Indigenous Women in Scandinavia and a potential role for ICT

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INTRODUCTION

From a distance, the Sámi Network Connectivity initiative (SNC) does not necessarily appear as anything but another technical research project with certain sci-fi connotations. It is aimed to create Internet connectivity for communications challenged terrestrial settings using a protocol currently being developed for communications in space. However, while being a highly technical project, SNC emerged from an unexpected setting: an Indigenous women's initiative to save their traditional livelihood from threats of social and economic drain and to create better opportunities for women and youth to remain within the traditional community. The first step towards the formation of SNC was taken in June 2001 when a group of women reindeer herders in Sirges Sámi Village in Jokkmokk, Norrbotten County in northern Sweden, decided to start a gender equality project, Kvinna i sameby (KIS).[1] To the Sámi, reindeer herding is an activity that serves not only as an economic base but also as a foundation for reproduction of cultural values. Already in the KIS planning stage, Susanne Spik, the project leader, contacted the Division for Gender and Technology at Luleå University of Technology, to invite scientific assistance from the early stage of the project. Luleå University of Technology (LTU) is the regional technical university for northern Sweden and is situated in the Norrbotten County Capital Luleå 200 km southeast of Jokkmokk. Promoting women's possibilities to remain in reindeer herding and the traditional Sámi community, especially social and technical conditions for work and business development were the focus in the discussions. An associated but separately funded project was subsequently formed by LTU researcher Maria Udén. A solution to the project requirements came from a guest researcher at the Computer Science Department, Avri Doria, an Internet systems architect. In the spring of 2002, after initial discussions

[1] English: Woman in the Sámi Village.

with members of the Interplanetary Networking Research Group (IPNRG) at the NASA Jet Propulsion Lab, she contributed the proposal which came to be referred to as Sámi Network Connectivity. With a decision to accept this project, the establishment of SNC as both a technical idea and a concrete gender based project became a prime goal for the cooperation between the women in Sirges and the scholars at LTU, and continued after the KIS project ended in December 2003. The SNC objective is to provide connectivity where other sources are not available, while making the local population part of the development of the technical system. In order to develop the technical solution space of SNC, the Sámi Network Connectivity proposition gained research funding from the Swedish national agency for innovation systems, Vinnova, for the period 2004 to 2006. This funding is distributed through the Vinnova program "New communication networks".

BACKGROUND

Being a technical project, it is not obvious how SNC relates to the understandings of the sex/gender and gender equality concepts, as these are maintained in women's movements and feminist theory. SNC is a result of a women's movement among the Sámi and as will be shown also linked to the current feminist movement in academia. More than a unified position of gender issues, the common motivating factor, shared by all participants in the SNC, is a shared appreciation of grass-root participation in technology development. To feminist researchers in science and engineering, formulating critique of their mother disciplines is not a sufficient goal. The vision and expectation is to be able to present theoretical and methodological alternatives. (Keller 1992, Mörtberg 2003, Trojer 2002) This has strongly affected the research scope of gender studies at LTU, where the presence of engineers, mathematicians, and systems and computer scientists has been substantial from start. The SNC project is one among other activities aimed at changing the relations between gender and technology, initiated in this environment. Internationally, the LTU

research scope is consistent with aims and considerations expressed by, among others, Evelyn Fox Keller. It is characteristic, however, that feminist researchers engaged in science and technology continue to acknowledge difficulties in taking the step from observation and critique to presenting functional alternatives to/within them. Keller (1992) put the question of feminist interventions in science and their possible success as follows: "In short, feminist theory has helped us to re-vision science as a discourse, but not as an agent of change. And it is this latter question that I want to press on now. Since it is demonstrably possible to envision different kinds of representations, we need now to ask what different possibilities of change might be entailed by these different kinds of representations?" (p. 76) Though over a decade has passed since Keller expressed these concerns, feminist methods for effectively acting as agents of change in science and technology are still barely developing, even in the field of Information and Communication Technologies (ICT), which have indeed generated a large body of feminist studies during the late 20th and early 21st centuries. Reasons behind this lack of progress are thought to be located in various social, cultural and economic factors; all of which affected by symbolic, as well as material connotations, of sex/gender. (Bratteteig 2002, Mörtberg 2003, Trojer 2002) In this respect, the significance of the networks between engineers/scientists and the individuals and organizations that request and make use of their products and results, the patrons, must not be overlooked. These networks tend to be male dominated not only on the experts' side, but also on the patrons' (Cockburn 1985, Keller 1992, Trojer 2002, Udén 2002).

CHALLENGES AND POTENTIALS

Sámi life style today, its challenges to ICT and the SNC solution space

Even if Sweden is indeed one of the world's most "Internet connected" nations, the districts of concern to the reindeer herders are not as well off in this respect. The level of service and

ICT access is significantly lower than in Swedish society at large. In 2002 The Swedish National Rural Development Agency investigated the infrastructure available in the Swedish Sámi herding communities, especially the summer lands. Among other reasons, the summer lands were chosen for the investigation as they are especially valuable for keeping the children's link with Sámi culture, and for both cultural and social reproduction in other respects. It showed that the majority of resident's camps in the summer lands have very little or no access to infrastructure including post delivery, telephone, and roads. (Glesbygdsverket, 2002) Given that Sirges and its neighbor Sámi Villages, to a large extent, operate in a large, 9 400 km^2, connected area of natural preserves and other protected areas, it is understood that installment of fixed infra structure such as major masts for mobile communications are not wanted. This area of wilderness is known as Laponia, and listed by UNESCO as World Heritage. To the reindeer herding Sámi in Sirges and surrounding villages Laponia is not wilderness, but their cultural landscape. Today, the Sámi are an Indigenous minority population incorporated within the Scandinavian and Russian national states, and their traditional life style is challenged by conflicting demands. Many of these conflicts stem from the fact that maintaining economic and social sustainability makes it necessary to be part of modern society, which puts demands on being, more or less, resident in a fixed location, while their traditional life styles, in particular reindeer herding, continues to require a more nature based life style and semi nomadicity. (Haetta 1993, Jernsletten & Klokov 2002) One basic assumption held within SNC, is that access to the Internet could, to a certain degree, enable resolution of these conflicts. In fact, a venue for innovation is opened as the notion arises, that ICT is not genuinely available on the premises of Sámi semi nomadism, as this notion challenges popular understandings of ICT as eliminating boundaries in time and space, making place and time irrelevant, being limitless.[2] Yet, this potential is not only a myth but materially

[2] This popular understanding has been frequently referred to in marketing, for instance in promoting laptops as enabling working from "any" location, e.g. from home, and also referred to in public policy documents. For

inherent in ICT, something which all of us who check our e-mail from hotels we stay at for a day or two, as readily as from our homes or offices can benefit from. Perhaps this potential is even more valuable to a nomadic population than to others. If participating in local politics (which is vital to a minority population), making use of the new options for distance education, consulting health care services, generally keeping up business contacts and specifically running e-based business concepts, would be possible from the grazing areas and in points of time adjusted to herding requirements, much of the strain on the individuals and on the community could be avoided. As herding is based on organic time and constant moving with the herds and the seasons, while the majority society is based on the mechanical clock and steady settlement, the buffer capacity of ICTs; their innate capability of changing the implications of time and place, carry the potential of making semi nomadism a more feasible lifestyle tomorrow than it is today. The connectivity mix in the regions where the Sirges herders operate is constrained both by availability and possibility. While there is a mix of data delivery opportunities, e.g. wired, wireless and digital television, in particular throughout the rims of the herding region there are vast areas where none of these delivery mechanisms are available. Furthermore the fact that much of the terrain is protected area means that neither antennas nor cabling can be installed. The SNC solution to this challenge does not offer real-time services. Instead, providing robust connectivity is prioritized. The idea is that mobile relays periodically travel human byways to locations where gateways to the Internet are available carrying data bundles that can be exchanged. Thus, connectivity is coupled to *presence*, relying on the movement and encounters of the population rather than being based on an even availability over a huge and periodically unused area. Current reports of the solution space include Lindgren & Belding-Royer (2005), Lindgren & Doria (2005), Lindgren et al (2005). Doria et al (2002)

instance, the Swedish Government's Proposition 1999/2000:86, "An information society for all" stated that: "IT represents a new base technology comparable to e.g. electricity. It is characterised by speed and interaction, and it is *limitless*" (our italics).

gives an overview of both technical and social impetus of SNC.

Women in the Sámi Villages and the potential role of ICT

When we present the SNC project, in almost every audience someone will ask why an Indigenous people, and especially its women, should want high-tech, ICT development. To understand the implications for the semi nomadic reindeer herders of Scandinavia it is necessary to first acknowledge that there are aspects of a needs and demands analysis that would turn out the same having any activity built on field work in focus, e.g. tour guiding and wildlife monitoring. For these, any computerized or web based system must be available in the field to genuinely be of use. Additionally, there are aspects of access to ICT that are specific for the Sámi reindeer herders as Indigenous people. These aspects tend to turn out differently between women and men. We have already mentioned that the reindeer herding communities are subjects of stress caused by conflicting demands from modern society and their traditional life style. A critical Sámi women's movement has reported how women are often those who have to take on major parts of this mediating labor, and how the very limited resources available to women, to fulfill the expectations, put them in a situation of strain. Reindeer herding has also become increasingly a masculine matter, in part as a result of this split of life of traditional life and modern society and lack of coherence between the culture and economic base on the one side, and modern structural organization and demands on the other. This masculinization is not acceptable from a gender equality point of view, as women suffer both socially and economically from it, and it also threatens the vitality of the culture. (Kråik 2002.) The vision of SNC is to be an active and positive part in bringing the potentials of ICT into use, in a contemporary re-establishment of traditionally based nomadism. One example of possible use of ICT to resolve the conflict between traditional and modern is the compulsory school system which, though it is valuable in so far that it provides necessary and valuable education to all

citizens, still has the specific disadvantage to the reindeer herding communities that it hinders children of the reindeer herding families from being present in the grazing lands as much as is needed to gain traditional knowledge. As a consequence of the need for the children to stay near the school in town, mothers' possibilities to migrate with the herds are limited as well. (See eg Ulvevadet & Klokov 2004.) If Internet based distance education were available, this conflict, the gendered effects of which are a based in traditional division of labor among the Sámi could be reduced. Thus Sámi women while enhancing a traditional identity could gain from high-tech development. This, however, is not an expectation free of reservations. Development of ICT for use in the grazing areas could as well lead to the opposite extreme; increased strain and further marginalization of women in the Sámi Villages. It is reasonable to assume that the chance for gender sensitive results of deployment of new means for communication rests upon the way in which women and men take part in development and employment. In this respect, the SNC process contradicts expectations on gender roles in the Sámi community as well as in Swedish innovation systems in general. Difficulties which women and minorities may experience in taking part in ICT development were among the issues particularly addressed by The Working Group on Internet Governance (WGIG 2005, pp 2-3): "One weakness of present systems is that people who are excluded today may be in that situation partly because their involvement is structurally hindered in more or less all "normal" partnerships for development within their country. This can often be the case for minorities and women. These groups will have additional problems when compared to other local groups, in developing Internet use and in benefiting from the ICT potentials to improve their quality of life. /…/ Even if other paths may be open, e.g. access to technical expertise, generating the resources needed for implementing change can be dependant on relations with the same authorities that in other instances do not acknowledge the disadvantaged group as legitimate partners."

FUTURE TRENDS

Apparently, being a high tech project, Sámi Network Connectivity emerged from an unexpected setting: an alliance between high-tech professionals, gender studies scholars and a locally situated Indigenous people's gender equality project. New and unexpected actors and alliances stepping forward are not unknown in ICT development. Rather, such events have been intrinsic and all together part of the process. The early development of Internet, including the steps which made it available to other than elite scholars and military, grew from a mix of well established and unexpected actors. (Castells 1996). Nevertheless, the significance of gender, ethnic identity and location has not been less in ICT sectors than elsewhere. At this point it is too early to establish that SNC is typical for a coming stage of technical and organizational innovations where yet more unexpected things happen and gender barriers and ethnic patterns are challenged. We can note is that SNC to a certain degree has been successful, even a remarkably successful endeavour. Yet, at start we envisioned technology transfer, with pilot development and deployment in cooperation with the requesting community. As it turned out, it has been more difficult to find resources for these activities than for the university based research. We did not expect this, as there are European Union structural funds and various national and regional funds allocated for the development of the remote northern regions of Sweden.

CONCLUSION

The Sámi Network Connectivity process represents a notable novelty in terms of technology development. Significant factors are the active role of women as patrons; these women's rural location, ethnic identity and explicit gender equality agenda; and the operational part played by feminist scholars. The novelty of the process opens a rich array

of research opportunities, including but not confined to representations and change in science, and the advance of alternative feminist paths for science and engineering. Not least, working in and from an alliance between women technicians and women patrons, exposes pre-conceptions, skills and knowledge gaps of our own as well as of other actors. Certainly we also note how structures may or may not support an endeavour such as ours. But the resources available to the SNC group have this far been allocated to the system development itself, and to building strategic alliances in order to reach our aims of user participation and technology transfer. In consequence, the positive research results achieved to this point primarily belong to the technical solution space. From the standpoint of feminist and gender theory we note how concepts of gender and technology, and specifically understandings of their relations, may be exposed and challenged in an action oriented endeavour such as SNC. In the case of SNC also concepts of ethnicity, location and tradition are at play.

REFERENCES

Amft, A. (2000). Sápmi i förändringens tid. Dissertation. Umeå University.

Castells, M. (1996). The information age: economy, society and culture. Blackwell: Malden, Mass.

Bratteteig, T. (2002). Bringing Gender Issues to Technology Design. Floyd et al (edts.) Feminist Challenges in the Information Age. Verlag Leske + Budrich.

Cockburn, C. (1985). Machinery of dominance: Women, men and technical know-how. London: Pluto Press Ltd.

Doria, A. et al. (2002). Providing Internet Connectivity to the Saami Nomadic Community. Proceedings of 2nd International Conference on Open Collaborative Design for Sustainable Innovation, 2002, http://www.thinkcycle.org

Glesbygdsverket (2002). Service och infrastruktur i samiska sommarvisten. Östersund: Glesbygdsverket.

Haetta, O. M. (1993). The Sami: An Indigenous People of the Arctic. Karasjok: Davvi Girji o.s.

Keller, E.F. (1992). Secrets of life, secrets of death: essays on language, gender and science. New York, London: Routledge.

Jernsletten, J-L. & Klokov, K. (2002). Sustainable reindeer husbandry. Tromsö: Center for Sámi Studies.

Kråik, M. (2002). Sámi Women Equal Rights – Yesterday and Tomorrow. Taking Wing Conference Report. Reports 2002:12eng. Helsinki: Ministry of Social Affairs and Health.

Mörtberg, C. (2003). Heterogeneous images of (mobile) technologies and services: A feminist contribution. NORA; 2003(11):3, pp. 158-169.

Lindgren, A. and Belding-Royer, E. M. (2005). Multi-path Admission Control for Mobile Ad hoc Networks. The Second Annual International Conference on Mobile and Ubiquitous Systems: Networking and Services (MobiQuitous 2005), July 2005, San Diego, USA.

Lindgren, A. & Doria, A. (2005). Probabilistic Routing Protocol for Intermittently Connected Networks, Internet-Draft draft-lindgren-dtnrg-prophet-00.txt

Lindgren, A. et al (2005). Probabilistic routing in intermittently connected networks. The First International Workshop on Service Assurance with Partial and Intermittent Resources (SAPIR 2004), August 2004, Fortaleza, Brazil.

Trojer, L. (2002). Genusforskning inom teknikvetenskapen: en drivbänk för forskningsförändring. Stockholm: Högskoleverket.

Udén, M. (2002). The impact of women on engineering: a study of female engineering students' thesis topics. International Journal of Engineering Education, pp 458-464, Vol 18, nr 4 2002.

Ulvevadet, B. & Klokov, K. (edts) (2004). Family based reindeer herding and hunting economies, and the status of management of wild reindeer/caribou populations. Tromsø : Centre for Saami Studies.

Vehviläinen, Marja (2002). Gendered Agency in Information Society: On located politics of technology, in Mia Consalvo & Susanna Paasonen (eds.) *Women and Everyday Uses of the Internet: Agency and Identity*, Peter Lang Publishing, New York, pp. 275-291.

WGIG (2005). Draft WGIG Issue paper on Social Dimensions and inclusion. http://www.wgig.org/docs/WP-SocialDimensions.pdf

TERMS

Innovation system. A network of organizations, people and rules within which innovative exploitation of technology and other knowledge take place.

Interplanetary Networking Research Group. A former working group within the Internet Research Task Force. Developed the bundling architecture for Delay Tolerant Networking.

IT, ICT - Information technology (IT) or information and communications (or communication) technology (ICT) is the technology required for information processing. In particular the use of electronic computers and computer software to convert, store, protect, process, transmit, and retrieve information. Source: www.wikipedia.org.

Sámi. The Indigenous people of Scandinavia. According to official estimations there are 70,000 to 80,000 Sámi.

Sámi Village. Grazing community whose members are entitled to let their reindeer graze within its area.

Working Group on Internet Governance (WGIG). Established by the United Nations Secretary-General in order to present a report "for consideration and appropriate action for the second phase of the World Summit on the Information Society WSIS in Tunis 2005."