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Indigenous futures and digital infrastructures: How First Nation communities connect themselves in Northwestern Ontario

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"Now […] if the Aboriginal People could […], retain their tradition, take the technology and go that way in the future. That would be good."
(Community Development Coordinator and Educational Director, Bearskin Lake First Nation, 2007)

For my first field trip to Northwestern Ontario in 2006, I decided to take the train from Toronto to Sioux Lookout instead of flying. This ride with "the Canadian", which connects Toronto and Vancouver, took me about 26 hours and demonstrated very vividly the vastness of Ontario. At some point, I could not believe that I have been spending more than an entire day on a train without even leaving the province. But finally I arrived at Sioux Lookout, Northwestern Ontario's transportation hub, where I would be working with the Keewaytinook Okimakanak Kuhkenah Network (KO-KNET), one of the world's leading indigenous internet organization.

After my first day at the office, KO-KNET's coordinator told me that he wants to show me something. So we jumped in his car and drove to the outskirts of the town where he stopped in front of a big satellite dish. Only through this dish, he explained, the remote First Nation communities in the North can be connected to the internet. I was pretty impressed, but had no concrete idea how this really works. So while the satellite dish was physically visible to me, the underlying infrastructure was not. During my stay, I learned more about the technical aspects of internet networks and connectivity, about hubs, switches and cables, and about towers and loops. And I learned that internet via satellite might look impressive, but is actually the last resort and the most expensive way to establish internet connectivity. I also began to realize how important organizational partnerships and collaborative projects are and what important role social relationships across institutional boundaries play. In short: I learned about the infrastructure which is actually necessary to finance, provide and maintain internet access and use. Infrastructure, KO-KNET's coordinator told me "really defines what you can do and what you can't do" (KO-KNET coordinator 2007). And this has fundamental consequences for the futures of the region's indigenous people.

Within this paper I am going to discuss digital infrastructures and technologies in the geographical and sociocultural contexts of indigenous Northwestern Ontario. By introducing the case of KO-KNET I analyse (1) how internet infrastructures act as facilitators of social relationships and (2) how First Nations people actively make their (digital) futures by taking control over the creation, distribution and uses of information and communication technologies (ICT), such as broadband internet. This study is part of a digital media anthropology project that was conducted for five years, including ethnographic fieldwork in Northwestern Ontario and in online environments.

In media and visual anthropology, anthropologists are, among other things of course, interested in how indigenous, disfranchised and marginalized people have started to talk back to structures of power that neglect their political, cultural and economic needs and interests by producing and distributing their own media technologies (e.g., Ginsburg 1991, 2002b, Michaels 1994, Prins 2002,

Turner 1992, 2002). To "underscore the sense of both political agency and cultural intervention that people bring to these efforts", Faye Ginsburg (2002a: 8, 1997) refers to these media practices as "cultural activism". "Indigenized" media technologies are providing indigenous people with possibilities to make their voices heard, to network and connect, to distribute information, to revitalize culture and language, and to become politically engaged and active (Ginsburg 2002a, 2002b). Particularly digital media technologies offer a lot of these possibilities to marginalized people (e.g., Landzelius 2006a).

Digital infrastructures for First Nations people

"[…] this place is so remote and small and away from the outside world. But technology is moving with fast pace around here."
(Community Technician, Keewaywin First Nation, 2008)

Indigenous peoples, networks and organizations were among the first users of digital media technologies, such as the internet, "to provide information from a viewpoint that may not have found a voice in the mainstream media" (Cisler 1998: 20, see also Polly 1998, Prins 2002). Because of the poor state of telecommunication infrastructure in indigenous territories many groups and communities have had to cooperate with non-indigenous supporters to start, what Kyra Landzelius (2003: 8, 2006b) labelled "outreach" initiatives via ICT including public relations and tourism management, sovereignty campaigns, liberation movements and common-cause partnerships. Indigenous "inreach" ICT related practices, on the other hand, are oriented towards an internal public. These inreach activities cover public services (e.g., telemedicine and online learning), cultural revitalization, reconciliation, pan-indigenous networking and personalized communication and self-representation. Such initiatives which are directed inside the communities have been made possible only by creating and maintaining local infrastructures to connect to the internet, for instance, again with the support and in collaboration with non-indigenous actors (e.g., Fiser 2009, Sandvig 2012).

Over the last 20 years, KO-KNET, which was initiated by the Keewaytinook Okimakanak (KO) tribal council in 1994, has been aiming to build digital infrastructures for remote indigenous communities in Northwestern Ontario as well as to provide different internet-related services such as telemedicine or e-health, online learning and videoconferencing (e.g., Beaton 2004, Beaton et al. 2009, Ramirez et al. 2003). Only about 45.000 people live in this region of the size of France on a land which corresponds to a political territory known as Nishnawbe Aski Nation (NAN). This area is home to 49 First Nation communities, each with between 100 and 2.000 inhabitants. The majority are members of Ojibwa, Ojicree and Cree speaking First Nations, residing mainly in remote and so called "fly-in communities" that have reserve status.

Living in a "remote community" in Canada means that this community has no year-round road access, and that it is generally north of the 50º parallel and/or over 50 km from the nearest service centre. Only during the winter months, when rivers and lakes are frozen, a network of winter roads connects the settlements with each other and the southern towns. During the summer months not only people have to travel by plane, also food and basic goods have to be flown in the communities, where they are sold according to their weight. Thus, a litre of milk or a sack of potatoes become expensive items. Depending on their size, communities have schools for children up to the age of 14, nursing stations for basic health care, grocery stores, churches, administrative buildings and

airfields. Smaller communities might have none of these. Water supply, sewerage, electricity and heating usually exist in the communities, but are operated according to the community's individual possibilities and needs.

"[…] like before K-Net came here with their internet service. […] We used to get disconnected a lot. […] Every time somebody calls you, you get disconnected with the dial-up. But like with K-Net, to me it was more advanced than dial-up and way better too."
(Community Technician, Deer Lake First Nation, 2007)

In the middle of the 1990s, the telecommunications infrastructure in Northwestern Ontario was completely lacking connectivity, computers and sometimes even phones. So KO's and KO-KNET's "vision that was to become realized [...] was of a First Nations controlled IP network that would ride atop existing leased terrestrial and satellite carrier infrastructure" (Fiser 2009: 123). KO-KNET actually managed to secure more and more funding, mainly by competing for provincial and federal project funds, to build the eagerly awaited digital infrastructures. The most important project, which resulted in a couple of follow-up projects, was an *Industry Canada's Smart Communities* demonstration project that was acquired in 2000 with a grant of CA$ 5 million (Fiser 2009, Ramirez et al. 2003).

Today digital infrastructures facilitate land-line and satellite broadband internet as well as internet cell phone communication, constituting thus the regional backbone for all internet-related services and programs. The actual backbone remains the internet connectivity infrastructure controlled, maintained and managed by Bell Canada from Canada's urban centres. KO-KNET is only leasing specific connections which are up to eight times more expensive for the remote First Nation communities than for urban population groups in Toronto for instance (e.g., Fiser 2009).

By simple definition "infrastructures are build networks that facilitate the flow of goods, people, or ideas and allow for their exchange over time" (Larkin 2013: 328). Infrastructure is not technology. In contrast to technology, infrastructure can be understood as "objects that create the grounds on which other objects operate" (Larkin 2013:329). These objects, furthermore, operate in systems. Infrastructure therefore is a system which enables the functioning of, for instance, technological objects and things. Infrastructure as the relation of things might be to some extend not visible – Susan Leigh Star (1999), for instance, argues that invisibility is one of infrastructure's key properties – but for Brian Larkin (2013) this is only partially true. Infrastructures are in many cases highly visible, like the KO-KNET satellite dish in Sioux Lookout, Larkin (2013: 336) speaks of "hypervisibility". This (in)visibility of infrastructure depends on individual situations and conditions and often gets mobilized for political reasons.

Defining infrastructure always means to include specific aspects and leaving other aspects out. And this is determined by "epistemological and political commitments" (Larkin 2013: 330). Placing the analytical focus on the system rather than on the technology offers, according to Larkin (2013: 330), "a more synthetic perspective" which also allows for including non-technological elements. This is of particular relevance when investigating the translational processes of system building. For Star (1999: 380) infrastructure is a relational concept that means different things to different people and which becomes "real infrastructure in relation to organized practices". Infrastructure is thus not a purely technical phenomenon. It also includes the social relationships people establish in the course of creating technical connections and networks. Infrastructures are therefore part of human organization (Star 1999, see also Pinch 2009).

The co-operations and partnerships with different stakeholders – from governmental organizations and the telecommunication industry to the local communities – enabled KO-KNET to develop into a regional social enterprise and to establish one of the world's most successful community broadband network models that is owned and controlled by indigenous people (Fiser 2009, see also Fiser & Clement 2012). This success can be measured by the number and the value of projects KO-KNET has been able to acquire and complete, by the established infrastructure in the communities, and by the initiatives which are following the KO-KNET broadband community model in other regions (e.g., Fiser & Clement 2012).

Adam Fiser (2009: 7) highlights in his study about KO-KNET the importance of governance which includes questions about control, ownership, collaboration and co-operation and which is therefore "paramount for the local negotiations of broadband deployment in communities". By putting the focus on the role of governance in ICT initiatives it is possible to reveal "an emergent and evolving communications-information infrastructure that mirrors the complexity of societies and parallels their historically contingent pathways" (Fiser 2009: 7). For Fiser (2009) a feasible internet broadband governance model has to involve governments, industry and non-governmental organizations. Such a model thus includes, on the one hand, "technological and economic actors as well as the social systems" (Fiser 2009: 37). On the other hand, such a governance model pays particular attention to the social relationships partners and collaborators establish and maintain. Thus, organizations applying such a model can be referred to as "social enterprises" (Fiser 2009: 36-37). KO-KNET, according to Fiser (2009: 39), is such a social enterprise because it includes the properties of being a "carriage level network of community networks, a system of governance, and a social economy organization".

As Larkin (2013) argues, and I strongly agree with him here, infrastructures are closely connected to conceptions of modernity and development as well as to imaginations, fantasies, desires and futures. By producing "the ambient conditions of everyday life" infrastructure also creates "a sensing of modernity". A sensual perception of what is modern, new and progressive (Larkin 2013: 336-37).

Indigenous digital futures and the mundane appropriation of technologies

Media technologies, particularly digital technologies, are at the core of many social transformations, sociopolitical developments and creative processes of innovation. Does anthropology, by investigating sociotechnological phenomena and processes for instance, help to understand how futures are imagined, made, hoped for and lived in present and recent past, as this panel proposes? How do new communication and bio technologies intersect with sociocultural, political and economic sites on the local and global level in areas Michael Fischer calls "public futures" (2007: 539)? For Paul Rabinow (2008) the projection of futures is used by societies to describe themselves, particularly in respect to technological development and innovation, I would add. The temporality of the future "only exists as what is probable or improbable" giving the present the possibility to assure itself that calculations about the future have been correct (Rabinow 2008: 59-60).

In discussing the case of the Tribal Digital Village (TDV) initiative in Southern California reservations, Christian Sandvig (2012) reminds us that digital infrastructure projects are expansive and pose many challenges to local and heterogeneous population groups. Public and official policies

concerning the funding and implementation of indigenous internet connectivity projects and initiatives often intend to reduce poverty, enhance education or create jobs in the indigenous communities. Such noble objectives and expectations are in many cases in contrast with people's everyday use of internet technologies, for instance; when they are actually used for personal entertainment, self-representation and individual social networking.

So what in particular the anthropological analysis of internet connectivity projects – not only in the indigenous context – show are the contradictions and the friction between what was planned to do with digital technologies and infrastructures, often following funding bodies' demands and guidelines, and what people then actually decide to do. This could also be interpreted as a conflict between (past) planning and designing and (future) appropriation and use. By employing concepts such as technology appropriation and (socio)technological change, we could "free us from the assumption that technologies always unfold in the ways they are intended to" (Sandvig 2012: 191). I will finish my paper by briefly discussing one of KO-KNET's most popular services: MyKnet.org.

"[…] So there will be people downloading movies or music. And that kind of slows down everything. […] there are a lot of people wanna use YouTube videos, a lot of people wanna do music over the internet. I mean ... personally speaking, I would like to do that. I would like to put some songs, my music videos on the internet somewhere."
(MyKnet.org User, Sandy Lake First Nation, 2008)

MyKnet.org is an open and commercial-free online environment which was set up around the year 2000 with the intention to provide in particular young First Nations people with a "safe and healthy on-line space" where they can design and develop their own personal web presence (MyKnet.org 2006). Today, different age groups all across northern Ontario and in some of the neighbouring regions of Manitoba use MyKnet.org, which continues to be a free homepage service exclusively for First Nations (Bell et al. 2012, Budka 2009, Budka et al. 2009). Many of the homepages and their content refer to the daily life of people in a world at the margins, where roads come to an end at the settlement's border and where friends and families are split up to attend school or to find work in the urban South. This homepage environment has become widely popular because it allows for maintaining social connections and creating different forms of self-representation.

But MyKnet.org has been also used to download and stream music, to share and copy lay-outs, to compete for homepage hits and website traffic and to bully each other by leaving offensive messages in so called "communication boxes" (cf. Budka forthcoming). Such digital practices have been leading to conflicts in the communities, sometimes even of physical nature, to the reduction of bandwidth and the suspension of users by the service provider KO-KNET and even to heated debates on the highest political levels about freedom of speech, control, power, education and language use on the internet. In summary, issues that nobody thought would emerge when MyKnet.org was developed and opened for business almost 15 years ago.

In the case of First Nations people in Northwestern Ontario digital infrastructures have become indicators and signs of economic development and technological innovation. That's why I – with many other visitors – was brought to the KO-KNET satellite dish in Sioux Lookout. Too long have indigenous people been associated with backwardness, not to be ready for the "information or network age". But KO-KNET's activities and activism proof that indigenous controlled and owned ICT initiatives can be highly successful. And this is also thanks to the many fruitful partnerships, collaborations and co-operations the organization has been establishing for about 20 years now.

Digital infrastructures are not only the underlying basis for "important services", such as telemedicine, videoconferencing or online learning, but also for a mundane service such as MyKnet.org. This service might not have a priority status for the funding agencies and not even for the providing organization, but obviously for the people who are deciding on a daily basis how to make use of digital infrastructures, technologies and services.

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