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**Valuing the social economy
and information and communication technologies (ICT)
in small remote First Nations**

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Abstract: Remote First Nations (Indigenous communities) in Canada are challenging contemporary colonialism with their effective use of information and communication technologies (ICT) supporting their local social economy. Out of necessity caused by scarce resources, the social economy in First Nations uses innovative ICT solutions to support required services, economic opportunities, and sustainable communities. The analysis of a 2014 online survey provides insights into the nature of the social economy in these unique remote communities and how their use of ICT is evolving as their local economy matures. A critical examination of local social enterprises and entrepreneurs through an Indigenous lens supports the resurgence of a healthy Indigenous economy in small, remote communities in Canada's far north. Emerging from 500 years of oppressive and racist colonial regimes, policies, and attitudes, First Nations remain resilient. They are determined to live their lives with dignity, respect, strength, and determination in their traditional territories. Following the teachings and wisdom found in thousands of years of a rich and vibrant history merged with and supplemented by modern communication tools, First Nations are sharing and protecting all their relationships with their natural environment and others.

Introduction

> *I bake/cook and sell things within the community for my own money. When I don't have money because I don't have a job, I use the internet to go on Facebook to sell the stuff I make.*
>
> KO community member (from online survey)

Indigenous communities in Canada are called First Nations because they are the original nations. Their rich history and vibrant economy existed for thousands of years, long

before the European settlers arrived and began their colonization efforts just a short 500 years ago. Today, remote First Nations are doing the decolonizing work required to maintain vibrant, contemporary, resilient environments for young people and their families. This paper demonstrates how their local social enterprises are developed and supported by the public and private sectors using information and communication technologies (ICT) effectively. We discuss how traditional values of collaboration and cooperation guide their co-existence in communities, on the land, and with all their relations. These values are strong, being practiced and supported daily by community leadership, elders, and social entrepreneurs.

Indigenous people, living and working in their traditional territories in Canada's far north, are using ICT in innovative ways to support their local social economies. Our previous research has discussed how many of the First Nations located in remote and rural regions of the country are creating and operating local enterprises and services using ICT to sustain local social institutions and economies (Kakekaspan, O'Donnell, Beaton, Walmark & Gibson, 2014; Whiteduck, Tenasco, O'Donnell, Whiteduck, Lockhart, 2014). The current research describes the local social economies in small remote First Nations and how ICT is supporting their development.

First Nations are doing the decolonizing work of building their local social economy within Canada's culture and society of confrontation and colonial practices. The 2014 report from the United Nations Special Rapporteur on the Rights of Indigenous Peoples, James Anaya (2014), highlights the challenges facing First Nations and Canada. Building healthy First Nations requires the same mutual respect and collaborative efforts that existed in the first 200 years of contact with European settlers. Correcting the damage created after the latest 200 years of colonial governance - resulting in the poverty and isolation of First Nations within Canadian society - is an ongoing struggle (Palmater, 2011; RCAP, 1996).

The five remote First Nations in northwestern Ontario collaborating in this study are members of the Keewaytinook Okimakanak (KO) tribal council. KO acts as an intermediary organization, providing second-level support services in key areas such as education, health, public works and administration (McMahon, Gurstein, Beaton, O'Donnell & Whiteduck, forthcoming). KO and the KO First Nations employ an e-community development model for their ICT infrastructure (Beaton, 2013; Beaton & Campbell, 2014). Social enterprises are at the core of the e-community development model. These ICT-enabled social enterprises create much needed new and expanded local employment; new learning, training and education initiatives; access to resources and services, communication and marketing venues; and many other opportunities for local enterprise and personal development (Beaton & Carpenter, 2014).

This paper is based on data about ICT use and local social enterprise activities from an online survey conducted in early 2014 with community members of the KO First Nations accompanied with an analysis of records of a KO project to support social enterprises

and entrepreneurs in remote First Nations, a presentation by an entrepreneur in one of the KO First Nations. Our study is a collaborative work between university-based and community-based researchers. The analysis explores the local social enterprise development work as well as the resources and opportunities supporting the social economy in these remote First Nations. The analysis also highlights the resources required to support the ongoing operation of the social enterprises and e-community strategies.

The Social Economy and Community Services in Remote First Nations

> *We need experienced people with good solid education experience background to run our schools. The schools are suffering because of lack of knowledge in provincial school system and no real classroom experience is there to back up the education authority.*
>
> KO community member (from online survey)

Jack Quarter, Laurie Mook and Ann Armstrong (2009) define the social economy as:

> "*an umbrella concept for the many types of organizations created to meet a social need but also involving economic aspects such as the payment of wages and benefits to employees, the purchase of supplies, and in some cases, the exchange of services in the market.*" (2009).

As suggested above, the social economy can in some cases include the exchange of services; the social economy in remote First Nations is one of those cases. The social economy built around services is integral to small resilient communities. In the small remote First Nations, community members work with not-for-profit or community organizations that operate as local social enterprises or cooperatives established to deliver services and products. The First Nation social economy delivers services addressing local social and economic needs and priorities.

Michael Lewis and Pat Conaty (2012) provide several alternative values and operational models closely linked to social enterprises and cooperatives that counter contemporary capitalism and consumerism. These alternatives to capitalism are rooted in First Nation traditional economic and community activities, as demonstrated by Simpson, Storm, Sullivan, Boreal Forest Network, & Canadian Centre for Policy Alternatives (2005). Research by John Loxley (2010) in First Nations in northern Manitoba highlights how local resources are used as much as possible to satisfy the needs and demands of the local population. The use of these local resources supports the economies of these communities; in this sense they are essential to the social economy in First Nations.

Creating essential services and opportunities within these remote communities requires a different approach that is often beyond the possibilities for private and public sector providers from larger urban environments. Within capitalism, if it would be profitable to

be doing business in small remote First Nations, then the private sector would be there making their profits. The reality in these small remote environments is that profits are small or non-existent; poverty is widespread and survival requires a cooperative and collaborative community approach to the successful operation of local enterprises. In this context, community services are delivered by local social enterprises and social entrepreneurs.

In non-Indigenous communities, governments raise taxes from citizens and businesses that are then used to fund public services. First Nations do not tax their citizens. Historical and modern treaties or other agreements to share some lands and resources support a government to government relationship between the colonial state and each First Nation. In this legal treaty / contractual arrangement, in exchange for sharing lands and resources, the Canadian governments provide funding to the First Nations to deliver local services. Education, health, infrastructure, housing, policing, water, electrical systems, telecommunication networks, lands and resources are just a few examples of the services at the core of the social economy in each remote First Nation. Local social enterprises are created by the First Nations as the means to operate these services.

However, as outlined by the recent United Nations report (Anaya, 2014), the Canadian government is not living up to its treaty obligations. The colonial state continues to under-fund these services making it difficult to deliver equitable services (Alfred, 2009; Assembly of First Nations, 2010; O'Donnell, Johnson, Kakepetum-Schultz, Burton, Whiteduck, Mason, Beaton, McMahon & Gibson, 2013; Palmater, 2011). Supporting qualified staff in small, remote First Nations is an ongoing challenge for local government and social enterprises.

The use of ICT is assisting to address some of these challenges for local service delivery. As noted by Gurstein, Beaton & Sherlock (2009):

> "*Service provision in Indigenous communities particularly for those in rural and remote locations has suffered from a range of financial difficulties and inappropriate design penalizing residents …. ICT and particularly broadband internet can overcome the challenges of remoteness and ensure equity of service access; an appropriate level of service quality; effectiveness and efficiency in service delivery; opportunities for participation in service design, delivery and implementation; as well as providing opportunities for communities to more directly benefit from service provision through local employment.*"

ICT supports the ownership and control of local social enterprises, providing local employment and financial resources from external sources to sustain the operation of these services. Investments in ICT support local schools, health centres, governance, research, lands and resources, policing, public works for transportation including the airport, roads, winter roads, electrical systems, water, wastewater, cable networks for TV, telephone and internet, and towers for radio and cellular services and other local

economic and social enterprises (Beaton & Campbell, 2014; Carpenter, 2010; Gurstein, Beaton & Sherlock, 2009; McMahon, O'Donnell, Smith, Simmonds & Walmark, 2010; O'Donnell, Perley, Walmark, Burton, Beaton & Sark, 2009).

The Remote KO First Nations

> *"Get better ways to upload money on the cellular phones .... using credit cards or debit cards rather than have to find the person selling these cards and then finding out there's none. We are so far away and we can't just go and buy one in Sioux any time we feel like it."*
>
> KO community member (from online survey)

Everyone working with the five KO First Nations discussed in this paper appreciates their unique environments. The communities have small populations: Deer Lake First Nation, the largest, has about 1,000 permanent residents and the other four communities - Fort Severn, Keewaywin, Poplar Hill and North Spirit Lake - have between 400 and 550 living in the communities. The language and culture is Ojibway (Poplar Hill), Oji-Cree (Deer Lake, Keewaywin, North Spirit Lake) and Cree (Fort Severn). First Nations have the fastest growing population of all demographic groups in Canada and the KO communities are part of this trend; almost half the population in each of the communities is under the age of 24 (Statistics Canada, 2010).

The communities are remote; there are no permanent roads in this part of northwestern Ontario, an area about the size of France. Visiting one of these communities requires getting on a plane. Daily flights operated by a First Nation owned airline (Wasaya Airways) connect the communities with the nearest regional centres, Sioux Lookout or Red Lake, towns each having about 5,000 people. The nearest big cities are Thunder Bay, Ontario (population 110,000), a four hour drive east of Sioux Lookout, and Winnipeg, Manitoba (population 630,000), a five hour drive west. Before airports were built in the 1970s and commercial flights to the communities began, float planes were using the waterways as runways; float planes continue to be used today for charter flights. All flights are expensive and most community members cannot afford to use them on a regular basis. The longest season is winter - snow usually sets in in November and can stay until early May. Winter ice roads across the lakes and through the rugged Canadian Shield now reach each of the communities for a short period during each winter, allowing fuel and materials to be hauled in by truck.

Fort Severn First Nation is Ontario's northern-most community, the site of the first fur trading post in Ontario established over 400 years ago on the Hudson Bay coast. All the KO First Nations are located along majestic river systems that connect the communities by water. The land is rich in wildlife, minerals and trees with the rivers and lakes providing abundant fish that is harvested throughout the year. The people share their traditional land and resources with forestry and mining corporations as well as tourists and the lodge owners under treaty agreements with the federal government. The oral

teachings provide a history of the people and their relationship to this beautiful part of Canada that places them here since time immemorial.

Living and surviving in the small remote communities in northwestern Ontario requires special skills and knowledge. Doing the work necessary to carve out an existence in this challenging environment demands an intense understanding of and relationship to the land and the natural resources everyone depends upon for their survival. Being connected to the land is a natural and critical component understood by those who choose to live in these communities (Alfred & Corntassel, 2005; Battiste, 2013; Beaton & Campbell, 2014; Corntassel, 2012; Kakekaspan, et al., 2014). ICT are a relatively recent communication tool used by the people to communicate with each other, support their land-based lifestyle and social enterprises, and share their stories and experiences with others (Beaton & Campbell, 2014; Gibson, et al., 2012; Kakekaspan et al., 2014; Molyneaux, O'Donnell, Kakekaspan, Walmark, Budka, & Gibson, in press).

The Development of the ICT Infrastructure in the KO First Nations

> *I mostly use the internet for work and work-related email also I use KNET mobile cell phone for only important phone calls.*
> KO community member (from online survey)

The KO e-community model is holistic (Whiteduck, 2010). In this model, broadband and ICT is a cross-sectorial network supporting the many essential community services and activities that make up the social economy (Kakekaspan, et al., 2014; Whiteduck, et al., 2014). The e-community is an appropriate social and business operational model in these small, remote communities that addresses local practices and realities.

The regional broadband network connecting these communities to high speed internet services is called the Kuhkenah Network (KNET). The KO tribal organization owns and manages KNET. In 2014, there are over 80 First Nations across Ontario partnering with KNET to deliver their local internet connections throughout their communities. The First Nations work with KNET to establish and sustain their local point-of-presence (POP) to the regional network and its partner service providers. Each of the KO First Nations distributes their internet service to the homes and organizations over their locally owned and operated coaxial cable network. Other First Nations distribute their internet bandwidth using a wireless network. Regional and local fibre optic networks are now being installed to further improve these services. Local technicians are employed by the First Nations and receive training and support from the KNET team (Carpenter, 2010).

The history of KNET has been described in previous publications (Carpenter, 2010; Fiser & Clement, 2009). In 1999, each of the five KO First Nations with year round residents made a $1 million commitment to build and operate their own broadband network. Two of these First Nations were still without basic telephone service in their community in 1999. By 1998 these two communities raised several million dollars for Bell Canada to

install and turn on telephones to their houses in the year 2000. The $5 million commitment by the KO First Nations resulted in their successful application in a national competition to be Industry Canada's Aboriginal Smart Community Demonstration project. Industry Canada, a federal government department, led this one-time funding program that provided almost $5 million to build infrastructure and capacity in the KO communities. The Keewaytinook Okimakanak Smart First Nations Demonstration project began in April 2001 and ended in March 2005. An important result of this commitment by the KO First Nations was the raising of millions of dollars in investments for local and regional telecommunication infrastructure in all the First Nations in northern Ontario and across Canada (Carpenter, 2010). Several innovative community-owned applications were developed and sustained during this period.

KO-KNET builds its broadband infrastructure in partnership with the First Nations and strategic partners. From 1999 to 2001, it led upgrades to digital radio, satellite and data services. It also supported the development of a wide-area computer network to connect Band office programs, health services and education services in each KO member community. Construction of First Nation cable plants connecting local buildings began in 2001 in the five KO member First Nations. There are now 24 First Nation-owned cable networks in northwestern Ontario working with KO-KNET.

In 2005, KO-KNET and two Indigenous partners in Quebec and Manitoba launched the Northern Indigenous Community Satellite Network (NICSN). This project has demonstrated that with the proper funding supports, a regional satellite network can be owned, managed, operated and maintained as a nonprofit cooperative (McMahon, 2013). In 2007, the NICSN group secured satellite bandwidth until 2019, with support from the federal government (Infrastructure Canada and Industry Canada) and in-kind contributions from their satellite provider, Telesat Canada (McMahon, Whiteduck & Beaton, 2013).). Fort Severn First Nation remains on the NICSN satellite network and the other four KO First Nations have recently been switched to a fibre broadband network developed in collaboration with the KO organization.

Social Enterprises, Community Services and ICT in the KO First Nations

> *What I like about these services is they're vital to our community. They have made a significant change in servicing our community members in certain areas like health services, cell service and among other programs that are being provided by KO. I highly recommend KO for their work and research that their doing and that they continue to do so.*
>
> KO community member (from online survey)

The KO organization is recognized as a leader in developing and sustaining First Nation-owned services using ICT. The resulting online services created new local enterprises with new employment and service opportunities in their communities and across the region. The core social enterprises operating in each of the KO communities are: KNET

(the community-owned broadband network described in the previous section) the Keewaytinook Internet High School (KiHS), Keewaytinook Okimakanak eHealth / Telemedicine (KOTM), the Keewaytinook Okimakanak Research Institute (KORI) and Keewaytinook Mobile (KMobile) (O'Donnell, et al., 2011)

KiHS highlights the effective use of ICT supporting e-learning in these remote First Nations (Potter, 2010). A community-owned high school classroom in each First Nation is networked with similar classrooms managed by a qualified high school teacher. KiHS provides community families with the choice of where their children can obtain their high school diploma. Before KIHS, the only choice for a high school education was to leave their homes and travel to a large urban centre. KIHS introduced a new facility (the classroom), a high school teacher, local classroom assistant, an ICT-enabled learning environment, operations and maintenance, and new locally-controlled learning experiences and opportunities in each First Nation.

KOTM is another important KO First Nation social enterprise using ICT-enabled tools and the additional support for the local health clinic and services. Introducing telemedicine and e-health services in the remote First Nations created many positive economic and social benefits across the region. Delivering innovative health services using ICT is generating several local new employment opportunities including the Community Telemedicine Coordinator and home and community care workers, as well as supporting existing health care providers in each of the First Nations. Being networked directly into the provincial health care system also comes with its benefits for patients who have to travel to access hospital and other health care services (**references here - I have some).

KORI celebrated 10 years of operation in 2014. KORI is operating in a KO-owned building in the city of Thunder. Programs, projects, contracts, shared operating expenses, and committed staff ensures funds are available on a year-to-year basis to sustain this important service. Identifying, training, contracting First Nation community researchers is an important KORI objective. All research in KO First Nations is coordinated by KORI staff who ensures the research and the products are owned and controlled by the KO First Nations. Articles, reports, findings, and presentations about the research are shared with First Nation community members and the leadership to ensure it properly addresses local needs and priorities. The community leaders are now lead authors in several published articles. Other community leaders are presenting the information and articles at national and international conferences. The information and publications' ownership and control remain with the First Nations.

Community-owned mobile telecommunication services became a possibility across the region in 2007 with a small demonstration project involving two small First Nations working in partnership with KO. Private, public and not-for-profit partnerships and investments resulted in 20 First Nations developing their locally managed and supported cellular phone service by 2012. KMobile, as the regional enterprise is called, is a full

cellular telecommunication service generating local and regional revenue for its operation and maintenance (O'Donnell, Kakekaspan, Beaton, Walmark, Mason & Mak, 2011). As a social enterprise, KMobile is providing a means for First Nations to own and access some of the financial benefits formerly only available only to the larger telecommunication corporations. This community-owned cellular network incorporates a billing system that allows K-Mobile customers to manage their own services and cell plans (O'Donnell, et al., 2011). Roaming agreements with other regional mobile providers makes it possible for KMobile users to travel and use their phones in other locations. Local towers and facilities are now making it possible for additional services to be developed in the communities.

In addition to KNET, KiHS, KOTM and KORI, many other core services in the KO First Nations use ICT to sustain the local social economy. Local public works operations include the development and maintenance of roads, electrical, water and waste water, airport, housing, public facilities, and heavy equipment. The operation and maintenance of these services are now using the network, mapping and inventory services, remote monitoring systems and other ICT tools to sustain and support their delivery. First Nation administration including governance responsibilities continues to be a major source of employment in these communities. The use of ICT supports the reporting and fund raising requirements within the administrative offices (Kakekaspan et al., 2014). Other operations such as the local cable system, radio and television, mobile phone service, videoconferencing, and public access sites or e-centres also use ICT. Streamlining these operations to adequately support their smooth operation within these environments is often a challenge but everyone understands and appreciates the reality of introducing new services in a relatively short period of time. Innovative uses of ICT are addressing many of these challenges.

The themes introduced earlier – innovation, skills development, a unique social economy, resilience, effective use of ICT, sharing of available resources, cooperation and collaboration - are all highlighted in the two case studies of the social economy.

Case Study 1: Owner-Operator Training initiative Supporting the Social Economy

By analyzing documents from KO's project, the Owner-Operator Training Initiative, we developed a case study of how social enterprises are supported in the KO First Nations (KORI, 2011). Building on existing KO services in their member First Nations became a strategic component for the training project. In January 2011 KO responded to a call for proposals from the Ontario government's Northern Training Partnership Fund to develop and deliver skills training to support small business development in the northern region of the province. KO proposed an online training project employing local youth in each KO First Nation and providing accredited skills training delivered by the Keewaytinook Internet High School (KIHS) emphasizing social enterprise development and operation. The proposal was successfully funded and the Owner-Operator Training Initiative began in April 2011 and ran until March 2013.

An important component of the two-year training project was raising local awareness that existing indigenous entrepreneurship and enterprises support the economic and social well-being of the First Nations. The project recognized that using local traditional skills to feed their families and community is successful and meaningful employment. Recognizing local traditional activities as employment challenges commonly accepted definitions of employment and business. In cities, hunting and fishing is considered a recreational activity whereas in rural and remote regions it is an essential activity for people who use the food to feed their families and supplement household income.

Youth worked with their KIHS teachers, their project leaders, local elders and mentors and other project participants, using the local broadband network connections provided by KNET to research and access resources supporting their business planning and operation. By taking advantage of existing social enterprises including KIHS, their KNET internet connections, and practicing traditional skills, the youth learned to appreciate and develop their personal skills and awareness about local opportunities. Recognizing, developing, and supporting local social enterprises and traditional work including hunting, beading, sewing, trapping, and fishing supports the economic and social well-being of the families and community. These activities and enterprises are often delivered using the local language and teachings. They ensure the First Nations continue to be places of choice for raising families and continuing the practices of the people who survived for thousands of years in this region.

Several regional business support organizations provide business mentorship and grants to youth entrepreneurs across Northern Ontario. The financial support still requires a bank account and social insurance number to be an eligible participant. As a result, many First Nation youth are unable to access available resources and existing regional networks. One project result is some of the organizations changed their criteria to accommodate the needs of these youth by offering virtual business mentorship by video conference, engaging youth through social media, and adjusting their grant requirements to include youth without a bank account. Youth are now self-identifying as social entrepreneurs and are seeking resources and support from their peers and these support organizations.

Another outcome of the Owner-Operator project was the celebration of a KO community elder as a local entrepreneur. The Thunder Bay non-profit organization - PARO Centre for Women's Enterprise - gave the 2011 Enterprising Women Award, Aboriginal Entrepreneur of the Year, to Fort Severn First Nation elder Adelaide Koostachin. KO nominated Adelaide a local entrepreneur who feeds her family using the resources available in her local environment. She heats her house with wood, and she teaches the youth the traditional skills that she learned from her ancestors. She is paid to guide, teach, and work on the land. After she learned about the award, Adelaide refused to travel to the city to accept her reward and instead sent a video to the awards

gala that showed her cutting up a caribou to help everyone understand her work and love of the land.

Case study 2: Small local businesses supplementing the social economy

As illustrated in the first case study, small remote First Nations have a unique type of social economy in which local traditional land-based activities are central. In addition, small local businesses also are an integral part of the social economy. There are few opportunities for full-time employment in these communities; local businesses, entrepreneurial activities, and traditional land-based activities supplement other sources of household income that is spent locally. Local small enterprises, such as sewing and crafts production, operated on a part-time basis generate new community revenue. This "mixed economy" supports individuals, families, and the remote communities through boom-and-bust economic times (Abele & Delic, 2014).

Local stores, hair dressers, tourist outfitters and guides, small engine repair, bed and breakfast operations are examples of enterprises that exist in these communities. Often these businesses supplement their operations with traditional land-based activities including hunting, fishing, harvesting, and trapping. With the introduction of social media, people are now selling their services and products including baked goods, moccasins, bead work, crops, etc. on local Buy and Sell sites. Innovative uses of available communication tools are a trademark of everyone who lives and survives in these remote environments.

An example of a successful local entrepreneur is Fort Severn First Nation member, Lyle Thomas, a co-author of this paper. Lyle is employed by the Fort Severn band office as the community ICT technician. The funds to pay for his salary are generated by the community cable / Internet service provider business. He is active in the community, mentoring young technicians, and putting his creative talents into his work to help others. The local TV station does announcements for community events. Lyle uses his graphic design experience to publish professional announcements the community is proud to share. Lyle also operates his clothing business - Warchief Native Apparel - from his office in the community. He uses ICT extensively for his business. On their Facebook page, the business is described as *"an underground Indigenous clothing line that promotes Native Culture with the elements of resistance and struggle."* On their Piczo.com mission statement site, the business is further explained as *"Warchief Native Apparel was created to give Native People young and old a true sense of pride and connection to their roots. Through original designs based on native culture we believe that we are helping to achieve this goal."*

During a small business presentation delivered recently by videoconference, Lyle began by providing the audience in Sioux Lookout with an overview of how he operates the business from Fort Severn. The workshop coordinator began asking traditional business-centric questions concerning hits on his web site and profit margins. When it was

pointed out to the coordinator that colonial business practices might work well in large urban centres but small Indigenous communities require a different approach, Lyle took control of the discussion and described in detail his international network of business partners who he works with to deliver his finished product to his customers. Other Indigenous workshop participants were impressed with Lyle's experience and the information shared recognizing the challenges and work required to support a successful business from a small, remote First Nation.

The KO Community Survey

> *For those parents who cannot travel to see their child who is in high school, there should be video, or polycom open to the parents. This gives them a chance to catch up on their child progress and if he/she is having problems out there. Not to lose that closeness between a parent and a child. Video should be open to them.*
>
> KO community member (from online survey)

In early 2014, we conducted a survey of KO First Nation community members. The survey is the most comprehensive ever undertaken with the members of these remote communities. Doing research in these remote parts of Canada is very challenging for both researchers and community members. Gratton and O'Donnell (2011) document the challenges involved in conducting research in these communities including the high cost of travel, significant time requirements, and challenges developing community partnerships. On the community side, it can be difficult to develop trust with researchers, given the long history of settler colonialism represented in part by educational institutions and research. Language is another barrier within these English-as-a-second-language environments. Having worked with the communities for more than 20 years, we have a good relationship with many of the people and all the communities involved with this research project that helps to overcome some of these obstacles.

The survey questions covered a range of issues, including feedback on the community social enterprises, use of local businesses and services, and use of ICT. The survey - delivered using an online tool - was a collaborative effort between the researchers and the Keewaytinook Okimakanak (KO) tribal council, KO staff, the KO First Nation community leadership and members. The online survey was launched at the start of February 2014 and remained open until the end of March 2014 (eight weeks).

The promotion targeted members of the five KO communities with year-round permanent residents. According to the latest government records (AANDC, 2014), approximately 1,450 eligible adults live in these five communities; of these, 209 started the survey and answered some of the questions. This represents an overall 14% response rate from the KO on-reserve adult population. Respondents represented a range of ages, from 18 to 69, with the majority 40 years or younger. More women (64%) than men (36%) were represented. More than 43% had completed less than a high

school diploma, about 19% had completed high school, and the remainder had some post-secondary education or qualifications.

The survey revealed that KO First Nation community members rarely leave their communities. For the question, how often do you travel to another community, 79% replied that they rarely or never travel to another community; most respondents who answered this question with little or no travel were women (86%). The high number of people who stay in their communities almost all the time underlined the importance of local social enterprises to the community.

Community Feedback on their Social Enterprises

> *KIHS is an option for students who cannot make it out of town for school due to homesickness, drinking, drugs and getting into trouble. It provides a safe environment for students to ensure that they pass their grade level.*
>
> KO community member (from online survey)

As previously presented, KO First Nations are supporting a number of local social enterprises in partnership with their KO regional organization. The online survey asked several questions that generated information and feedback about each of these: KNET, KiHS, KOTM, KORI and KMobile. These services and social enterprises were described earlier in this paper; each program operates and supports staff working in each local community.

Many of the community members' comments provide an endorsement of the social enterprises in their community, and include suggestions for future developments and requirements. Their comments also point to an increase in understanding and appreciation for ICT and its role in supporting these enterprises. These comments are found throughout the paper and in the survey information to ensure community voices are included, recognized, respected, and valued.

The survey revealed that most (82%) KO community members use the KO-KNET service often - daily or weekly. Most (87%) agreed that KNET is an important service in their community and that KNET should have more capacity and workers in their community (81%). More than half (62%) indicated they are willing to pay more for faster KNET internet service. In the comments about KNET, respondents made several recommendations including: "*should have a computer tech for our community, to fix computers;" "Training should be taught to full time employees how to use video conferencing;" "It would be awesome to have more faster Internet, more Channels on the community TV channels and We only have one Cable guy and he rarely goes to work."*

The statements and feedback concerning their Keewaytinook Internet High School (KIHS) provides useful information. Most people (79%) know about KIHS because a

member of their family is or has been a KiHS student. Many people (58%) agreed that KIHS students receive an excellent education. And 69% will likely recommend KIHS to someone in the coming year. Respondents left a number of important comments for everyone's consideration including: "*KiHS teachers need more support in our community. They arrive highly motivated and become discouraged because they are entirely independent in running their programs;*" "*Students need to be provided with transportation! They don't like to walk on the cold, cold mornings;*" "*Occasional motivation speakers, local and not local;*" "*Provide the KIHS classroom a larger space with better access to internet and needed resources.*"

The KOTM telemedicine service supporting a patient in a First Nation community to visit by videoconference or other ICT with a health professional in another community is considered a good alternative to visiting the health professional in person (72%). 60% indicated that telemedicine would be a useful service for them to use. There is a concern about the privacy of a telemedicine session for many people (53%). Overall people consider it to be an important service (69%) and 65% indicated that telemedicine services should be increased in their community. Many of the comments recognize the importance of telemedicine with statements such as: "*Telemedicine is very good for elders that can't travel much;*" "*This is important service especially to those that do not like to fly.*" Suggestions to improve the local service include: "*Workers need to promote more in community what they do. Get out more, and talk to others about this;*" "*train more than one person to operate the equipment;*" "*Scared to use services due to confidentiality issues with constant change of workers.*"

Although KO Research Institute (KORI) provides research, training and development support for KO First Nation programs and services from their offices in Thunder Bay, 39% of the respondents indicated they did not know about their services (10% indicated they use their services regularly). 60% indicated that KORI training workshops are needed in their community and 49% indicated that KORI provides an important service in their community. The comments about the KORI services provide some good suggestions for change including: "*Provide the reports to each customer of the services provided by KORI by email or even mail;*" "*They need a 8-12 week program for youth entrepreneurship focusing on e-commerce;*" *Advertise on facebook, if there is training in the next month or so, for people coming to the community, so people are aware of it in advance.*"

KO community members are actively using their community-owned cell phone network, KMobile, with 79% using it daily. 50% are KMobile customers and 58% indicate they plan to use the KMobile service in the next year. There is strong support for KMobile (78%) and its importance for the safety and security when being out on the land (68%). Many comments and recommendations were provided concerning KMobile service in the KO First Nations, including: "*Better long range phone communication system because cell service is limited to around the community;*" "*Stronger distance in service for cell tower for all cell phones...like 50 MILES not 30 KMS;*" "*For a person that doesn't use KMobile I*

still recommend very strongly to keep it going because a lot of people depend on it in the communities."

When asked about the service provided by the different KO services, there is an overall level of satisfaction with the support that KO is providing in their member First Nations. To the question, *"The last time I contacted KO I was satisfied with the services they provided"*, 83% agreed with the statement. 95% of the people agreed with the statement, *"KO staff should visit my community more often to discuss services with community members"*. For *"KO staff respond quickly when I have a problem"*, 77% agreed. Several comments left in different section of the survey did refer to the need for more information and communication between KO First Nations and the KO staff. This general feeling is reflected in the strong emphasis by many surveys requesting additional training and support services in their community.

Community use of their Local Businesses

> *A bigger push should be made to grow a local economy however small it is. Research all the feasible businesses that can be created/managed by members of the community and offer them for a monetary value for services rendered. Keep in the money within the KO/local community. I'm currently trying to figure what business venture to pursue, although a corner store is very attractive. I want to escape the dependence on the band for employment and I'd at least be able to employ 2 community members.*
>
> <div align="right">KO community member (from online survey)</div>

The daily use of the different local businesses provides additional information about peoples' engagement with the social economy. The most common activity is to go to the local or community store (39%), followed by the Northern store (37%), the school or other education location (32%), Band office (30%), Public Works (26%), Health Centre (24%), Airport (15% - people go to the airport to see who is coming in to the community and to get the latest news), Recreation (14%) or Police or security office (6%). On a daily basis, they also buy or trade items online from outside the community (12%), buy or trade for traditional food (9%), buy or trade crafts, services and items from others (6%).

When asked what changes to existing businesses or services are required, community members shared a number of recommendations including suggestions for other businesses or services that they would like to see in their community. Many of the comments addressed the challenge of supporting young people who are now staying in the community instead of leaving to attend school. Suggestions included: *"a restaurant or place for teens to go to hang out;" "More recreational services would be nice. I'll have something else to do on my Friday nights;" "Arena/complex - promotes healthier lifestyles;" "Youth Centre;" "a recreation area for our youth. Also maybe a coffee shop where we can interact with other community members in a more positive and laidback*

manner;" "Younger people in the community to hunt for people who can't hunt for themselves."

Many suggestions also described the need for locally owned and operated stores. One community member recommended *"A locally owned store would benefit the community and provide access to traditional food as well as an ordering location for large community events that can help with costs."* Others recognized the importance of local ownership to ensure the community benefits from the local revenue. This is demonstrated with statements such as having *"a local grocery business to bring in revenue to the band"* or *"local grocery store etc ... and kick the northern store out that money leaves our community"* or *"we need a CO-OP store!"* The local transportation methods is also recognized my many people with suggestions for *"mechanical services for ski-doos, atvs, and outboard motors"* or *"gas station"*.

Work and Regular Activities of KO Community Members

> *We need someone to teach the youth and kids about how to survive in the bush, about hunting, trapping, the old way of life, and how to get medicine from the land, what kind of plants to use, so many plants are out there, and our legends and stories from the past are getting lost. We need to teach our future kids about our traditions and culture and mostly our language.*
>
> KO community member (from online survey)

Sixty-two percent of the respondents indicated they work full-time or part-time in their KO community, including informal and unpaid work: 26% worked in education, 19% in a health-related position, 18% at the band office, 12% in the private sector, 10% were homemakers, 9% in land-based activities, 6% in public safety, and 32% indicated that none of these places described their work. There were 37 people who selected "other" and specified their job position with titles including land use planning, Ontario Hydro, winter road checkpoint, energy advisor, seasonal construction and housing worker.

When asked about doing different jobs and activities in their community on a daily basis, 76% of the respondents indicated they take care of children in their homes, 35% indicated they share skills and teach others, 24% do a sport or other activity outside of their home. Every day, 34% cook wild meat / local food and 14% are involved in hunting or fishing or trapping. Childcare services is a common need identified in the comments along with the need for training and education of traditional, land-based activities in the five First Nations.

Other social and cultural activities they engage in on a regular (daily or weekly) basis include: singing / making music (29%), telling / writing stories (23%), sewing, beading, painting or carving (20%). Many of these results support earlier findings from previous surveys concerning the use of social media (Budka, 2012; Molyneaux et al., in press) and the 2011 ICT survey (Beaton et al., 2012).

Their Overall use of and Experiences with ICT

> *For emergency situations [we need] cell phones that travel long distances when I'm out on hunting, fishing, and camping trips or working on winter road, touring people out on the land.*
>
> <div align="right">KO community member (from online survey)</div>

The KO organization integrates the use of ICT and their KNET network services in all of its work with the First Nations. Clearly the survey respondents are frequent and active users of technology. Almost all respondents (92%) report daily use of a computer (laptop, desktop, or tablet). Internet use for various communication purposes is high. Respondents indicate daily use of their MyKnet or Facebook social media pages (81%). Daily or weekly they send an email (71%, including 51% daily), watch videos online (69%); use online banking (67% - only 13% indicated that they never did online banking); share pictures with others (62%); update a website or homepage or blog they create (30%); or make video calls (27%).

Most community members have internet-enabled devices in their own home, indicating that they are widely accessible in the KO First Nations. Every day, most people go online at home (89%), at a workplace (53%), at a friend or relative's house (24%), or at the public access e-centre (6%). Many use their mobile device to go online daily (44%) through a wifi connection in different places in their community. Almost half (43%) indicate they are now accessing the internet using their cell phones, again through a wifi connection, including 39% using a smartphone.

Comfort level with information and communication technologies (ICT) is also high with almost all respondents indicating they are very comfortable or comfortable with a computer or laptop (94%); sending an email (91%); cell phone (88%); smart phone (79%); taking care of their web site (75%); videoconferencing and posting a video (68%). When asked what they need to use technology more effectively, the majority responded better/faster internet (83%). Other choices included a better computer (54%), a smartphone (51%), data on the cell network with better range (51%), training (47%), and bundled packages (44%). Only 26% of the respondents to this question indicated they needed someone to help them with the technology. Other examples of infrastructure requirements listed as a need include expanded community cable or wireless network to reach those outside the existing infrastructure and further cellular range to support those people out on the land who carry a cell phone for safety reasons.

Conclusions and Next Steps

> *I would really like to see or even start a wood cutting program where the wood is measured out properly, cut and chopped for the people who cannot do it for*

themselves. Also it would be nice if the wood cutters got some training on how to cut down trees properly and how to maintain their tools.

KO community member (from online survey)

In this paper we have described the value of the social economy and social enterprises in remote First Nations and how ICT is supporting these efforts and activities. Our analysis and descriptions of the Owner-Operator training initiative and entrepreneurs in Fort Severn First Nation, and of the survey responses by members of all the KO First Nations, provides evidence of innovation with ICT to support the local social economy. The five remote KO communities that collaborated on this research - Fort Severn, Deer Lake, Keewaywin, North Spirit Lake and Keewaywin - are examples of remote community resilience in the face of adversary.

The challenges of contemporary colonialism include poverty and underfunding of core services in remote First Nations. The KO tribal council, in its capacity as a regional intermediary organization, has been strategic in its support for the development of social enterprises to overcome these challenges. Significantly, the KO Chiefs supported the development of their regional broadband IT network – KNET – resulting in core social enterprises being possible in these small, remote communities.

The owner-operator project developed and implemented by KO, supported social enterprises and entrepreneurs in the remote KO communities. With the completion of the two year program in March 2013, KO started a new three year project, Bami'aawaso (Nurturing Seeds of Change - www.bamiseedsofchange.ca) that has ICT as a core delivery and support element. The training is delivered online using the KNET network and all project materials are in digital format and stored on First Nation-owned servers and ICT infrastructure. Bami'aawaso is a partnership with two additional regional organizations, Nishnawbe Aski Nation and PARO Centre for Women's Enterprise and is funded by the Ontario Trillium Foundation (KORI, 2013). The project is operating from 2013 to 2016 with the goal to raise the awareness of social enterprises so that more youth are working for themselves to feed their families while making a positive change in their communities. The project supports an accredited KIHS program where students learn how to create an effective social enterprise. The project will build a sustainable hub where youth can gather to share experiences and best practices with each other online. In addition to the high school course, youth can engage with the hub through video conference workshops, online gatherings, social media, and community visits. Economic Development Officers and youth mentors are engaged and are invited to participate in capacity building so that they can also push back on the western model of entrepreneurship and foster a culture of Bami'aawaso social entrepreneurship. First Nations are beginning to host their own craft fairs, catering cooperatives, beading circles, and Elder-youth teaching gatherings to practice and learn traditional skills, sell and barter their creations, coordinate supplies, and work together to develop the local social economy. Developing these enterprises and skills requires time and patience as almost 500 years of colonial practices are undone. The project recognizes that

decolonizing work required must be led and supported locally so the communities are safe places for future generations.

The information collected and presented from the online survey highlights the importance of local social enterprises and the effective use of ICT in the KO First Nations. Our analysis provides further evidence that social enterprises in these remote communities sustain employment opportunities and bring financial resources into the communities from both public and private sources. Developing, owning, managing and sustaining local infrastructure (roads, water, waste water, IT network, electrical system, etc.), the school, the health centre, the administrative offices, and other services using these resources is creating new employment opportunities and businesses to better serve community members. Maintaining and developing the local network and ICT tools supports all these enterprises to deliver the products, the reports, the management, and the skills required to sustain their ongoing operation. Our paper highlights how local social entrepreneurs and enterprises are demonstrating innovative strategies for supporting strategic development of the local economy and the services required by the growing population. These themes are also highlighted by many of the people who participated in and contributed to the online survey.

In addition to collecting research data, the online survey helped introduce community members to many of the services being provided by their regional organization, KO. The information obtained from the community members develops an understanding of many of the uses, needs, challenges, and opportunities about the use of ICT for learning, education, and skills training in these remote First Nation communities. The survey data identifies general trends that others can use in their own communities and in future research work. Reports summarizing the information are being prepared for face-to-face meetings and follow up interviews that will add to survey results that are intended to support local and regional developments.

Remote First Nations are challenging contemporary colonialism using innovative ICT strategies in local social enterprises. The collaborative research and paper identifies and shares the values being practiced and passed along to future generations. The study provides the communities with the information required to celebrate their successes and support local development. It replaces the familiar negative capitalist perspective with a positive contemporary Indigenous view of local social enterprises and opportunities.

A strong local economy provides choices for its citizens and young people about where and how they wish to access and share learning opportunities, establish social enterprises businesses and services, raise their families, and secure meaningful employment. A healthy community provides its members with the opportunities to innovate and contribute to their environments for future generations. As more people choose to stay in their community, new support facilities including recreation and

counseling services are required, creating additional employment opportunities and a stronger local economy.

ICT help overcome many challenges of remoteness and offer so many possibilities - from connecting community members out on the land with emergency services, to linking, in real time, residents from numerous communities for regional learning, to offering mobile health applications to community members in their homes – along with many others. The KO First Nations are demanding to be included in decisions and policy making, challenging the marginalization of their communities and history, and rising above the oppression imposed by capitalism on their lands and people.

Acknowledgements

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