senior workers of this company. However, I felt it was important to include the Italian scene for comparison. Few sociological studies of this kind include Italy, apart from Putnam et al (1993) and Piore & Sable (1984). I have compensated for the lack of access in Telecom Italy with a larger analysis of visionary literature on technology and work, as well as a thorough analysis of advertising campaigns. Because the Italian material only leads in one direction - towards the understanding of technology as a romantic blessing, but where they are 'behind the rest' - I still think the quality of information is good enough. However, I ask the reader to keep the limitations in mind. For instance, the fact that I spent little time in Northern Italy could have impacted my findings. Although advertising campaigns are roughly the same, people and their worldviews are strikingly different between the North and the South.

The relevant symmetrical data available was:

- telecom ads (visual and textual)
- literature on visions of technology (from academic to journalistic)
- interviews with high tech firms (except Italy)
- fieldwork with participant observation (except Italy)

From advertising studies, I brought the perspective that the social study of advertisements was appropriate data material (Applbaum, 1998; Goldman, 1992, Nava et al, 1997; Wernick, 1991). Advertising, in itself, is worth attention because of its mediating function in contemporary society. It has entered our mainstream discourse, and plays out in more and more fields of action.[13] Advertising is a form of communication that sometimes works more effectively as auto-communication than as consumer influence (Christensen, 1994). Seemingly, the advertising does not work on others than the ones that produce it, and their organizations. And often it is used to boost the self-esteem of companies in stiff

[13] This is not the place for an extended argument about the function of advertising. See Wells et al. (1995). For a general argument of the increasingly central position of advertising in our societies, see Nava et al. (1997).

competition. Most prominently, the technique of branding is used to this end. The goal of branding is to develop a brand identity that says something about what the brand aspires to be, almost like a person. Brand identity is an integration of several aspects of the branding process: brand position, brand symbols, brand image, brand personality, organization as well as emotional and self-expressive benefits, all of this situated within a brand system (Aaker, 1996:vii). Brand position, that is, the consistent messages and symbols you want to convey, is the only part of this that is expressed to the public. The brand position is the basis of your competitive advantage, and is always aimed at a specific target audience. Very often, however, the brand's image or how the brand now is perceived, differs substantially form the ideally constructed brand position. The visionary production of globalization occurs quite visibly in advertising of high technology. High technology advertising, therefore, provides privileged access to ideological interpretations of technological change.

The ads were gathered during an extended period of time, from 1998 to 2000, and taken from newspapers, web sites, and company brochures in all countries. Ads were selected based on prevalence in high technology magazines and newsstands. The visionary literature was found in libraries and newsstands in San Francisco, Trondheim and Rome. A selection from our total of 100 interviews with high tech firms conducted in California and Norway are presented here. Web sites were selected from keyword searches on 'advertising', 'visions', and 'policies'.

These symmetrical data are compared and contrasted using the lens provided by the concepts of social imaginary (Maffesoli, 1993), habitus (Bourdieu, 1996), paramount reality (Berger & Luckmann, 1966), and 'factish' (Latour, 1999), already introduced. section. In addition, I rely in particular on perspectives developed in the field of science and technology studies (Latour, 1987; Fischer, 1992). Consistent with this approach, I believe social inquiry should be an attempt of constant comparison, rather than trying to discover, or reveal, 'contexts', 'structures', and 'meanings' as such. Therefore, I take a pragmatic, critical, and deconstructive approach to the structuralism inherent in some of Castells' (1996) and Bourdieu's (1996) work.

My data are clearly only indicative, given the broad nature of the theories I endeavor to test empirically. On the other hand, one of

the main problems with social theory in the form of Giddens (1991), Castells (1996), or Beck (2000) is that it seldom can be put under real empirical scrutiny. The nature of their discourse evades any kind of thorough point-by-point examination.

Cisco and the practice of Internet

I have argued that high tech companies through their visions actually try to build brands that include a worldview, a discourse of global change. I will now investigate the visions of Cisco, and then compare those with visions in Telenor and Telecom Italy. If we are to believe globalization theorists, I now have a 'global' sample. Alternatively, I just have three separate companies that operate in their own spheres. At the outset, I am weary of the claim that we then have an American, a Norwegian, and an Italian company before us. With this in mind, I will now explore my material.

Cisco is one of the world's largest companies. It rose rapidly with the advent of the Internet as a major producer of computer network hardware and infrastructure. In the late 1990s it became known for an aggressive, yet successful strategy of acquiring small companies and shaping them into 'Cisco culture'. But the Cisco factish is far more than a typical company culture. This is apparent when Bunnel (2000:xii) writes in his celebratory book on Cisco: "I hope to explain how Cisco has become synonymous with the Internet". Importantly, Cisco actually cultivates a virtual culture both inside and outside its borders. No product is sent out without rigorous virtual testing by Cisco employees. Cisco's Intranet, as well as their web site (www.cisco.com) is among the largest on the Web. Cisco has charismatic leadership. Current CEO John Chambers is highly visible and regularly addresses his employees to imprint Cisco's 'grand mission' of "Empowering the Internet Generation". So, we could say the visionary climate is good in Cisco. They are, in effect, a visionary company. Their visions are factishes (Latour, 2000), they mean something outside their symbolic and factual character. They are semi-real and point to real processes within the corporation, creating the Cisco factish.

The social imaginary of a culture shows in its writings. When examining visions, a certain section at bookstores across the globe will not escape attention: the business aisle. Increasingly filled with bestsellers competing with fiction giants, business writers now enjoy

a great popularity. The foremost representative of Californian visionary literature is Kevin Kelly. In the *New Rules for the New Economy,* a Business Week bestseller from 1998, former *Wired* editor Kevin Kelly writes:

> ”This new economy has three distinguishing characteristics. It is global. It favors intangible things – ideas, information, and relationships. And it is intensely interlinked. These three attributes produce a new type of marketplace and society, one that is rooted in ubiquitous electronic networks” (Kelly, 1998:2).

U.S. visionaries like Negroponte (1996), Bill Gates (1999), Al Gore, and Kevin Kelly (1998) profess a digital mission. They believe digital technology will make the world a better place. And their visions start to wander, spread and impact our symbolic environment, and in turn our social imaginary. The values we hold and the logic behind them change as a result. In fact, the major focus of Californian visions could be captured in Cisco's brand statement for 2000: "The Internet - changing the way people live, work and learn". The US concern about the so-called "digital divide"; that people will be divided into have's and have-nots, is also telling. As Tapscott notes: "As the new technology trickles into poorer neighborhoods and schools, the better-off children are leapfrogging others-getting not only better access, but a wider range of services, faster access, the best technology, and, most importantly, increasing motivation, skills and knowledge" (Tapscott, 1998:11). Cisco has taken this challenge, and runs computer literacy programs both in the US and abroad.

Both branding literature (Aaker, 1996) and poststructural approaches (Fischer, 1992) leads us to expect that visions that are embraced by the people will come true, others will not. The content of the visions might not matter that much, only its careful insertion in a culturally prepared crowd, a community whose social imaginary is ready and where the timing is right. For instance, John, a consultant with the McKenna Group that I interviewed said this:

> "I am fascinated by California. There is such a challenging technological environment. Actually, some of my best business contacts I have gotten outside of work. I once took my daughter home from a birthday, and while I waited for her to get ready, I was chatting with one of the other

parents. He turned out to be a very influential executive, and I got the introduction I needed. I now have him as a customer".

Another example from the corporate world is what happened at my fieldtrip to Wireless consultants Razorfish in San Francisco. The setting was odd; a Finnish group of Internet professionals getting an introductory lecture on Razorfish by a pubescent consultant called Ames. His voice was monotonous, his words preprogrammed, and his presentation was an example of virtualized real encounters. He only said what the 24-inch screen told all of us:

"Everything that can be digital will be. Razorfish are global with a big presence in Europe. We know everything about pervasive mobile computing. We have the knowledge of interactive TV from the US experience. Mobile computing will have bigger impact than the Internet. Every interaction shall be tied to some emotional element. Everything that can be digital will be. Everything that can be mobile will be".

Ames said neither more nor less than his company allowed him to say. He performed the role of a missionary, a salesperson for digital and mobile futures in the hands of Razorfish. To the questions from the audience, he resorted to commonplace assertions that were not news to the industry. His experience was that of the company, he not only represented Razorfish, he was his company's vision. There was no need for the person, and maybe that, indeed, was the intention; to show that virtual encounters could eradicate the personal encounter, re-ignite communications by destabilizing it. It was a frightening experience to everyone present. Many commented it afterwards. They all agreed the presentation was boring and lacked intensity, poise, and interaction. Razorfish, the company behind the web pages of Armani, Financial Times, MySAP, and Charles Schwab had, in fact, disappeared into the background. The medium was the message.

However, background players often are more influential than it seems. This is also the case with Cisco Systems Inc. Until quite recently, Cisco was relatively unnoticed in the public eye, despite its size; up with IBM as one of the world's largest companies. Their low profile had been both one of choice and one engineered by society itself. Cisco sells something as complex as routers and switches; backbone infrastructure to the Internet. Because their customers are

other large companies, the mainstream consumers were not targets of company branding efforts. All of this changed in the late 1990s. As the Internet became the main vehicle through which people talked about communication and technology, it also became the best medium through which the promotion of technology was engineered. In 1999, Cisco launched an enormous campaign to raise public awareness about their mission. Their tagline "Empowering the Internet Generation" soon became visible across the globe, and especially, across the US. Out of all companies that 'claimed' the Internet Cisco had a point. Their products were a necessary part of an increasingly complicated data infrastructure. As Bunnel (2000) writes, Cisco is a real Internet superpower. The 25, 000 employees are the plumbers of the Internet economy. Here, we can see how the Cisco factish is underway, building on the cultural imaginary of the Internet, freedom, and connectedness.

By most standards, by 2000 Cisco is a visionary company along with a few other American giants. Such companies have not only generated long-term returns, "they have woven themselves into the very fabric of society" (Collins & Porras, 1994:4). Its core values of networks and virtual communication are, as we speak imprinting themselves into the American psyche, knitting, as it were, the Internet into our daily lives. Quite strikingly, Cisco's ideology is shared among their employees. Not shared in the sense of 'understood', but more like rules they live by in their corporate lives (lives that revolve around the company they work with). Through enormous corporate efforts the message gets through to everyone. Arriving in their corporate headquarters outside San Jose, aptly called 'Cisco Village', one is met by enormous water fountains in the shape of the corporate logo, similar looking buildings everywhere, and clean cut, golf-size greens with no one playing ball. Make friends@Cisco. Its job advertising campaign of summer 2000 states the obvious: when all you do is work, your friends will be at Cisco. The ad, of course, had a different angle. But as Bunnel (2000) states: "To join Cisco is to join the Cisco clan. Cisco is its own village…nearly everyone there shares the same interests, socioeconomic status, and education. Cisco workers are widely known as productive, happy, and driven".

Let us take a look at how the clan works from the inside. I enter a building and meet Sarah, a manager at Cisco. Her ideas are quite closely knit to Cisco's:

> "Everything at Cisco is perfect. I have a great life with wonderful challenges. It feels so meaningful to participate in changing people's lives. The Internet is really amazing. Making a real difference is what counts".

The woman is completely immersed in her own doing. She seems like a corporate cyborg, half woman and half a corporate technological visionary. The factish seems complete. What, in fact, could be the way she is socialized into this vision? One key is, of course, Cisco's advertising, but what about the everyday life of a Cisco worker? Sarah explains:

> "We don't deliver products that we haven't practiced ourself. We are doing everything by the Internet. Our current, up-to-date, cutting edge training is done online in the field. That is amazing and unparalleled. We do everything online.

The practice of these visionary imperatives serves to domesticate (Lie & Sørensen, 1996) the Internet into Cisco worker's everyday lives. The online imperative seems to be part of corporate routines, as well as working as a mantra among Cisco workers. They are proud of it, and it seems like 'everything online' is something, they believe, distinguishes them from the rest of us; unlucky gentiles who are 'outside'. In fact, the discourse of being the 'chosen ones' is very strong, but typical of cultish self-conceptions, there is a strong focus on diversity:

> "All kinds of people work at Cisco. I feel like a social anthropologist. Everyone has his or her core competence. They just try to bring in the best and the brightest in each field. Cisco looked at my resume, and they said; we like it, this is what we want. They look for diversity. It is a very flat structure. It is a place where people can present their own ideas".

During my visit to Cisco campus and meeting with Sarah's rejoicing Hallelujah chorus I sense that Cisco has been able to lift their mission into the spiritual realm. It seems their workers are all part of one family. But, I ask, what if it doesn't fit into the vision?

> "Everything pretty much fits in. The vision is very broad, articulated very well by John Chambers, who is an amazing leader. There's a tremendous amount of freedom and

> leverage, as long as one does fit in. And you have the ability to be very creative…and that is that what makes Cisco successful. But everyone knows that you are following a certain leadership and business ethic. And this is reiterated constantly: That we want to change the way people work, live, play, and learn. That the Internet and Education are the two great equalizers, and that this is the first time in the planet to level the playing field. So everyone can fit what he or she are doing into that framework. We want to be the most successful and generous company in the world".

The Cisco experience is shared throughout Silicon Valley. Knowledge workers are enrolled in a practice of technological rejoicing. It happens through social gatherings, through invoices, and through the social imaginary of Silicon Valley itself. You are supposed to care about technology. It feels natural. With a shared habitus (Bourdieu, 1996) you do 'what makes practical sense to do'. After all, it is your life, just like with most other people's life in Northern California. Neil, an executive at the Incubator *Campsix* in San Francisco says it this way: "We've got to make sure that whoever comes to us becomes an evangelist to the highest degree. If we can do that, the rest will be easy". At Campsix, they bring in warm lunch every day and house wine parties every Friday. Both customers and workers stay up late.

Through the Cisco factish and other high tech imaginaries, the Internet gains status as an artifact with high standing. Its spokespersons range from the corporate voice of the CEO, to the everyday workings of a Cisco salesperson. The Californian social reality is already saturated with technology. There is no need to be ashamed of doing work related things off work. In a way, you are never off work. A Californian family I lived with discussed stock quotes for dinner. They ate to the sound of CNN, used Fortune magazine as bathroom reading, and continually mused about the strength of American technology. For them, it was the most natural thing in the world. The issue has entered the tissue of society. Technology defines the social imaginary of the everyday Silicon Valleyan.

Europeans tend to think that much of this is particular to the US, and even more so to California. This point of view is embedded in ambivalence. On the one hand, we are fascinated by the culture

and anxious that we will miss out on something important. On the other hand, we are put off by some of the extremes in the ways things are done.

In this perspective, Norway would appear as a sensitive antidote, a small country of pragmatists, with long cold winters and a more slowly moving economy. Let us therefore move to the Norwegian telecom, Telenor, to inquire whether the Californian visions have been transplanted and appropriated, as the globalization theorists would have us expect.

Telenor's nomadic knowledges - creating a Norwegian factish.

Historically, Telenor bore the vision of providing the communication needs of the Norwegian people. As Rolf, a Research Director at Telenor R&D, claims:

> "Satellite communications was a great challenge. In 1984 we managed to get TV to Svalbard [the small Norwegian settlement on islands by the Arctic Circle]. There was a common vision that we would make it - between industry, government and Televerket [now Telenor]."

Telenor is the largest Norwegian telecommunications carrier. Owned by the Norwegian State until the late 1990s, it has undergone a myriad of organizational changes, and now consists of at least eight different subsidiary companies. In early 1999 a possible merger with Swedish Telia was rumored, but the process failed due to political pressure and difficulties in the integration process. The current CEO is Tormod Hermansen, a former bureaucrat with a successful career in public administration.

As strange as it may seem, the appointment of Hermansen provided what history saw as a 'corporate turn'. After all, the company was formerly run by the public administration. For instance, Televerkets Forskningsinstitutt (created in 1967), formerly something of a national technology research institute, began to play a more traditional role as an R&D department supplying analytic backdrop to the corporate structure (Collett & Lassius, 1993). Telenor R&D, situated in their remote Kjeller campus 70 kilometers outside of Oslo, represents the engineering culture that graduated from the Norwegian Technical College in the early 1970s. They are similar in

both clothing and thinking, not commercially minded, and they are essentially interested in technology for research purposes. When I spoke with their various departments I found a striking variety of outlooks, just what you would expect from a large research organization, but without the great visions.

In the summer of 1998 Telenor Mobile launches a mobile office package called *Nomade*, with the slogan "freedom to work independent of time, place and space". The launch was spectacular, never before was more money spent on advertising.[14] Jostein, a research scientist with Telenor R&D states:

> "The Telenor campaign for a product called 'Nomade'? I remember the advertisements, but I haven't reflected that much about it, and I don't really know what it's about". However, his view about 'mobility' is a different story: "Mobility will become self-evident from now on. Based on our experiments we think terminals with multimedia content will appear, and that people will use mobile units for information and entertainment".

Apparently, the link between a nomad and mobility is unclear to him. In fact, while there were exceptions, mostly visions were either purely technological in nature, like the notion "IP everywhere", or overly social. An example of the latter is the social scientists crammed into one floor in the R&D building. They conducted experiments with smart houses and came up with future scenarios like the fridge that tells you when it is empty. In fact, it seems like Telenor knowledge workers have a very domain-specific interpretation of their own expertise, and distinguish between whether their job is, crudely put, 'technical' or 'social'. The following comment from Olav, a scientist who works for Telenor Mobil in Oslo illustrates this point. I wonder: What do you think about the consequences of the Nomadic concept?

> "Well, I don't really know what you mean. Social scientists study those things. What seems clear to me is that such a possibility to be available and work there, and then - having

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[14] Telenor as of 2000 is very different. Two campaigns are much bigger than Nomade. Firstly, the launch of the mobile portal Djuice. Secondly, the campaign when Telenor was introduced on Nasdaq.

> access to whatever information you might need - clearly could have great consequences for social life. But that is, in many ways, outside of my domain".

Olav is not sure whether Telenor really should occupy themselves with visions. Does he think Telenor should have a mission statement?

> "Well, that clearly is an existential question. What should Telenor be? There are many opinions about this. What seems clear to me is that it is ok to know a little. And no matter what, Telenor will be in the business of moving signals. We have always been, and I think we always will be".

Olav and Rolf have technical visions at the forefront, their world is signals, IP, mobility, and terminals. The marketers of symbolic language evoking 'nomads', on the other hand, belong to the business school educated management within Telenor Mobile Communications. Never have we seen such explosive metaphors, such fascinating material, and such a boring product. And consumers saw this. They refused to take Telenor's version of Nomade into their social imaginary. Nomade was a product that time, technology, and words ran away from. It was launched too early and repaired too late to impact the whole mobility discourse, both inside Telenor, and to consumers.

While coordinated efforts were hard to come by, numerous other points where visions travel through were found. I asked Peter, a Telenor executive about his role: "In a way I provide cosmologies for the corporation. I produce those wide scenarios and IT-strategies, as the old, wise guy".

> "So my role here is to work like a sort of high priest or something. Some kind of interpreter of the Gospel who tells the people how the world will be [by ways of] broad backdrop presentations and scenarios. And in terms of methods I see things in a longer perspective than those who just graduated. I am a little more like Abraham, who [was old and wise]"

Curiously, he collects data from firms like McKinsey, Giga, and Cisco, from internal environments of analysis within Telenor as well as from scenario projects, research and the business newsmagazines.

Here I am, in the core of Telenor, trying to explain the purpose of my inquiries. "I am trying to look at the tensions between internal and external visions, between technological and market oriented visions, and the way these visions 'wander' in and around the organization". To this, the laconic answer is revealing:

> "Well, I do not really know if you can get hold of our internal visions [thinking they must be spelled out, and that they are somehow 'secrets']. Who keeps them? I guess you could find out something from…he is in a meeting until 11.30"

Even more enlightening is our next question. Does Telenor have a brand?

> "A brand?" Yes, what does Telenor stand for? "Eh. I don't know. I have my picture since I work here, so for me Telenor is the old Televerket, you know. And as for the Telecom Company…I have never bought a PC from Telenor. And if I did I might have put Telenor together with Computerworld, Computerland…different PC stores…for me it is not a PC store".

After this wonderful clarification, we are ready to proceed to Telenor's advertising. In stark contrast to the people I met in Telenor, their advertising seems clear-cut. In an old brochure meant for internal use, the introductory text states: "Telenor's identity is to be crystal clear…the reason is…that we are different…because we are". Nowhere in the 50 pages that follow, am I able to retrace meaningful ways that Telenor are different. Except one thing: the depicturing of national imagery prevails. Picture 1: a girl on top of a mountain. Picture 2: pine trees with woman. Picture 3: a man in a worn-out orange raincoat sitting at a cafe using his laptop. This one at least has to do with technology, even though Telenor sells none of it. Interestingly, the question of national imagery is even mentioned in the brochure. "What makes communicative situations typically Norwegian? And what can we, from the outset, define as typically Norwegian?" It seems that while the construction of a Norwegian brand is a conscious effort, the factish is far from complete.

Still from a brochure, I find Telenor has portrayed a young, blond Norwegian girl, probably 18-19 years old taking sun on the deck of a ferry, with a cellular in her hand. Typically Norwegian?

Maybe. For as the story unveils, we learn that Norwegian Telenor has seven features: people, environment, symbols, language, technology, colors and music. We learn that Telenor's problem in market communications is that they sell "invisible" products. We read:

> "Therefore we have to borrow cellular phones, faxes and computers from other suppliers in our communication. Integrated in an environment these products make sure our technology is visualized to the receiver".

If we compare this with the boldness of Cisco's 'Empowering the Internet Generation' campaign, we see the relative lack of cultural grounding in Telenor's visionary efforts. Both companies sell 'invisible' products, only one of them has a strategy for communicating what this invisible is. But might this difference be a strategic choice?

The focus on exploring nature is followed up by Telenor International; a subsidiary of Telenor AS. In early 1998, their new motto becomes *No barriers*. "It reflects the Norwegian trait for exploring new worlds and embarking on new ventures - something that drove on our more famous explorers such as Roald Amundsen and Thor Heyerdahl", the commercial reads. We step to the home context; half a year later Telenor Mobil run TV commercials to demonstrate the virtue of the cellular phone in emergency situations. Effective use of suddenly sick, isolated old people in combination with a typical bad weather situation, Norwegian narrow roads, and a handy Sea King helicopter drives the point home. Technology is the savior. We need the cell phone. Later, as it turns out, Norway comes to adopt the mobile revolution through something as simple as text messages, or SMS. Here, for a change, Telenor's illustration in the early phase is effective. Their tagline in a major newspaper campaign was 'email in your jeans pocket', alluding to the fact that some people put their cell phone in their jeans.

The reasons why Telenor is not a visionary company with a consistent brand but a company of scattered visions are complex. The physically remote engineering culture of Telenor R&D has few contact points with the other divisions. In terms of practical knowledge management, or mentality, Telenor has no strategy whatsoever. People are left to themselves. Thus, the development social imaginary is a random result of practices only somewhat related. As one worker said: "I don't really care that much about

Nomade, I mean, it is a trend we believe in, and for sure the terminals are getting more powerful…but so what?"

Visionary vocabulary is, actually, not a high point in Norwegian business at all. That some companies, like Statoil, manage to get their 'identity' across to people is out of the ordinary. If anything, Norwegian brands are based on more direct associations with 'mother Norway metaphors' - nature, resources, and social democratic values.

We find Telenor's many subsidiaries have quite different sets of visions. We are reminded of the business corollary created by one of the former CEOs of Hewlett-Packard: "If HP only knew what HP knows". Where we would expect conscious switching of visions between the different types of experts depending on the audience and situation, it seems like Telenor has adopted the *laissez-faire* attitude. Where the R&D department are selling safety, control, identity, and change, Telenor's Corporate Division is selling cosmologies and technology strategy, and Telenor Mobil sells safety, availability and control. The limits of brand metaphors within one company become immediately apparent. Visions are produced because they are supposed to, as if they were part of a job description. Or, they are brought in from external sources like McKinsey, and then never domesticated. Meaningless statements with no backing in corporate reality cannot succeed even though they have vague referents in the outside empirical reality.

But let us leave the internal context of Telenor for a while. The national, geographical, and indeed physical situatedness shows. On the other hand, visions seem to stop inside of Telenor. Or, do they? We look to the Norwegian media, and find Telenor has all the space it could ask for in the Norwegian business newspaper *Dagens Næringsliv*. Even without big words, the message is clear, and it gets through. At this time, competitors are few.

Trying to patch them together, the visions that Telenor presents through mission statements, adverts, and strategy documents could be summarized as 'a down-to-earth technology company supplying the communication needs of the Norwegian people'. In the period in which I studied Telenor (1997-1999) overall brand strategy was nowhere to be found. Telenor is the case of a technologically minded engineering culture with little power to create credible factishes (Latour, 1999) crashing with a superficially 'global' attempt to market Telenor's products. For example, the Nomade campaign comes into

the middle of a clash between a technologically minded engineering culture and a rising class of mobile marketing missionaries. Our study gives reason to question Callon's (1987) statement that 'engineers are better sociologists than the sociologists themselves'. Some engineers do not have the symbolical vocabulary to infect others. Whether they are, or not, seems to be a highly contingent matter. Alternatively, Telenor is highly aware of how branding occurs in everyday life. They are choosing to let their brand be decided by their own workers, with their different perspectives, and with their shared Norwegian background. Thus, the Norwegian theme of nature, practicality, and mobility emerged in the process.

The Italian imaginary: Romantically catching up

Italy got off to a slow start in the Internet race. Their cleavage between the information rich North and the backward South contributed to the sticky take-off. But Italians combine their initial slowness with quick appropriation. Taking in foreign impressions, and giving them a local shape has always been their strength. We see this across the cultural sector. Books, movies, TV - Italians spot a trend, translate it, and adopt.

In 1999, Internet is on the move into business Italy, even though there is resistance. To a large degree, Internet is pushed by the financial and technology part of the business sector. In *La ricchezza digitale* (Digital Wealth), Marco Magrini of the business newspaper *Il Sole 24 Ore* writes: "It is good to remember [that we depend more and more on each other]. The world has not had a better chance to begin to cultivate great thoughts" (Magrini, 1999:159).

The Italian drive towards the Internet society is targeting education. There is the sense that Italy has been behind the rest. In a January 2000 supplement to the major Italian Newspaper *La Repubblica*, publisher McGraw-Hill, KataWeb, and Italian telecom Omnitel collaborate on what they call *teledidattica* (tele learning). The brochure has a revealing title: *Tutto Internet no problem* (Everything on the Internet, no problem). It is evident that the current stage of Internet in Italy is problematic to a large proportion of Italians.

In addition to the perceived educational challenge, we find more juicy cultural connotations. If we look at Italian ads, we find they are heavily focused on sex, romance, and strong emotions. A typical Italian ad is the SMS commercial from Telecom Italia showing

a cell phone display. It states: "I love you, stupid girl, have me forgiven?" Another display has the response: "I hate you, stupid, you are forgotten". We do not have to study semiotics to notice the semiotic play on romance and technology.

A key to contemporary Italy is Prime Minister and media mogul Silvio Berlusconi, who owns several TV stations and runs an important right wing party, a football club and a national newspaper. Berlusconi's company *Infostrada* means quite literally an "informational street", a "better way". In an ad we see their stylish phone booths, always in pairs, always side by side, with a dog relieving himself on the side of one. So as to say we know this is a street product, but "we can do both": stay in the street with you, and/or take you out of it, lifting, so-to-speak your social relations onto the Information Superhighway.

In another ad, Telecom Italia boosts they are "dedicated to those who don't think the new technologies help you to live a better life", showing a man with his laptop in the middle of a sandy beach, probably somewhere along the Italian coast, or in North Africa. All with a big grin on his face; sitting in a comfortable chair with no papers around him, no coworkers, no disturbances, and in plain sunlight. Or so it seems. The trick is, this newspaper ad is connected to a TV campaign. So, looking more closely, we find the laptop has six bullet holes. In the TV commercial this man is about to be executed by Tunisian troopers, but has his laptop inside his shirt. This saves him, of course, and he is ready to work. "Live a better life", then, in essence, means survive. Quite clever for a former public company, but may be not so informative, logical, or exciting. Anyhow, it shows how technology has 'snuck' into Italian society, and has not been openly welcomed.

In general, the Italian visions are focused on 'regaining' lost territory. Among the Avant Garde Italians, there is the sense that they are behind, and must 'push' the visions more aggressively. The Italian visionary practice pushes technology as multimedia, not as technology as such. This might have to do with the common Italian resistance against everything that is labeled technology without including design. Which, incidentally, is why car manufacturing is a whole other story in the country of Fiat, Ferrari, and Vespa. Incidentally, as we move towards 2002, and these lines are written, technology takes a turn towards design. Italy has, again, a chance to

dominate, to leapfrog the rest and regain lost territory. But there are obstacles, too.

Where Norwegian journalists rarely boost technology as a 'wonderful' invention, and focus on top management wages rather than the future of work, Italy is different. Italian journalist Arianna Dagnino (1996) takes a more spirited approach. In her book *I Nuovi Nomadi* (The new nomads) she sweeps over the trend that new professions are mobile and claims they give rise to a more independent, flexible, creative and open individual behavior in our societies. "The words that count", she writes, "are openness, mobility, flexibility, spirit of adaptation, dynamism, heterogeneity, cosmopolitanism, metamorphosis, cultural contamination, autonomy, lightness, destructuration" (Dagnino, 1996:47).

Others again are less optimistic, but not less euphoric. In the 1999/2000 issue of *Telèma*, a full size journal for "the news and future of the multimedia society", a clan of young Italian sociologists and writers try to show that "electronic bureaucracy will lead to a more civil society". Their arguments are in line with the strong Italian tradition for so-called *rete civili*, or civil information networks. These networks exist in, and around various Italian cities and communities, and are heavily focused on social criticism online. They are driven by left wing (often times communist) volunteers who were among the first adopters of Internet in Italy. The 1999 conference on Digital Cities, held in Parma, Italy, also perpetuates ideal longings for release from bureaucratic and mafiatic captivity by ways of the Internet.

The semiotic and philosophical interpretation of the communicative turn in the understanding of technology is what characterizes the Italian academia's approach. Numerous books document this trend (Fiorani, 1998; Maldonado, 1997). As we can readily observe, there is an incredible richness of words in Italian mainstream cultural commentary. Their language is full of allusions, divergent paths, and philosophical connotations. But it is also a fragmented language, one taken out of empirical reality, relating to some kind of literary reality that other Europeans know only from literary reviews. There is not a lack of web sites that demonstrate this trend. The zine *Caffeeuropa* (http://www.caffeeuropa.it/) is a perfect example, pretentious, 'high-flying', and overly 'cosmopolitan'. Its pages are sometimes filled with intellectualism in the worst sense.

In sum, I find that the rich Italian imaginary allows companies to make use of visions that are less extreme than visions in Telenor,

contain emotional longings, are self-ironic and make great use of humor. Italian technology ads are also duller, more businesslike, more multimedial, and less technology focused than visions in Cisco and Telenor. We recognize the social imaginary of a country where stereotypes are the least controversial of all places. In a way, Italians live off of stereotypes, and most of them have learned to enjoy them. Knowing that they contain some sense of truth, but that they mostly are wrong, and of course, should never have been said out loud. The Italian self-irony is what saves the visionaries from their own everyday monsters.

Visionary practices in everyday life

In the initial phase of this study I thought of visions as advertising material from corporate sources; expressed in advertising and in the stuff airport bookstores are full of. As it turned out, visionary practices is much more common. As a start, the range of actors performing visionary practices is bigger than I expected. We note at least these important types:

- sociological visions (sociologists of globalization and territoriality)
- expert visions (researchers, developers, futurists, consultants)
- corporate visions (CEOs, PR-people, marketing, commercials, advertising)
- political visions (politicians and policy documents with a long term perspective)
- knowledge worker visions (people in technology jobs)
- user visions (everyday visionaries around the breakfast coffee tables)

These forms of visionary practice have different impact. Quite simplified, sociological visions in the form we saw in Beck (2000) and Castells (1996) serve as a repertoire of concepts and arguments for the others. Most expert visions are produced by profit-seeking policy entrepreneurs; the kind who typically write books for airport bookstores. Their visions influence corporate visions which produce the raw material for advertising and brand messages like Sun Microsystems' "we're the dot in .com", or political visions like Al Gore's 'Information Superhighway'. The way technology is talked

about on the street, or around the breakfast table, has a profound impact on visionary practices. In such a way certain brand statements win through, others fail. Those who remain, influence the way the industry starts producing expert visions.

Early in the process, it seemed corporate visions were the key to the rest, as they serve as the mediating agent between the two other layers - experts and laymen or users. However, in interviews with knowledge workers in it turned out user visions reinterpret expert and corporate visions. Where it would be tempting to think that knowledge workers only shape other people's visions, of course, they also shape their own. It turns out the knowledge workers themselves participate in the production of technological visions. Both willingly and without knowing they do so. For instance, Sarah, a female knowledge worker at Cisco says: "It is so fascinating to work here, and be part of such exciting times. We are, in fact, changing the way the world lives, works, plays and learns. It is better than working for the UN" [It has to be noted that this Cisco worker actually *has* worked for the UN]. Her words echo the words of her boss, CEO John Chambers. It closely reverberates Cisco's advertising. Rather than merely a corporate zombie, Sarah is an example of an everyday visionary in California. She participates willingly in the interpretation of her own world. She is painstakingly aware of what is going on. The proliferation of visionary practices is a characteristic of California.

Theory led us to expect a tension between global and local modes of visionary production. I distinguished between sociologists of globalization and sociologists of territoriality. It seems clear that the strong thesis of the former, that social space is ubiquitous and uniformizing, is falsified. In order to understand how visions wander across people, places, and through artifacts (computers, books, advertising campaigns), I use Latour's notion of factish (Latour, 1999) to understand how reality is made credible precisely because it is fabricated. In doing so I treat Cisco the product (routers, switches, and Internet visions) simultaneously as fact (travelling and trying to inflict action-at-a-distance) and fetish (exaggerating Internet's importance). We saw that the fetish works to motivate company culture. We saw how visionary practice transcends the local and global conditions. It is neither completely bound, nor free from the constraints of its conditions of production. On the other hand, visions come out 'true' when taken-for-granted by enough people to give the

vision momentum (Cisco). But the factish does not travel everywhere, and it changes on the way. In other words, both 'local' and 'global' are misleading terms.

Thirdly, we have new knowledge about what could happen when visionary production is professionalized. In some organizations, like Telenor, visions then becomes the 'stuff' of marketers, while 'technocratic visions' still persist at varying degree within the organization. I have shown that not all companies benefit from a visionary culture where visions are encouraged or from a language (like English) where visions have 'natural' expression and 'sound right'. Visions *als beruf,* so to speak, split management, knowledge workers, and marketing into self-referential symbolic imaginaries where they take on a life of its own. However, the striking observation of the Californian knowledge worker and management households shows that when technological visions become ubiquitous in conversations, they are already taken-for-granted and self-sustainable (we saw this in the observations on American dinner-table discussions).

So, why is the strong version of the globalization thesis falsified in my study? One possibility is that my material falls short, especially because of the limitations in the Italian material. But on the other hand, both the Cisco and the Telenor case show the trend quite clearly. Actually, the factish Cisco was global, but played on American imaginaries like freedom and connectedness, resonating what Bellah called an essential tension in society (Bellah, 1985). It is more likely that the notion of ubiquitous social space has not taken into consideration the *place making* or construction of visions as they occur in situated locations. The social imaginary does not change into 'global' or 'local' overnight, indeed the habitus of place is quite persistent. In fact, globalization is occurring, but not at the rate with which the overeager theories (Beck, 2000) predict, and not with the same meaning. Theorists of this sort, in effect, extrapolate the trends they see among the pioneer users (for instance in superficial interpretations of the seemingly 'disembodied' organization of many hacker communities), and elite users (in global nomads who move in and out of international airports constantly). However, pioneer and elite users might not represent the way things are going, and might continue to be marginal practices, but that is a topic for future study.

Another reason why the strong globalization thesis fails could be that sociologists of globalization misunderstand, and

underestimate the importance of community. Durkheim's descriptions of how cultures have occasions of 'effervescence' (1915) and some scholars' insistence on face-to-face communication could be more important than they think.

The question of whether these visions are nationally inscribed also appears. We have seen that the Cisco factish, as well as the Cisco brand plays on American social and cultural imagery. As I noted in the introduction, some observers go as far as saying national brands are what constitutes people's image of nations these days (Beck, 2000; Lasn, 2000). Let us revisit our data in this light, and attempt a categorization. Thus, the typical American vision is Cisco's "Internet will change the way we work, play, live and learn", the Norwegian one is the following: "The Whitbread-regatta has shown us that our communication solutions can handle even the most extreme challenges. Now we look forward to meet your communication needs", while the typical Italian vision is the SMS commercial showing cell phones' displays stating: "I love you, stupid girl, have me forgiven?" The response: "I hate you, stupid, you are forgotten". Did you say we lived in a global society? We do not have to study semiotics for a long time to notice the difference in these statements. They say something about the different contexts the telecom carriers have in mind. Table 2.1 attempts to summarize an interpretation I make of the different mindsets of the marketing people, users and vision-makers in different countries.

Table 1. Visionary efforts in a comparative perspective

	Californian brand	**Scandinavian brand**	**Italian brand**
Visionary climate	favorable	good, but not recognized as such	variable
Characteristic vision	great scope	realistic content	romantic promise
Communicative logic	superficial	deep	intense
Nomadic location	The world	Atlantic Ocean	Tunisia
Vision pushers	Cisco, Microsoft, Oracle, Sun	Nokia, Erichsson, Telenor	Telecom Italia, Omnitel, Blu
View of telework	effective	regional politics	catching up
Bottom-up pushers	knowledge workers	everybody - through the practice of ICT	left wing activists, libertarians

Playing on these data, I will argue these aspects form social brands. Social because they are constructed and maintained in face-to-face encounters, brands because they are stereotypical images. These brands work as to reinforce existing stereotypes about national identity, self-hood, and cultural characteristics. But they are important to see. Since Californian, Norwegian, and Italian visions are different we are forced to think about why. Without a historical comparison, this is hard to do, but some mechanisms could be pointed out. My data suggests that people actively reinterpret visionary material that is 'out there' and ready for cultural consumption. Interviews show this is a tacit process, it occurs without an easy way to trace all the steps. On the other hand, many are aware that they are letting this happen, some even actively advocate visionary action. The social imaginary is made invisible by the tendency to globalize cultural discourses, and to look for the likeness rather than the difference in cultural expression.

Conclusion: Nomadic convergence

The relevant common ground between the visions in Cisco, Telecom Italia, and Telenor seems to be the nomadic theme. The key social imaginary of contemporary visionary practices is that of the nomad: a restless, mobile hunter and gatherer of information, network, and culture. But while the historical nomad, in essence, is without territory, or at least situates himself in constantly changing territories, these nomads are different. The Cisco nomad's territory is 'the world', the Italian one 'Tunisia', and the Norwegian one 'the Atlantic Ocean'. There seems to be a returning need to localize the nomads in their own mythical far-off universe.

While it still gives meaning to say we live with global practices because of the marketing of information- and communication technology, visions appear to have 'national' differences. The sociologists of globalization (Beck, 2000) must have us excused. The social imaginary of California is different from the Italian and Norwegian one and the difference is the following; the Californian nomad is a visionary thinker, presenter, and traveler. His world is high-tech, and his scope is the global market. But where he is global in technological scope, his expression, work style and reality is local. This is covered up in marketing, but only visible to outsiders, and

mainly to people outside the US. The Italian nomad is a romantic, leftwing global optimist trying to catch on to whatever seems trendy, multimedial and merry. The Norwegian nomad is a fisherman of sorts, a friendly, earthly, non-techy naivist. He is blue-collar, regionally defined, and engineered by technologists without fashionable language. In his Scandinavian version, this nomad is up-scaled with wireless, laptop and PDA, in stark contrast to the daily sauna that provides the ritual cleansing associated with nature. Scandinavian society is indeed a blend of nature, culture, and technology. The Californian visions are largely undisturbed by other countries' visionary production. Italians copy and reinterpret visions after their own liking. Norwegians read, watch, and digest foreign made technological visions, but still keep their own practices 'apart', somehow without expressing visions outside of a national romantic framework of nature, democracy, and simplicity. So, whether in Cisco, Telenor, or Telecom Italia, where the *figure* of the nomad is global in technological scope, his everyday expression is national, local, or even provincial.

The practice of globalization ideology occurs every day and not only among elites that we can blame. This is where ideological critique à la the Frankfurt school (Adorno, Horkheimer, and Benjamin) is misleading. We sustain visions by our own visionary practices, by the choices we make in our everyday life, we shape what the global means with our ideas of what the global is and what it does. Not only do we make technology our own (Lie & Sørensen, 1996), we also make globalization our own. However, it seems clear that even if technology is taking a larger and larger place in the everyday life of knowledge workers, their lives have different social imaginaries depending on what company they work in, and what country they live in. Imaginary practices seem to play a part in creating their 'paramount reality' (Berger & Luckmann, 1996).

Secondly, I have shown that if we are entering a society of globalization and technological change caused by the development of the Internet and related mobile technology there are certainly reasons why. Where most people envision a drastic future impact of technology on society, there is often an advertising campaign behind it. Or, there is careful visionary work by sociologists of globalization (Beck, 2000; Castells, 1996), expert visionaries (MIT Media Lab's Nicholas Negroponte, Wired magazine's Kevin Kelly), or corporate visionaries (Cisco's John Chambers, Microsoft' s Bill Gates, or

Telenor's Tormod Hermansen). But since we, the users of technology, are the ones who create, sustain and deliver the advertising, the core of the problem does not lie on the surface. Ads are, in this perspective, merely reflections of our selves.

We are bombarded by messages from the high tech sector daily. But rather than get confirmed the assumption that advertising only convinces the "already saved" (Christensen, 1984) we are in a situation where visions have become mainstream. They message is reinforced by everyday reality. We live our visions; we delve into them, enjoy them, explore and identify ourselves with them, right or wrong from the outset. And, we increasingly make them come true, just by the pressure we ourselves provide. Nobody foresaw the explosion of SMS messages in Norway. The classic Thomas theorem is true. What people believe sometimes becomes real in their consequences.

What we have is separate, but related visionary practices in the sense of a collective past-time activity of *place making*, making our own 'paramount reality' everyday as a hybrid of all our influences, and in accordance with our habitus, our predispositions of choice, and of cultural heritage. So far, that heritage, and the habitus it activates, is far from global. It might be worth contemplating why technology's rhetoric seems to get through in the end, even as our memory objects. The strength of visionary routines seems to evade even the most firmly upheld common belief, or the most sensible practices.

The key vision I analyzed from the outset has it the Internet has made social space ubiquitous. At first sight it seems like the vision is created by advertising, thus by large corporate players inherent in modern capitalism. However, it is not that simple. Most of us participate in the production of visions for where society is going. Visions are created, sustained and proclaimed by society itself. They are factishes (Latour, 1999). I have shown how modern organizations with its 'knowledge workers' interpret the visual and textual imagery of advertising and other visionary messages into their everyday reality, often refusing to reveal its fabricated nature. I find that even though most of us believe in the global discourse of 'change', there might be limits to the changes occurring. I analyzed these limits in terms of the recurring notion of place, constructed as a factish of old place and new space (virtual or other), a 'social space' of sorts with space-like configuration but with place born experiences. And this is

really where they differ, too: the location of experience. I argue the social imaginary, or habitus, of a place is constructed as the relationship with a developed social interaction pattern, institutional arrangements, and individual collective experience of 'daily life'.

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7. Appendix: Note on Methods

Due to the paper format of this dissertation, I want to clarify exactly what data the collection of articles appearing here is based on. First I will make some remarks on the general nature of my approach.

I discovered quite early that few studies of this kind were done before. Not only had I the intention of accessing an élite sample from a high tech organization (see the article on *Getting access*), but I also wanted to do a comparative study. While the approach was shaped by the circumstances, challenges of the field, and early research findings, for the most part I had the unstructured interview in mind. As should be clear by now, my approach differs in several respects from the traditional way such interviews are understood, but not more than is expected when one honestly examines 'what has been done', as apart from 'what I said I would do'.

For instance, part of my data emerged from fieldwork, and took the form of field notes (which I kept for most of these three years), part of it were traditionally semi-structured, tape-recorded interviews, and other sources like the Internet websites of companies I tried to access, or random encounters (on airplanes, in lounges, at parties, and informal gatherings), necessarily were of more informal nature.

The short story is that I have done 30 interviews in Telenor, 30 interviews in various US high tech organizations, a document and newspaper analysis on Italian high tech and advertisements, and 30 interviews with Norwegian policy makers, politicians, researchers, and regional firms (the latter originally done for a study of Regional Politics, the data for which were included in the *Getting access*-paper).

Data was collected between January 1997 and September 2001 at various sites in Norway, Italy, Great Britain, and the United States. The main method was unstructured interviews.

Since a combined effort to analyze the visions of technology companies and the work practices and knowledge procedures of such companies was largely unexplored in the literature, a qualitative approach was chosen as the fundamental starting point. This, of course, also reflected a personal choice.

Fieldwork - the exact practices undertaken

Fieldwork can be a great many things. Here, I have attempted to describe what I have done, so that the reader can get a picture of how my data emerged. I will start with a description close to the one given in the *Space over Place* paper.

Fieldwork to me meant to "feel the culture", to go out and socialise with knowledge workers, to approach venture capitalists, even to 'work' in Silicon Valley (I did some sporadic management consulting for a major hardware company). In short, I tried to gain a totality of impressions from California: weather, networks, information flows, tech updates, nature, scenery, car culture, work settings, and social life. One fascinating arena was 'dot-com parties' and mixers, a recent phenomena from San Francisco where the young, single, urban part of the New Economy labour force get together for free beer, a snack, and some weekday networking.

To observe the inside of the Californian knowledge worker culture, I used ethnographic methods like participant observation (taking classes in entrepreneurship, going to one-day courses for start-ups, fairs, exhibitions etc.). I also did interviews with start-ups, venture capitalists, dot.coms, and Human Resource Managers. A major rule for all my work was to focus on things that only could be accomplished on site (not virtually, or from Europe). Thus I spent a lot of time "hanging out" in and around knowledge intensive environments. Apart from the interviews I made company visits both formally and informally, and I talked to workers also outside of the 'regular work context', a distinction I came to believe had no real meaning. I also took courses at Berkeley, talked to top faculty and students, and used the impressive library. The Berkeley environment is an integral part of what "growing up digital" means in Silicon Valley and has a profound impact on the 'possible impressions' that give rise to entrepreneurial and academic aspirations. Here, I am indebted to the way Bourdieu (1996) understands the production of habitus as both 'structuring' and 'structured' practices.

Some firms I have been in touch with during these years were purposely targeted; others were recruited by snowball sample, or directly via my Berkeley affiliation. Qualitative data from these companies was collected through interviews with key personnel, workplace fieldtrips, and participant observation. In addition I interviewed five venture capitalists and one angel investor (individual investors, who often are former entrepreneurs who invest ”for fun”). In

addition, I have met with a large number of software programmers, engineers, entrepreneurs and commentators on a more informal basis throughout the year.

The data for the *Space over Place* paper was collected in 1999-2000 during my stay as research associate at University of California, Berkeley. A list of companies interviewed is provided further down this document.

Fieldwork in Italy

Specific care is here taken to describe the nature of my fieldwork in Italy. As described in the *Virtual Practice*-paper, access to fieldwork in Italy proved difficult. Hence, most of my work was done with available literature, websites, and newspaper advertisements. Only three informant-like interviews were conducted, some of which were outright "rejections". ("No, there is no way you can interview us about this"). A thorough literature review (in Italian) was done for this study, in which I went through most available written work on technology, visions, and high tech to be found in Italian bookstores and newsstands between 1999 and 2000. Additionally, some data was gathered as early as 1997. I have been to Italy several times during the period from 1997 to 2000, each time gathering additional data.

Data sources and data quality

I will now go through my data in some detail, evaluating the comparative quality and importance of each type of data used in the study. For simplicity, I have chosen to display this in a table format.

Table 1.1. Data sources and data quality

Data sources	Number of imputs	Field sites	Form, and Quality of data	Overall importance in the argument
Interviews	90	Telenor (Kjeller Campus, Telenor Mobile, Telenor Corporate), California, New York, Trondheim	Interview transcripts, tape-recorded, or as fieldnotes written during and after interviews	Key importance. This is the main method used.
Fieldtrips	10	US high tech companies	Variable; from organized field accounts to small hand-written impressions	Subsidiary importance, mainly to gain 'insider' perspective and mentality
Documents, Magazines, and Newspapers	100	(a) Telenor strategy documents picked up at various sites, (b) US high tech magazines, (c) Italian newspapers	(a) Very detailed, insightful, and thorough, yet sometimes 'skewed', (b) pointed, compelling, visionary, (c) significantly 'symbolic'	Subsidiary importance, yet used in initial phase of inquiry to focus my approach and research questions
Websites	500	Internet (company websites, discussion groups, webzines and online magazines)	Some data is part of the company brand, has 'official' phrasings	Orientational, yet key to analysis of company branding efforts and external knowledge management

Interviews

Since interviews were my main strategy of inquiry, I will here go somewhat in detail on who I have met with, where, and what type of questions were asked. First, I have to point out that I started with a relatively semi-structured interview guide, modelled on McCracken's (1988) instructions for grand-tour type questions, but a little more detailed. These were used for most of the Telenor interviews. Later, I found that this guide became more a hindrance than an aid to my interviews, and I soon came to adapt the guide to each target. Nevertheless, the guide developed provides a general idea of what type of topics have been explored.

Briefly, the Telenor interview guide has these topics: **Competence:** (1) personal background (2) tell me about your work, **Knowledge Networks:** (3) Contacts, (4) Who do you discuss with? (5) Who are you in touch with outside Telenor? (6) How do you keep yourself up-to-date? (7) What type of expertise do you follow/read? (8) What are the major challenges in your field?, **Visions ahead:** (12) Many claim we are entering an information- and communication society. What would you say characterizes this society? (13) what kinds of things do you envision in the future?, (14) ATT has the slogan "Be connected". What do you think of this?, **Visions of the Telecom Industry:** (17) How is the ICT-society formed by telecom companies? (18) What is the role of Telenor in this development? (19) What kinds of visions does Telenor work with? What is Telenor's brand?, **Nomade:** (20) About Nomade as a concept and a campaign. Would you say Nomade gives a specific impression of Telenor? (21) What importance does Nomade have for Telenor as a whole? (22) Are you fascinated by the Nomade concept? (23) Would you say this is a good vision? (24) Telenor also has more technologically oriented visions…One example is: "Everything over IP". What do you think of that?

For the US interviews a more tailored interview guide was used. In general, though, questions of this nature were posed: **Competence:** (1) personal background (2) tell me about your work, **Knowledge Networks:** (3) Contacts, (4) Who do you discuss with? (5) Who are you in touch with outside your own company? (6) How do you keep yourself up-to-date? (7) What type of expertise do you follow/read? (8) What are the major challenges in your field?, **Visions ahead:** (12) Many claim we are entering an information- and communication society. What would

you say characterizes this society? (13) what kinds of things do you envision in the future?, (14) ATT has the slogan "Be connected". What do you think of this?, **Visions of the Telecom Industry:** (17) How is the ICT-society formed by telecom companies? (18) What is the role of your company in this development? (19) What kinds of visions does your company work with? What is your company's brand?, **Nomade:** (20) About knowledge workers as nomads. What do you think of this? (21) What importance do knowledge nomads, or virtual work have for your company as a whole? (22) Are you fascinated by the nomadic knwoledge work, or virtual work concept? (23) Would you say 'work anytime, anywhere' is a good vision? (24)

Table 1.2. Overview of Telenor interviews quoted in the dissertation*

	Subjects**	Field sites	Themes covered
1	Per	Telenor Kjeller Campus	Personal profile, knowledge networks, sociological visions, industry visions, Telenor Nomade
2	Peter	Telenor Corporate	Personal profile, knowledge networks, sociological visions, industry visions, Telenor Nomade
3	Roy	NTNU	Personal profile, knowledge networks, sociological visions, industry visions, Telenor Nomade
4	Svein	Telenor Mobil	Personal profile, knowledge networks, sociological visions, industry visions, Telenor Nomade
5	Jørn	Telenor Mobil	Personal profile, knowledge networks, sociological visions, industry visions, Telenor Nomade
6	Jostein	Telenor R&D	Personal profile, knowledge networks, sociological visions, industry visions, Telenor Nomade
7	Geir	Telenor R&D	Personal profile, knowledge networks, sociological visions, industry visions, Telenor Nomade
8	Olav	Telenor Mobil	Personal profile, knowledge networks, sociological visions, industry visions, Telenor Nomade
9	Ravn	Telenor International	Personal profile, knowledge networks, sociological visions, industry visions, Telenor Nomade
10	Eve	Telenor	Telework practices in Telenor
11	Jens	Telenor Mobil	Personal profile, knowledge networks, sociological visions, industry visions, Telenor Nomade, UMTS

* In addition to these, 20 more interviews were conducted, but have not been directly quoted in the dissertation. Apart from this, 5 informant interviews of slightly less formal nature were conducted. For

brevity, I do not describe all of these in detail. Secondly, I have also done a focus group interview with Telenor. I met with 10 social scientists from Telenor R&D in March of 1999 because I was invited to give a lecture. Discussions there helped shape my understanding of the relationships between different groups at this particular site.

** Obviously, these are pseudonyms. Original names have been altered, in accordance with research ethics protocol. The exeption is where the interviewee explicitly wanted to be quoted with his name, or where he is responsible for the whole organization in question, and clearly has understood that he is interviewed in a public setting.

Interviews in the United States

Below I have listed the interviewees quoted in the dissertation.*

	Subjects**	Field sites	Themes covered
1	Sarah	Cisco HQ	Personal profile, knowledge networks, sociological visions, industry visions, Cisco environment, branding
2	Neil	Campsix, San Francisco	Personal profile, knowledge networks, sociological visions, industry visions, Campsix environment, branding, incubators, start-ups, Silicon Valley
3	Ames	Razorfish	Razorfish environment, visions
4	John	Cisco, Berkeley	Personal profile, knowledge networks, sociological visions, industry visions, Cisco environment, branding
5	Brent	Awarehouse, San Francisco	Personal profile, knowledge networks, sociological visions, industry visions, Awarehouse environment, branding, SoMa, San Francisco
6	Will	ATKearney	Personal profile, knowledge networks, sociological visions, industry visions, Silicon Valley
7	Linda	Armada Global, San Francisco	Personal profile, knowledge networks, sociological visions, industry visions, Awarehouse environment, branding, SoMa, San Francisco
9	Dan	Berkeley Incubator	Personal profile, knowledge networks, sociological visions, industry visions, Silicon Valley
10	Roger	McKenna, Palo Alto	Personal profile, knowledge networks, sociological visions, industry visions, Silicon Valley, Cisco

* The following is a list of companies I interviewed, but where the people I met are not quoted directly in the papers: The Design Company, Guru.com, Futureperf, Postcommunications, Scanaccellerator, 3220 Sacramento Street, Formfactor, Picostar, Santa Clara Software Business Incubator, Industry Standard, IBI, and It's-quick. Most of these are New Economy type companies (incubators, Internet start-ups, consultant firms, or software firms). In addition to these, I have met representatives for numerous other companies throughout my one-year fieldwork in California.

** Obviously, these are pseudonyms. Original names have been altered, in accordance with research ethics protocol. The exeption is

where the interviewee explicitly wanted to be quoted with his name, or where he is responsible for the whole organization in question, and clearly has understood that he is interviewed in a public setting.