Kuh-ke-nah International Indigenous SMART Communities Gathering

March 17-18, 2004

Final Report

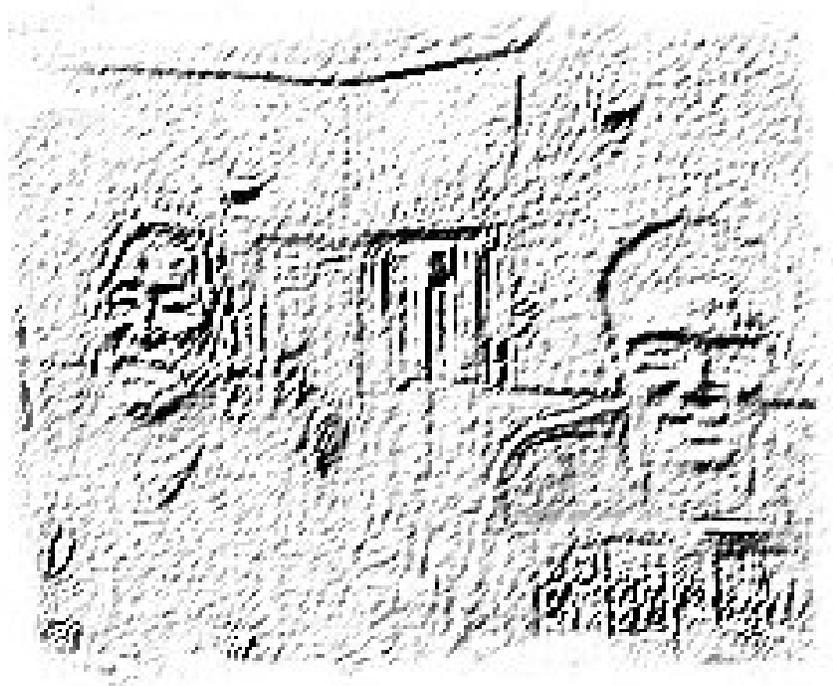## DRAFT – July 2004

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1.0   Conference Overview

Purpose

The Kuh-ke-nah International Indigenous SMART Communities Gathering provided a virtual space for bringing together Indigenous people from around the world to show how they used information and communications technologies. Participants demonstrated online how they are influencing positive change in their communities by addressing community needs, achieving community development goals, improving community services, supporting cultural expression and building new capacities.

Objectives

1. Organize and coordinate a virtual international conference to:
   a. Demonstrate Keewaytinook Okimakanak (KO)'s SMART project achievements;
   b. Share good practices in the development of feasible ICT projects;
   c. Workshop key ICT development skills using K-Net's[1] learning software;
   d. Foster connections between KO and international partners;
   e. Market KO SMART expertise.
2. Develop and implement a strategy to maximize international Indigenous conference participation.
3. Coordinate the development of conference materials, tools and platforms including a conference website and online conference products.
4. Prepare a report on the conference that is suitable for electronic distribution.
5. As a result of the conference, participants:
   a. are introduced to the KO communities and their SMART projects, achievements and lessons learned;
   b. identify trends and themes in the development of ICTs world-wide;
   c. purchase SMART services and expertise from KO.

Context

The Kuh-ke-nah International Indigenous Gathering was the culminating event of KO's SMART First Nations Project. Taking place entirely online on March 17 and 18, 2004, the conference brought together participants from all over the world, including North, Central and South America, Africa, Europe, Australia and New Zealand. Using videoconference and online tools, almost 30 presenters from KO, its partners, and five international partners presented their experiences using ICTs for Indigenous community development. More than 100 people registered for the conference. The Gathering project was managed by Brian Beaton and Co-Facilitated by Florence Woolner, John Rowlandson and Jennifer Morrow. A list of registrants can be found in the Appendix at the end of this report.

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[1] K-Net is the ICT department of Keewaytinook Okimakanak.

2.0 Description of Online Events

2.1 Opening Roundtable

The conference opening was an interactive videoconference moderated by KO Executive Director Geordi Kakepetum. The round table brought greetings and comments from KO partners in the SMART project.

Key Messages

Elder Leo Anishinabie of Keewaywin opened the conference with a prayer spoken in the Oji-Cree language.

Geordi Kakepetum
Executive Director, Keewaytinook Okimakanak, Balmertown, Ontario, Canada

Geordi Kakepetum described the role of the KO First Nations Council and pointed out that the SMART project has helped the organization improve services to their six member First Nations.

Geordi compared the changes in the community of Keewaywin from the 1990's -- where he as Chief worked to build infrastructure without the existence of major modern communications technologies like telephones -- to today where Keewaywin and the other KO communities are part of this virtual conference in which Indigenous people from around the world can share stories and experiences.

Geordi thanked all partners who have supported KO in its ICT development work. He reiterated how grateful the Chiefs and staff are for the support of their many friends and partners who work with them in this and all endeavours. KO has worked as a team with partners to progress as quickly as they have.

Geordi invited everyone to participate in the conference in whatever way they could and extended a particularly warm welcome to all international participants. He said that he looks forward to making and keeping new friends as a result of the conference.

Stan Beardy
Grand Chief, Nishnawbe Aski Nation (NAN)

Grand Chief Stan Beardy said that the Nishnawbe Aski people whom he represents have traditionally worn moose-hide moccasins for travel and meetings, but the new technologies are a kind of magic flying electronic moccasins that foster meetings like this conference where Indigenous people can visit each other from many countries. In spite of differences in languages and cultures, peoples can meet and learn from each other overcoming the limits of time and space.

The new technology allows remote communities like those in Nishnawbe Aski Nation to be connected '24/7' and to develop in their own way based on their own values.

Today's conference sees the use of this latest technology to carry on the historic practices of Indigenous peoples to listen with respect, speak with respect and share in a thoughtful and good way. It is an opportunity for NAN people to share with others in similar situations the stories of challenges and of successes worldwide.

Carl Seibel
Telecommunications Officer, FedNor, Industry Canada

Carl Seibel pointed out that the SMART project was made possible in part because the KO Chiefs undertook three to four years of ground work before they applied for the SMART project to develop the technology and see how it could be made to work in a remote community setting.

The government of Canada is pleased to see that KO has already assisted 20 other neighbouring First Nations communities to obtain many of the services available through the project.

Two significant accomplishments of the SMART project are: the Keewaytinook Internet High School (KiHS), which allows young adolescents to stay at home to gain their early high school education; and the KO Telehealth service, a video network that connects community-based patients to doctors and specialists that allows one in five interactions with a doctor to be done by Telehealth rather than face-to-face. The Telehealth network will now be extended to 18 more communities.

A majority of young people in KO and neighbouring communities are computer and Internet literate, and many of these youth create and maintain their own web pages. This is particularly significant in communities where students have been underachieving in reading and in academics.

The SMART project has also been cost-effective in that KO has produced sound initiatives based on community appropriate models rather than on making a profit or gaining a high profile. Because SMART projects have had real results, the government of Canada has been willing to take the risk of putting expensive and complicated technology into other small remote communities where there is not apparent technical expertise. There have been funding difficulties – not all departments could see their way to participate, but this was overcome by forming diverse partnerships in many sectors to ensure that the sound ideas developed by KO could go forward.

Val Blokowski
Executive Director, Education Network of Ontario

Val Blokowski indicated the Educational Network of Ontario (ENO) has partnered with KO for several years, working together to build what is now a world-class sustainable IP broadband network.

The SMART project has allowed for new and innovative ways to communicate and share information.

The K-Net videoconferencing bridge has changed the way the educational community in Ontario (teachers, students, educators) work and do business together. The SMART network and services reduce barriers and isolation for the education community of Ontario. ENO and KO have worked together on IP telephony, online forums, and web-based tools to make communities more effective and leading to broader choice of new learning methods and new community development approaches.

The network enables caregivers and public services to get together in online communities of mutual support and expertise. It provides new and creative ways of motivating and engaging learners of all abilities and ensures wider participation and fairer access. It continues to build dialogue across the province. These are the benefits that ICTs and the SMART project bring.

Margaret Kenequanash
Chairperson, Northern Nishnawbe Education Council

Margaret Kenequanash pointed out that the Northern Nishnawbe Education Council (NNEC) has used the Kuh-ke-nah network for video conferencing capacity to improve distance learning and for high speed Internet for students and teachers.

NNEC is very happy to see this new technology being used to help our students do better in school. They think every student is smart so they support the SMART technologies to help them achieve their goals.

These new technologies mean that distance is not the factor it has been in the past for First Nations communities and NNEC wishes to acknowledge KO for opening up this information highway for First Nations communities.

Colleen Martin
Executive Assistant, Nishnawbe Aski Development Fund

Colleen Martin said that the Nishnawbe Aski Development Fund (NADF) recognizes the importance of ICTs to the development of the economies of First Nations in northern Ontario. NADF partnered with K-Net to gain access to the Aboriginal broadband network which has allowed area businesses to have access to markets which are very distant from the remote north.

NADF has also used the network to deliver workshops to distance learners on community strategic planning and a conference to assist women in business.

James Adams
Zone Director, Sioux Lookout Zone, First Nations and Inuit Health Branch, Health Canada

James Adams indicated that in view of the financial and service delivery challenges present in northern health, the partnership with K-net has fostered impressive unique opportunities in the delivery of medical interventions and psychiatric services for remote patients. Fifteen years from now it will be interesting to see what possibilities develop given the technological developments of the past several years.

Tom Winitana
Te Putahi Whakawhiti Paronga (Traditional Learning Centre), New Zealand

Tom Winitana brought warm greetings on behalf of the Wananga (Indigenous people of New Zealand) and said that he and his colleagues in the Te Putahi Whakawhiti Paronga hoped to benefit from the conference by learning about the K-Net SMART model and applying it to their work in their territory.

Graeme Everton
E-learning Researcher, Te Putahi Whakawhiti Paronga, New Zealand

Graeme Everton expressed the appreciation of the Centre for the opportunity to participate, learn and contribute through the links provided (video, audio and online). They plan to use whatever they learn from the conference and apply it to their education program. This videoconference participation is one of the first opportunities they have had to use and demonstrate this communications platform and they are enthusiastic about the benefits of cross-continent communication without the need for travel.

Ed Lucier
Educational Consultant, Keewatin Career Development Corporation, La Ronge, Saskatchewan

Ed Lucier brought greetings from La Ronge, Saskatchewan, and congratulated KO on the use of this exciting and groundbreaking technology.

2.2 Day One Keynote Address: Managing ICT Development from the Ground Up

The Manager of the North Spirit Lake e-Centre delivered a personal overview of her work in ICT development in remote communities in Northern Ontario since 1995. Darlene Rae is a North Spirit Lake First Nation band member who is now the e-Centre Manager in that community. As the Manager she maintains the e-Centre's network and cable system, teaches community members about ICTs, and helps out with any repairs or installations in the community.

Darlene Rae

Key Messages

Darlene Rae described a 10-year journey that led her from work as a mental health counsellor to the position of SMART e-Centre Manager in her home community.

North Spirit Lake is a community of 400 Oji-Cree people located in a remote wilderness area of northern Ontario, accessible only by plane, winter road and now, as Darlene pointed out, through the new communications technologies. The community is governed by Elders and the Chief and Council and has only recently received water and sewer services and telephony in the home. People of the community spend a lot of time on the land following traditional activities. All adults are fluent in their language, although many of the children do not speak the language. People follow old ways but are open to new technologies (skidoo, radio, telephone) if they strengthen community and improve services.

In 1995 Darlene began her career as an ICT development worker at KO with no previous training or experience in the field. She administered the organization's first BBS text-based network learning on the job how to install, troubleshoot and fix first software, then hardware, and finally the network. She bought her own computer so she could figure out how to do things and was promoted within two years to K-Net's Program Manager. She focused at this time on administering numerous computer-mediated training programs.

Since 2001 Darlene has been the e-Centre Manager in North Spirit Lake First Nation, beginning with a single computer in the former nursing station building and developing the e-Centre to its present capacity of 10 computers, full broadband cable network in the community, four video-conferencing sites, ISP services and sales, installation and repair services. Darlene heads a four-person team to run the e-Centre consisting of herself, the Multi-Media Producer, Computer Technician and Librarian.

The e-Centre staff in North Spirit Lake use their video-conferencing capacity to troubleshoot technical problems at other e-Centres in their network. They also conference meetings, consultations and visits between relatives and patients who are being treated in another centre, between parents and students studying away from home, and between Elders from theirs and other communities.

Darlene's team are an ISP to approximately 30 homes in the village as well as providing network technical support to the Internet high school and the KO Telehealth Service. Other services provided include at 600-book library and free public Internet access.

Darlene described some of the challenges the e-Centre staff meet. Finding terminology and the means to explain ICTs to Elders and others is one challenge they face. Darlene said that showing Elders how an application works in ways that they find useful is the best way to involve them. She hopes to develop translations for applications in Ojibway to further facilitate their involvement.

Waiting for parts and services is another challenge. Because they are based in a fly-in community, the staff and their clients and customers must often cope with delays to get the required part or help to get things operating again. This is why the K-Net SMART model has supported the ongoing training of community technicians. Darlene pointed out that they have learned the value of regular maintenance and preventative troubleshooting and they always keep spare parts and back-up machines on hand.

Darlene is able to model self-learning because she has learned so much herself. Her advice to users and staff is not to be afraid of computers. She urges users to take them apart, ask questions and be patient with new learners as they were there once, too.

Darlene would like to see the e-Centre operated as a small business in the future. They have already begun by providing and expanding their ISP service. They would like to expand on the hardware and software sales and service, expanding to items in demand by community members. She feels that she and her staff can offer their skills and knowledge to other communities involved in ICT development. She also wants to expand the e-Centre as a book and online research centre where community members will have a choice of media in which to find out the information they need to live and work.

Darlene concluded by encouraging anyone who is not familiar with the technology to reach out and learn about it and how to use if for improving services in the community. She reiterated the importance of staying in touch with consumers, consulting them at every stage of development, as they know best how to use the technologies in their lives and organizations. She said not to be afraid of what you don't know. She hasn't been, and she has come a long way because of it.

Discussion

Another e-Centre Manager reiterated how important it is to demonstrate the technology to Elders and others who are unfamiliar with it. He said the initial video hook-up between one of the Elders in his community of Keewaywin and the Elder in North Spirit Lake went on for several hours, with the two old friends laughing and talking together. This made both Elders understand video-conferencing and support it for a variety of communications applications in the community.

Darlene explained the young people come to the e-Centre often and show growing facility in their use of the different technologies. They were reticent to become involved at first but have quickly learned to check e-mail, surf the net, and dial up friends or family on the video service.

She felt that the network had been useful for young people to keep in touch with family and friends in other places but that so far it had not helped them in the ongoing loss of language knowledge and use.

Carl Seibel of Industry Canada's FedNor program pointed out that many youth now have their own websites and that there are 40 million hits a month to myknet.org, an indication of the impact of this application on northern youth. Darlene is the K-Net administrator for the web pages and she works intensively and privately through e-mail with youth who put inappropriate content on their sites asking for and usually obtaining corrected content.

The Network Manager of K-Net, Dan Pellerin, pointed out that the community-based work of Darlene and her team and others like them throughout the network was vital to the success of the network, which could not be effectively managed centrally.

In response to an enquiry as to whether or not the experiences of northern community e-Centres was transferable to a southern context, Darlene said that she felt that rural and isolated people have a lot in common no matter where they live and as long as language wasn't a barrier, she thought they could learn from each other.

2.3 Community E-Centre Managers Forum: What the SMART Project has Meant in our Communities

This forum featured the KO e-Centre Managers who highlighted the impact and rollout of the SMART project in their communities.

Distance as a Barrier to Education in Fort Severn First Nation

Madeleine Stoney

Madeleine Madeleine Stoney is a Fort Severn First Nation band member who has been using information and communications technologies (ICTs) for nine years. As the e-Centre Manager, she manages the e-Centre, the cable system, and the community radio and TV stations, and works to model and support the use of ICTs throughout the community. Madeleine described the problem that Fort Severn's isolation presents to education in Fort Severn. Through the use of ICTs, secondary, post-secondary and informal education has increased dramatically in Fort Severn since 2001.

The Keewaytinook Internet High School (KiHS) makes use of the e-Centre, computers, and on-site teachers to enable students to complete grade 9 and 10 high school credits without leaving their homes, families, and traditional practices. This year, 13 Fort Severn students are enrolled in KiHS courses, compared to 11 registered in southern high

schools, half of whom are taking grade 11 and 12 courses (upper level courses are not yet offered by KiHS).

ICTs have also enabled post-secondary education. Ten adults are taking college and university courses online this year, a dramatic increase since 2002. And while the adults are continuing their education, children are broadening theirs, many of them dropping by the e-Centre after school to work on homework or research for school projects. Community children have also benefited from Science & Technology camps. The e-Centre staff has also provided ICT training for community members. Many homes now have computers.

Historical View of the Introduction, Installation and Implementation of ICTs into Keewaywin First Nation

Raymond Mason

Raymond Mason is a Keewaywin First Nation band member who has been using information and communications technologies (ICTs) for three years. As the e-Centre's Manager, he is in charge of the day-to-day operations of a fully integrated ICT facility and is available to answer questions about the use of ICTs in the home, workplace and community.

Raymond traced Keewaywin's very rapid communications development from about 1986, when the community was established, to the present. He described the transition from word of mouth communication in a community without vehicles or roads, to a battery-operated camp radio, to a single community phone for 150 people. The SchoolNet program brought satellite Internet to the school and, in 2001, residential telephones were introduced with state-of-the-art equipment. Complete residential and institutional Internet access was made possible in 2002 through the SMART project: "Keewaywin not only had access to the world, but the world had access to Keewaywin."

Raymond gave examples of Keewaywin's uses the Internet today for telemedicine, research, communication, education, Internet phones, and videoconferencing.

Community Networking in Deer Lake First Nation

Oscar Meekis

Oscar Meekis is a Deer Lake First Nation band member who has been using information and communications technologies (ICTs) for three years. As the e-Centre Manager, he maintains the e-Centre's public access site for people in the community who use the computers and SMART tools and promotes workshops and other online activities that happen in the community.

Oscar gave a technical presentation of the rollout and maintenance of telecommunications infrastructure in the community of Deer Lake First Nation. The introduction of high speed Internet has brought fast-paced changes to the community and new possibilities for business, banking, education, health and communications. He describes the technicalities

of the upgrade of cable lines, the maintenance of the cable system, and the network in action.

ICTs and Community Well-Being: Telehealth in North Spirit Lake

Darlene Rae

Darlene Rae is a North Spirit Lake First Nation band member who has been using information and communications technologies (ICTs) for seven to eight years. As the e-Centre Manager, she maintains the e-Centre's network, teaches community members about the ICTs, and helps out with any repairs or installations in the community. Like the other KO communities, North Spirit Lake faces enormous challenges when it comes to health care delivery. Its remoteness and small size exacerbate the lack of local medical or nursing staff, while the health problems that community members face are considerable. The challenge is to increase the community's access to health services while decreasing the travel burden involved.

Darlene defined the Telehealth solution as "moving patient information without moving the patient." In 2000, North Spirit Lake conducted a Telehealth Needs Assessment involving the whole community in interviews, presentations, demonstrations and feasts. Through the process, community concerns and health priorities were identified, along with community champions for Telehealth.

Telehealth is now in place in North Spirit Lake. It meets the community's health challenges but requires more promotion to increase its number of users. It provides ongoing training and support, and increases awareness amongst doctors and nurses of First Nation communities and health issues. The network is growing with Health Canada now a full partner in providing broadband Internet to the communities.

Discussion

One listener asked how e-Centres are affordable for communities. Now that the SMART program is winding down, communities will have to find ways to maintain their connectivity. Most e-Centres have plans to charge their residential, institutional and business customers for Internet access. North Spirit Lake and Fort Severn are combining their e-Centres with their libraries, to share costs. Deer Lake is already charging and has 42 homes connected out of a total of 100 homes: 40% is more than double the national average. With Telehealth, the nursing stations are a major user of bandwidth, so Health Canada will be paying half of the total cost.

Peter Radoll commented that Australian Aboriginal communities face many of the same challenges as the KO communities – remoteness, children going to boarding school and losing contact with their culture.

The question arose: would it make sense to create a private Indigenous network? So far the phone company's existing infrastructure has been used for most of the network. It's not clear how a private network would "shake down," but it's an "interesting concept."

One admiring listener asked how Oscar acquired such technical expertise. He replied that he learned everything on the job.

2.4   Worldwide ICT Community-Based Projects

Computers in Homes

Kasmira Warbrooke and Melody Hare of the Tūhoe Education Authority in Aotearoa (New Zealand), presented a North Island initiative to increase home-based access to personal computers.

Kasmira Warbrooke

Kasmira Warbrooke works as a Kairangahau (Researcher) for the Tūhoe Education Authority. Her tribal affiliations are to Tūhoe and Ngati Kahungungu. Kasmira has a Bachelor of Arts from Victoria University of Wellington with a double major in Social Policy and Criminology.

Key Messages

The presenters said a Memorandum of Understanding was signed in1999 between the Tūhoe Education Authority (TEA) and the Ministry of Education (MOE). This Memorandum established a partnership between the TEA and the Ministry which recognized that the TEA could further educational issues in a way that the Ministry of Education on its own could not. The Memorandum was the basis for the Computers in Homes (CIH) project.

A 2001 consultation found that Tūhoe parents were interested in upscaling their knowledge in ICTs. The Computers in Homes project, modeled on the Books in Homes initiative, targeted Tūhoe schools and their communities as an ideal setting for the project. The Tūhoe Nation of approximately 25,000 people is located on the eastern arm of the north island of New Zealand. There are a total of 13 schools within the Tūhoe territory, grouped in 3 clusters The presenters explained that the Tūhoe schools provided the ideal setting for the CIH project because the families and students of the region are considered to be situated in a low socio-economic area and Tūhoe schools are considered to be rural and this with other challenges impedes academic progress.

Computers and free Internet access were provided to 130 families for 6-12 months in the project. The TEA assisted with the provision of computers and funding for technical support and training, while schools provided the training venue, trainers and learners. Parents along with their children were given opportunities to succeed in keeping with the motto of the TEA : " 'whakatipu tamariki, whakatipu wh@nau' – growing children alongside their parents and grandparents".

The purpose of the research conducted as a part of the CIH project was to find out if the project increased participation in education and improved student achievement.

Key findings of the research included numerous comments by teachers and parents on improvements they noted in student achievement. Parents also noted that participation in the program facilitated enthusiasm and enjoyment of using ICTs by their children.

Also, teachers and parents commented on an improvement in student achievement as a result of the project. Some children showed a particular interest in the educational software that was preloaded on the computers.

The CIH project facilitated first-time access to computer education for many of the participants. This fostered enthusiasm amongst most of the participants who were eager to engage with a new computer easily accessible in their homes. The research showed that the computer did become the focal point of the house, a practical tool which allowed parents and children to support each other's learning.

The CIH project also facilitated intergenerational learning and exchange. It was natural and common for grandchildren and children to be working alongside each other and with aunts, uncles, cousins, etc.

The role of tuakana\teina learning is significant in Tühoe education; this represents the older person (tuakana) giving instruction to the younger person (teina) who awaits the instruction and follows it through. In the CIH program this role was sometimes reversed as the teina became the tutor for his tuakana or elder.

The research revealed that there was a need for more ongoing training support to improve\increase computer skills. Most participants had little or no experience with computers and so the challenge in the training approach is to design a program that catered to a range of different learning abilities.

The recommendations emerging from the project were as follows:
-   the CIH project should be continued in accordance with the subsequent recommendations;
-   more computers be allocated to engage a larger proportion of the Tühoe community;
-   ongoing training should be funded throughout the project;
-   a training program should be developed to support the different learning needs and abilities of participants;
-   a computer technician should be contracted solely for the purpose of CIH with support costs provided;
-   support costs should be provided to cover internet expenses, telephone line connections and installation fees;
-   projects should have modern high-specification hardware and software and include software that caters to Māori immersion needs.

Discussion

The Te Putahi Whakawhiti Paronga (Traditional Learning Centre) of New Zealand acknowledged the presentation and noted with interest the challenges that had been met. The Centre had also implemented a computers in home project, distributing 2000 computers to students.

Presenters indicated that the research conducted on the CIH has indicated that the presence of computers in students' homes had positively affected school results. Teachers did notice a difference between the results of participants in the project and peers who had not participated. Carl Seibel referred to an American study which echoed these findings.

The issue was raised of the financial burden experienced in a community to afford the hardware, connectivity and upgrades. The presenters responded that at present they are seeking more funding to supply these requirements in communities, but agreed that affordability is an ongoing issue with projects like these.

The training given to participants was the responsibility of the schools which supplied tutors to do the training. In most cases the initial training to parents and students was done by a school staff member who designed the process him or herself. The project provided funding for 14 hours of training with parents. In many instances parents came to the school for the 14 hours of training, after which they went home with their computers.

No one refused computers and in many instances the project did not have enough computers to satisfy the demand. After the initial 6 months, the computers became the property of participating schools which then decided whether computers stayed where they were or were passed on to other families.

Raymond Mason of Keewaywin pointed out that in his community families had to buy their own computers. The fact that many have done so is an indication of the importance of this tool to them. It was pointed out that the advantage of programs like CIH is that the project provided families who otherwise wouldn't have had an opportunity to have and use computers.

Using ICTs to Strengthen the Training of Bilingual Mayan Teachers: Lessons Learned from Enlace Quiché

Domingo Camajá Santay and Andrew Lieberman described the process and the results of efforts to increase the availability of and access to computer-based Mayan language resources.

Domingo Camajá Santay

Domingo Camajá Santay is a K'iche'-Mayan from Cunén, Quiché, Guatemala. He has a university degree in Pedagogy of Human Rights and Peace Culture from the San Carlos University and is writing his thesis for a degree from the Rafael Landivar University in Intercultural Bilingual Education. He joined Enlace Quiché in 2000 and has led efforts to integrate technology into the intercultural bilingual education process.

Andy Lieberman

Andy Lieberman is from San Francisco, California. He first visited Guatemala in 1990. In 1994, he settled in his wife's hometown, Santa Cruz del Quiché. From 1994 to 2000 he taught numerous English and computer courses. He has led Enlace Quiché since its inception in 2000. His professional interests include technology & Indigenous populations, virtual communities, integration of technology into the educational process, and educational software development.

Key Messages

Enlace Quiché's mission is "to help Indigenous peoples reach their potential through innovative uses of information and communications technologies." Enlace Quiché meets its mission through 20 Intercultural Technology Centres, capacity building, and an extensive collection of electronic teaching resources in Mayan languages containing culturally-relevant materials.

For example, their Mayan language children's software is an interactive, trilingual CD with which "a child as young as five …seeing the computer for the first time, sees it in his own community and is being told about it in the Mayan language… He turns on the computer and sees a scene that is familiar to him, hears it spoken to him in his native Quiché language, and he sees the text in Quiché." The Enlace Quiche model puts the person at the centre, with computer technology facilitating the person's development – "teaching with computers, not about computers."

Established in 2000, Enlace Quiché is a Mayan organization based in the Quiché department in the western highlands of Guatemala.

Discussion

Brian Beaton was impressed with the resource material and asked if any of it was available online. The resource material is all available through www.ebiguatemala.org and Enlace Quiché's website www.enlacequiche.org.gt

A question was raised on the applicability of the Quiché model in other languages and countries. The Enlace Quiche model is still getting to the point where it could be used by other groups in other countries. Other groups have applied some of the ideas. There is plenty of interest in Central and Latin America generally on what lessons learned and what resources they can use.

One listener expressed his appreciation of the presentation and especially the model showing the person at the centre and how technology is strengthening that person. He asked whether it was difficult to present this model to government. Enlace Quiche has been helped by a new national educational reform process that puts the student at the centre, so it fits well with the model. In general the government has been supportive.

Cultural Repurposing and its Issues

Peter Radoll

Community-based risks involved in digitizing Aboriginal cultural materials are highlighted through a discussion of projects that have focused on the use of new media to increase access to traditional and local-knowledge.

Peter Radoll, an Anaiwan descendent of the Aboriginal people of Australia, spent 11 years as a motor mechanic before attending university, completing Bachelors and Masters degrees in Information Technology. Peter is currently an Associate Lecturer at the Australian National University and is studying a PhD in Information Systems examining the adoption and effective use of ICTs in Australian Aboriginal Communities.

Key Messages

The size of Australia and the remoteness of interior and coastal communities presents a huge opportunity to adopt ICTs in compiling, recovering and sharing Indigenous knowledge. It also presents a number of as yet unresolved issues for Aboriginal communities. These issues include the cost of ICT implementation/connectivity and tool development, capacity development and skills development (including the appropriateness of traditional training approaches), access to content both in terms of where and by whom the projects are developed and in terms of who views what content under what conditions, and community and individual intellectual property issues.

Peter pointed out that communities cannot afford to inherit huge costs associated with traditional IT development projects. Repurposing should not be a financial burden on communities. Fees associated with connectivity development plans, database development initiatives and hardware procurement are often extensive and do not attend to the basic economic realities in communities. Similarly, the costs of training are often underestimated because educational levels are low to begin with and because of the cost involved in removing people from communities to deliver specific type of training. This situation is now acute as Indigenous participation in IT courses is on the decline in Australia.

A related issue is finding Indigenous people with sufficient expertise to manage and direct digitizing projects – particularly as they relate to cultural or territorial issues. For example, there is a three month waiting period between a deceased person's mourning ceremony and being able to view their image. Another example is having someone who

can determine when open access to material is possible and when access should follow longstanding protocols governing men's and women's business. Overall, there is a threat that material that is a community's intellectual property will be co-opted or commodified by non-Indigenous individuals or organizations. The IP law in Australia is not well understood and legal expertise is very expensive. The aim of cultural repurposing initiatives should be on securing community control over materials and the development of access standards for this data.

ICT projects in Indigenous communities should move forward with caution – they should be based on good plans that clearly identify scope and resources, both immediate and long-term, include legal representation and clearly identify training requirements and expectations. Further these projects must have community buy-in to ensure that the purpose of the ICT project is understood and that there is awareness of cultural issues and intellectual property problems. The best candidates at the moment are collections held in museums (in Australia and around the world). All of these elements should be included in a community access plan – a document that will clearly identify ownership and guide the development, use and access to the cultural material that has been repurposed.

Discussion

There were several queries about the community access plan idea – what it was, its elements and scope. It was described as a document that could guide projects and also as a new idea to bridge the separation between geographic and service jurisdictions (e.g. health, education) that is being worked out with a colleague in the northern territory in the development of a technology centre. Mr. Radoll highlighted that intellectual property issues are still poorly understood and that those with a good understanding of IP are often those who violate community interest in protecting and preserving cultural materials. This is most acute with relation to territorial claims. The digitization of maps and traditional Indigenous knowledge may be used by non-Indigenous interests against communities.

Telecentro TIC Calamarca

Mr. Lara describes a corporate partnership between AES Telecom and the isolated community of Calamarca that provides local access to ICTs. Armando Lara Godoy is an Electronics Engineer from Inquisivi, Bolivia. He received his degree from the Escuela Militar de Ingeniería in 1994 and has gone on to work for a number of communications companies.

Armando Lara Godoy

Currently, Armando is a Deployment Manager with AES Communications Bolivia S.A. AES is a telecommunications operator that provides long distance services, Internet access and local loops for data communications.

Key Messages

The isolated community of Calamarca was chosen by the Eco Pueblo foundation as a pilot project for social development. With donations of material and local labour, the initiative began with the building of a training centre and the launch of training programs, and improvements to the medical facilities and to the formal education system.

With this groundwork in place, the big step was begun – the establishment of the Telecentro TIC (Information Communications Technology Telecentre). This began with 25 computers and a web server system through which training was provided from preschool through high school and post-secondary programs. Then in 2002, the company AES Communications Bolivia joined the project, installing fibre optic cable through a long trench dug by the people of Calamarca. The cable provided 2 Mbps Internet access to the Telecentro TIC.

This has been an important project for improving quality of life in Calamarca. Most recently, four post-secondary courses have been introduced through the Telecentro. With the active involvement of a telecommunications company willing to use its infrastructure for social services, and the participation of community members, this solution could be extended to other towns in Bolivia. There has been no charge to the community for this project, but the people using the services are required to plant a tree and care for it for two years.

Discussion

One participant commented that he liked the idea of no charge to the people, and particularly the requirement to plant a tree. He suggested applying it in New Zealand to re-establish native trees. Bolivia is possibly the poorest country in South America so this kind of project needs much investment from companies and other countries – it is not self-sustaining otherwise.

Another participant inquired whether the altitude presents any technical challenges. The Bolivian Altiplano is a 4000 m high plain with many towns and communities. Most of the equipment has to be technically specified to work at higher altitudes and they need to take extra care with certain things.

There was an exchange in Spanish between Domingo Camajá Santay of Enlace Quiché, who asks about the role of promoting the Indigenous culture, the use of the equipment in education, and the role of the Bolivian government.

Linking Transitional Maasai Villages to the Global Community

Lekoko Ole Sululu describes the Siwandeti Computer Center and its education programs and partnerships. Lekoko Ole Sululu is Co-Director of Terrawatu, a non-governmental organization based in Arusha, Tanzania dedicated to bridging Indigenous and modern technologies for sustainable development. Ole Sululu was born and raised in a Maasai village in Ngorongoro, Tanzania.

Lekoko Ole Sululu

He worked as a wildlife safari guide for more than fifteen years throughout Tanzania, Kenya, Rwanda, Burundi and the Congo. He is fluent in Maa, Swahili and English, and can converse in six other Indigenous African languages. He has extensive knowledge of Maasai medicinal plants and traditional healing practices and was responsible for the installation of Terrawatu's first community technology centre (CTC) in Siwandeti village, Tanzania.

Key Messages

Like Indigenous people in many parts of the world, many Maasai villagers are "lost" between Indigenous and modern lifestyles. The ICT program is seen as a way of managing the changes.

With support from USAID and the World Affairs Council, the Siwandeti village acquired a computer centre in 2003 with 32 computers with Internet capability. The Siwandeti Computer Center serves primary and secondary school students as well as community members interested in learning about ICTs. It is run by "local people with global resources" – computer teachers are selected from the community and trained by Terrawatu. Users must pay a small user fee but the bulk of the financing comes from external donations.

Challenges include building awareness amongst community members about the usefulness of computers, finding time to teach the school students when computers are not yet part of the national curriculum, and the user fee, which is too high for some community members. The question, "how can ICTs be useful to people living a subsistence lifestyle?" is one that keeps arising.

Terrawatu's plans include expanding the computer centres to neighbouring villages and schools, linking the centres to schools in the US and in Europe, and designing a curriculum that will strengthen Indigenous culture.

Terrawatu is an Arusha, Tanzania-based NGO dedicated to bridging Indigenous and modern technologies for sustainable development.

Discussion

Unfortunately we have not been able to capture the audio for this presentation, so the very enthusiastic and lively discussion has not been recorded.

2.5   Day Two Keynote Address: Bridging the Broadband Divide: Strategies for Rural and Developing Regions

Heather Hudson

Dr Hudson presented a number of key strategies that can be used to bridge the broadband divide in rural and developing regions. Referring to representative ICT projects taking place throughout the world, she outlined the significant planning and policy issues inherent in increasing broadband access to developing communities.

2.6   Keewaytinook Okimakanak SMART Case Studies

K-Net is a First Nations owned and operated network services organization that has pioneered the use of ICTs in remote First Nations and the lead organization in the SMART First Nations demonstration project.

The K-Net Story: Building SMART First Nations

Brian Beaton

Brian Beaton traces the growth and development of K-Net over a 10-year period. Always grounded firmly in the vision of the communities' leadership, K-Net has grown by trying new things and sharing their successes. Brian Beaton is the Project Leader of KO's Kuh-ke-nah SMART First Nations demonstration project. The K-Net program began in 1994 under the direction and vision of the First Nation Chiefs. The SMART Communities project began April, 2001.

Brian oversees community and regional network planning and implementation activities; financial, project and personnel management; and liaison efforts with all sectors. He is a director of the 807-Network Community-based Network (CBN) in Thunder Bay. In January 2001 he was asked to sit on the National Broadband Task Force which was tasked with mapping out a strategy to deliver broadband services to every community in Canada by 2004.

His background involves a number of community development, system-management, and wide area team-building initiatives. His applied experience implementing both Contact North and the Wahsa Distance Education High School highlight his personal commitment to community-driven delivery strategies and outcomes-based approaches to project leadership. Brian has an intensive and concrete knowledge of community needs and issues and has worked extensively with local and regional stakeholders to design and

implement appropriate First Nation driven telecommunications partnerships and solutions.

Key Messages

K-Net is grounded in a vision by First Nations leadership in the KO communities to use new information and communication tools and technologies to improve the social and economic well-being of their communities. K-Net services began as a community bulletin board and text only training system to become the most advanced First Nations broadband network in North America. Introducing ICTs has been a process of trying new things based on community need and sharing what has been learned with other First Nations.

K-Net stands for Kuh-ke-nah – an Oji-Cree word that means everyone-together – and this is a core value for the organization. This value has been key to the development of good partners interested in making access affordable and responsive and showing respect for community needs. This level of partnership is always important, but especially so in a territory that is as large as France – and a territory that is rich in Indigenous history and achievement.

Over the course of more than 10 years, K-Net Services has worked with communities to accelerate the adoption of ICTs. In communities like North Spirit Lake and Keewaywin, Internet access preceded telephony – an innovation that community members adapted to without problem. This network has been the backbone for introducing health, justice, economic development, training and database applications. Organizationally, K-Net has incorporated lessons learned implementing ICTs to assume national and regional management roles such as the National Satellite Initiative and the First Nations SchoolNet Regional Management Organization consortium.

As Industry Canada's SMART First Nations pilot project, K-Net has installed advanced infrastructure in each of its communities. Local Kuh-ke-nah e-Centres provide facilitated access to ICTs (PCs, videoconferencing, accessible workstations) and are a model for other communities to introduce and support ICT users. Regional services like e-mail and web page development have demonstrated a significant demand for ICT services among First Nations. K-Net is committed to sharing its expertise and delivering e-services to Indigenous people.

Discussion

The discussion focused on uses of broadband technologies in First Nations settings. GIS applications and territorial mapping initiatives were identified as examples. The work by the Fort Severn First Nation, using ICTs to record traditional activities, record Elder's memories of land claims, and to document grave and settlement sites were discussed as a complementary way to establish territorial claims and boundaries. The discussion turned to the value of developing ICT tools that could be adopted by other First Nations who have similar aims and/or needs. This way funding partners are able to make one

investment that will have a broadly based benefit for First Nations. Similarly, discussion addressed the value of community-based Internet access as part of the research process – for example, access to nutrition information, access to background reports, funding opportunities for local initiatives – and for connecting with other regional First Nations that are separated by long distances.

Keewaytinook Okimakanak Telehealth

KO's Acting Health Director described how the organization has responded to community need for improved access to health services and health training by building a regional Telehealth partnership. Penny Carpenter is a Lac Seul First Nation band member and has been working with KO for more than ten years. As the KO Acting Health Director in Balmertown, Ontario, Penny works with a team of health professionals to develop and support community based health programs and services.

Penny Carpenter

Key Messages

Keewaytinook Okimakanak Telehealth developed from community-based need and direction to use information and communication technologies to improve access to health services and health training. The need was identified as part of KO Health's ongoing engagement with communities. KO Health has coordinated Telehealth development as part of its commitment to community health planning – the focus of which is to identify needs and solutions among community members.

Design of the Telehealth service was based on community realities and made possible by the implementation of a broadband network service in each of the five KO communities. A small core of staff are based at the KO offices (a regional Telehealth coordinator, a Telehealth educator, scheduler and program manager). This staff coordinates services and provides ongoing training for community Telehealth coordinators in each community.

The benefits of the Telehealth program have been focused in the following areas: reduced travel burden, increased access to specialized health services (this includes allied health professionals as well as physicians), transportation savings, access to online tools for health staff, online health education, reduced isolation for health workers and the development of positive service relationships. The primary challenge is to secure funding as a program – largely a matter of being able to demonstrate that Telehealth achieves policy-based outcomes and complements existing levels of health service delivery at the community level.

Discussion

Discussion focused on the expansion of the original five community pilot projects. Beginning in October of 2003, KO Telehealth began to migrate the service throughout the Sioux Lookout Zone – effectively increasing the size of the Telehealth program to 25

First Nations, the Balmertown Telehealth Hub and the Sioux Lookout Menowaywin Health Centre. This initiative is a partnership with NORTH Network, the Primary Health Care Transition Fund, FedNor and the Northern Ontario Heritage Fund Corporation.

Keewaytinook Internet High School

A presentation about the Keewaytinook Internet High School (KiHS), a regional online high school that delivers Grade 9 and 10 Ontario accredited curriculum in 13 First Nations communities.Freda Kenny has worked with KiHS for the last two years. Freda is the KiHS vice-principal and also the classroom Mentor in Keewaywin, Ontario, where she teaches Individual and Family Studies.

Freda Kenny

Key Messages

KiHS is a true educational partnership among communities, Indian and Northern Affairs Canada and the Ontario Ministry of Education. Currently, the project is funded as a five year pilot project in 13 regional First Nations. Each community provides a learning centre/classroom where a teacher/mentor is employed. If there are more than 15 students enrolled in a community, a classroom assistant is hired. Learners complete OAC course materials that have been repurposed for online delivery. KiHS has adopted a four semester system where learners complete two courses per term. Local teachers guide and support learners and also teach courses across the network. .

KiHS was designed as an interim step for learners who are not ready to move from their communities to large urban-based high schools. Because most First Nations are small, children must leave home after Grade eight to attend high school. Those who are not able to make the adjustment often return home and never complete their high school diploma. The KiHS model gives these learners an opportunity to complete their Grade 9 and 10 course material in their home community and creates a bridge to advanced learning. Student enrolment is growing steadily. This year, 143 students are enrolled in KiHS. It is estimated that these students will complete 250 course credits.

Online education facilitates both hands-on skills development and diffusion of ICT innovations. In addition to completing course material online, teachers incorporate projects that have to be completed using local materials. Similarly, learners develop a thorough understanding of keyboarding, use of word processing, database and multi-media software, and gain experience using digital still and video cameras. These hands-on skills are coupled with a solid understanding of how to find valid information on the Internet and develop their literacy and numeracy skills.

Discussion

Ms. Kenny related her personal experiences as a KiHS teacher in Sachigo Lake and in Keewaywin and described the interaction with students and families that was possible

because she was living and working there. This experience has reinforced the importance of on-reserve support for ICT initiatives, particularly in education.

There was also discussion about the development of online supplementary programming in science, mathematics and English as a way to better prepare learners for the demands that high school makes. These are now being offered throughout Ontario. In the KiHS communities, these courses allow learners to experience online learning and have shown themselves to be a good recruitment tool for Grade 9 and 10 learners. It is unclear whether KiHS will be able to support successful learner transitions to post-secondary education. The current limitation of offering just Grade 9 and 10 means that students re-enter the traditional curriculum stream in Grade 11. One of the aims of the pilot project is to evaluate KiHS's capacity to provide Grade 11 and 12 courses.

Ms. Kenny addressed the challenge of teachers working with KiHS learners who are hundreds of kilometres distant. This issue is at the centre of an extensive staff development and improvement program that aims to break teachers free of the 'talk and chalk' mentality and to encourage wider community engagement. There was discussion about how this model could be rolled out in an urban setting and how a KiHS approach could be integrated with city conditions and in other countries such as Australia. As the presentation ended there was an indication that further relationships and linkages would be developed between KiHS and other Indigenous groups and peoples to share and expand this learning model.

K-Net's Multimedia Services

Jesse Fiddler

K-Net's Manager of Multimedia Services gave an overview of the use of the SMART network to sustain and enhance culture and language. Jesse Fiddler is a Sandy Lake First Nation band member who has been using information and communications technologies (ICTs) for ten years. As K-Net's Manager of Multimedia Services in Sioux Lookout, Ontario, he manages all of K-Net's websites and some of its servers, provides Helpdesk services for the websites, and provides training to people throughout the KO communities and First Nations SchoolNet.

Key Messages

Jesse Fiddler began by introducing his immediate and extended family, many of whom live at a distance from him. The NAN communities, which extend over most of the north of Ontario, contain families that live apart. For this reason, this new technology should be used to connect these isolated friends and families.

The culture and language of the Oji-Cree, Cree and Ojibway people is centred on the land-based traditional activities of hunting, fishing and trapping, and on the languages as exemplified in the Elders who are strong in cultural practice and knowledge of their language. Contemporary culture is a mix of their own culture and language and English

and popular Canadian Western culture. Jesse said that his own struggle to maintain language and culture in the face of strong influences against it is carried out by Aboriginal people around the world.

Jesse defined communications technology as something that replicates and supports personal interaction between individuals or among groups and is used, therefore, to overcome the barriers of distance. Because the NAN territory is so large and communities so isolated from one another, the use of communications technologies has always been very important. Communications technologies that were useful in the past include print, radio, television and telephone. Each of these has played an important part in overcoming the distance that impedes communication and the transmission of cultural messages amongst NAN people and communities.

K-Net Services has added to the understanding and transmission of cultural messages. An example is the Legend of Ayash site Jesse created to digitize a legend his grandfather recorded on tape in Oji-Cree. The site features audio, video and print versions of the story.

There are no standardized digital syllabics fonts available, creating an obstacle for the digitizing and sharing of Native-language materials. K-Net has created and published a set of syllabic fonts which are available at no cost on the K-Net website. K-Net has also developed an Oji-Cree dictionary prototype, which has yet to be fully populated.

Jesse took participants to various other cultural sites initiated and maintained by K-Net.

- Fort Severn Traditional Site, a multimedia record of a trip community Elders took to restore and record traditional graves and other sites
- Community portals where each KO community documents community life, events, stories and activities
- 7000 personal websites on **myknet.org** which demonstrate daily living culture of many young people in the north and which feature photos, jokes, family stories, significant outpourings of grief or celebration, recipes, etc.

Jesse also mentioned the important role K-Net's video conferencing network plays in facilitating exchange of Elders, families, and groups using their own language.

Discussion

On the question of the use of digitized syllabic writing as a support for language, Jesse indicated syllabic writing has not yet caught on as a way of personal communications online. Online syllabics are used primarily in schools to teach the language and as a way of archiving existing material in the language. The people who are fluent writers, the Elders, are not, for the most part, using the technology to transcribe their language.

Jesse indicated that standardization of fonts and their electronic platform is the next step to encouraging contemporary communication in the language. Making writing in syllabics easier and more accessible is one of the future goals of K-net.

It is also one of Jesse's goals to expand the work in the multimedia production of legends and stories.

K-Net Networks and Infrastructure

Dan Pellerin

K-Net's manager of Network Services outlined the development of their carrier class broadband network that supports aggregated broadband service delivery in remote and isolated First Nations in Northwestern Ontario and throughout Canada. Dan Pellerin has been working in the information and communications technology field for more than 20 years. As K-Net's Manager for Network Services in Sioux Lookout, Ontario, Dan designs network solutions for new community-based applications and monitors network requirements for service development.

Key Messages

K-Net is a First Nations owned and operated regional community network that has adopted a community aggregation model – where a number of service providers and applications share a common community circuit. This model supports the viability of broadband services in remote First Nations by bringing multiple revenue streams together to pay for a local service. K-Net coordinates and provides support services for terrestrial and satellite networks and has established partnerships with most major network providers in Canada

K-Net manages two distinct networks. The primary network is a community-based wide-area network in First Nations communities. The second network is a videoconference network for First Nations regional management organizations. The community-based network was built up from new technology (some communities had no telephone access when the network was designed). K-Net adopted an IP protocol and Cisco as its primary technology vendor. Communities are connected using a LAN Extension (terrestrial) or the Linkway TDMA system. The satellite network is currently building out capacity and introducing improvements to improve network scheduling, reduce latency and provision Quality of Service.

A unique aspect of the network is that it is wholly-owned by First Nations communities. Each community provides local support personnel and sets service rates and determines local billings. K-Net partners with communities for delivery of regional accounts such as the agreement with Health Canada. The primary lessons learned are to develop in manageable steps, to plan globally and build locally or regionally, to develop strong partnerships with communities, funders, peers and the private sector and to prioritize the edge – utilize edge resources to their fullest potential.

Discussion

The discussion focused on the technical challenges in the North and how technical support can be effectively delivered in remote First Nations. Mr. Pellerin provided examples of how K-Net has facilitated technician development since 1996 – and how that training program was built up from an assumption that community people learn best by addressing challenges that exist in their own community supported by a distributed resource. This point was highlighted by an anecdote about repositioning the Fort Severn satellite dish. In year one, a technician was dispatched from Sioux Lookout. The Sioux Lookout technician worked with the Fort Severn technician to adjust the dish as a result of shifts in the permafrost. In year two, K-Net sent only a spectrum analyzer which the Fort Severn technician used to reposition the dish. In Year three (2004), the local technician used a web-based spectrum analysis tool and made the changes on his own.

2.7 Closing Round Table

The conference closed with an interactive videoconference roundtable discussion amongst key participants who outlined their vision of the future in ICT development.

Key Messages

Chief John McKay
Chief, Keewaywin First Nation

Chief McKay said it had been a privilege to be involved with the SMART project and he thanked everyone involved. He can see the difference that ICTs have made in Keewaywin, a community that did not even have telephones when it was established in 1986. He pointed to the Telehealth services as an example of the difference the SMART project has made. Many patients no longer need to travel long distances by plane to see a doctor. Raymond Mason, Keewaywin's e-Centre Manager, added that, as people get used to the technology, their confidence in Telehealth would increase.

Chief McKay continued by mentioning the importance of students being able to pursue their high school education through KiHS without leaving their community. He said that students in grades 9 and 10 are too young to leave the community, and when they do, they often return after a few months, their education interrupted, possibly permanently. With KiHS, they can stay home and take their credits, until they are old enough to leave.

He closed by encouraging all communities to pursue the use of ICTs, and emphasized the importance of continued government support.

Carl Seibel
Telecommunications Officer, FedNor Industry Canada

FedNor's support of the SMART project has been a part of a national vision for every Canadian to have access to the Internet by the end of 2005. FedNor's investment in the KO SMART project has more than paid off. There are successful programs in place, such as KiHS and Telehealth, which are now transferable to other communities and other contexts. What is more, K-Net has developed an expertise that it is now in a position to market to the rest of the country. K-Net has already shared its experience with communities in Northern Quebec and Saskatchewan.

FedNor encouraged risk-taking by agreeing to support projects that had a chance of working in remote communities. The KO SMART project has certainly worked, and this success has reduced the risk factor in funding future related projects.

For the future, there is already talk of communities acquiring online financial record-keeping systems. This, too, would reduce the need for travel when a First Nation requires bookkeeping or other financial services. Another future application would be the use of Geographic Information Systems (GIS) in the schools and communities.

Geordi Kakepetum
Executive Director, Keewaytinook Okimakanak

Geordi described the past ten years as an 'incredible journey' starting in 1995 when the KO Chiefs first asked their staff to investigate ways to use information communications technology. It began with a Bulletin Board System (BBS) and mushroomed to the many-pronged initiative that K-Net is now. He credited the excellent staff with the project's success. He urged people to read the Kuh-ke-nah stories online (available through the conference website – www.smart.knet.ca/international).

One important aspect of the project has been community education. Computers were completely new to many community members, and KO staff did not know how they would react. He pointed out that the young people learned almost immediately how to use a computer. Geordi said he hopes that the development of these technologies will continue in whatever way necessary to help communities to have better lives.

Brian Beaton
K-Net Coordinator, Keewaytinook Okimakanak

Brian said that working with First Nations has been one of the most enriching experiences he has ever had. Far more important than the tools and equipment of the KO SMART project has been the richness of people understanding who they are and where they are going to be. Brian said that this was an important lesson for other communities interested in adopting similar projects: for the ICTs to be effective tools, it is essential to take into account the people who will be served by them.

Brian expressed confidence in the future, based on his confidence in the young people who have been involved in the project from the start. Young people have "escalated this work to places none of us expected it to go," he said, and he fully expects this to continue. The leadership of KO will guide and develop the project in a way that will benefit their children, grandchildren and great grandchildren.

Jesse Fiddler
Multi-media Coordinator, K-Net

Jesse has enjoyed using the technologies for fun as well as practical ways. He predicted that there would be more new technologies, and more people, especially youth, getting involved. He plans to continue his work with ICTs from his home community of Sandy Lake, where he will focus more on community projects, language and culture development. There are already many great people working on the SMART project but he would like to see some professional and revenue-generating work come out of it.

Discussion

Many live and online viewers participated in the discussion – from New Zealand, Saskatchewan, Toronto and Guelph, as well as Sioux Lookout, Balmertown and Keewaywin. One strong message from Graeme Everton, Tom Winitana and Professor Whatarangi Winiata, was that the conference demonstrated to them what they can achieve, and gave them increased confidence that they can achieve it. They work for a traditional learning centre that provides distributed education services to the people living in 30 isolated Mäori communities.

Randy Johns of La Ronge, Saskatchewan, the site of another SMART Communities project (there are 12 across Canada in total), referred to K-Net as both a mentor and a partner. "K-Net always raises the bar," he commented. His group is planning a videoconference on Cree language retention in the fall of 2004 and he looks forward to a continued partnership with KO over the coming years.

Fernando Oliveira in Toronto asked online for more detail on collaborative work with other provinces and countries. This led to numerous responses and discussion. K-Net already has or is developing partnerships across Canada. Tom Winitana and Professor Whatarangi Winiata spoke of the importance of K-Net's success for their own plans, and stressed their wish to exchange materials and stay in contact.

Dan Pellerin acknowledged the contributions of many people to the SMART project, but commented that the project would have had no value had it not been for the many users.

The Mäori participants offered a short song to close the conference, and Chief John McKay gave the closing prayer.

3.0   Conference Evaluation

The SMART International Gathering used an online evaluation tool to gauge satisfaction and elicit participant comments. The online survey asked for satisfaction feedback on each session, asked if participants would attend another similar gathering and queried how the Gathering could be improved if it were held again.

3.1   Participant Response

A total of 15 responses were recorded. Many of those who did logon to the evaluation site, responded to only a few of the questions. The low participation rate is attributed to the following factors:

1. The first iteration of the online survey was difficult to navigate because of a formatting error. This error was repaired the day after the Gathering concluded.
2. The survey asked participants to rate satisfaction with all sessions attended. However, most people did not attend more than one or two sessions. This made it impossible to aggregate and average scores.
3. The evaluation was available only in English. Non-English speakers were unable to participate in this element of the Gathering

Consequently, the evaluation tool does not provide a representative view of satisfaction with the presentations. However, it does provide a snapshot of satisfaction with the Gathering and provides feedback about improving the design and delivery of subsequent Gatherings.

3.2   Results

All 15 respondents answered yes when asked if they would attend a conference like the Gathering again. Similarly, respondents were very enthusiastic about their participation and indicated that the presentations were of high quality. Some examples of their comments include:

"This was fantastic. A real demonstration of the power of the technology...K-Net has really raised the bar. I was very pleased to be able to participate."

"...a well prepared forum. Preparation in any forum is important but managing so many people in so many countries would have been an interesting task. This is my first webinar and I must say it was a very rewarding experience."

"The content of all the webinars and webcast was excellent."

"It was fantastic to be able to hear the stories of the people involved in making technology work for their communities."

Most persons commenting on the Gathering also included specific suggestions about improving the next iteration of an international Indigenous online conference. These comments ranged from suggestions to hold short but more frequent Gatherings to identifying technical access issues that still need resolution.

"Maybe more of a one day event instead of two days. Then they can be done more often."
"Could the interactivity of presentations be enhanced by animation or digital video? Let's hear more from the youth and Elders!"

"Is it feasible to have a webcast, a powerpoint presentation, and online chat running on the same page?"

"...some phone line problems which made it difficult to hear - as well I could not access the webcasts through our corporate firewall."

Although the online survey instrument did not collect adequate aggregate data on individual sessions those that did complete the survey indicated that the online Gathering was a positive experience that they would participate in again. Further, participant comments indicate that there was a generally high degree of satisfaction with the content delivered as well as the ICTs used during the Gathering. These comments also included specific suggestions for improvement that can be integrated into future conference planning.

4.0 Lessons Learned

4.1 Technology Platform and Rationale

The Kuh-ke-nah International Gathering employed a suite of complementary information and communication applications to coordinate information flow and encourage presenter/participant interaction. The primary components were a) telephony, b) web conferencing; c) videoconferencing/videostreaming and d) web portal. Each of these applications supported specific forms of information access.

Telephone conferencing delivered presenter and participant voice traffic. Webconferencing augmented presentations by delivering rich media content and chat functionality. Videoconferencing bridged sessions between regional and international guests and videostreaming delivered this content to distributed participants via the web. Finally, the Gathering web portal managed access to sessions, supplemented Gathering information and archived conference sessions.

Technical requirements were based on the Gathering's goal to "maximize international Indigenous participation." Application requirements stipulated that ICTs be functional within low bandwidth environments, that one or more of the ICTs be more or less universally accessible by international Indigenous ICT practitioners and that ICTs be easy to use, reliable and supportable within distributed environments. All but the videoconferencing/videostreaming technologies met these requirements. The latter applications were implemented to service a primarily regional partnership group for the opening and closing ceremonies and to engage Mäori participants via IP video. Low bandwidth versions of these videoconferences were archived on the conference website.

Technology choices were pilot tested in December 2003. Presenters from New Zealand and Switzerland used the teleconference/webconference platform to describe their work and to field questions from a live audience at a First Nations ICT conference in Winnipeg. In addition, an international IP videoconference was staged between the conference site and Geneva. As a result of this trial, K-Net technical staff recommended use of the telephone/webconferencing application for the International gathering and indicated that the videoconferencing component could be videostreamed if required.

Lessons Learned

The conference technologies were installed and supported by in-house K-Net staff. Accordingly, staff were required to manage the conference workload in addition to their assigned project duties. The planned winding down of several projects at the end of the fiscal year resulted in staff having to balance several priorities. This resulted in delays in implementing, testing and adequately pre-testing technologies prior to the conference. If international conferences are staged in the future, technology installation and support should be assigned to a dedicated staff member.

Web Portal

The Gathering's web portal provided a high degree of functionality for conference presenters and participants. The web portal provided one-step access to logistical and information services. These included registration, presentations, videostreaming, the presentation archive and supplementary participant information. The web portal used minimal bandwidth and provided a stable platform for information exchange and conference coordination.

The PHP/Post Nuke content management system was custom adapted for conference use. Modifying PHP/Post Nuke's template driven system sometimes resulted in delays, e.g. on-line evaluation. In some cases it was not possible to make changes necessary to create content products and the service was dropped from the web portal suite. If international conferences are staged in the future, web design services should be contracted out or assigned to a dedicated staff member.

Webconferencing

Macromedia's *Breeze* platform was adopted as the webconferencing tool for the Gathering. Macromedia provided satisfactory distributed (web page) help services and very responsive enterprise level support. Presenters and participants found it easy to use and very stable within a variety of international ICT access contexts (broadband, high speed, dial-up). All Breeze sessions were accessible via the Gathering web portal.

The software's organization and tools enabled multiple levels of user access and facilitated dynamic troubleshooting. Unfortunately, the Breeze HTTP tunnelling technology was not accessible to participants who were connected through a government firewall. Although the software licence was purchased in January, the Breeze server was not deployed until eight days before the start of the Gathering. Implementation delays reduced the scope of training provided to presenters and limited their ability to fully explore the software's capacity.

Telephone Conferencing

While webconferencing provided rich media content – the PowerPoint presentations – and online chat capabilities, telephone conferencing enabled voice interaction between presenters and participants. In limited cases, this caused dial-up participants to have to choose between listening on the phone or watching and typing on the web. VSPAN was contracted to provide global dial-up access for the Gathering.

Each country was assigned a constant dial-up number and each web conference was assigned a unique access code. All access codes were available on the web portal. Two phone conferencing problems arose during the conference. In the first instance, the toll-free number for New Zealand was found to be non-functional. Direct contact with the VSPAN help desk resolved this issue within 45 minutes. The second problem resulted from an overload in K-Net's newly installed IP telephony network. This problem was difficult to diagnose and was resolved within one and a half hours. Overall the telephone

conferencing system was very reliable and accessible and is an appropriate and economical means of connecting global audiences.

Videoconferencing/Videostreaming

IP videoconferencing bridged regional partners and Māori participants in New Zealand. The technology performed well, however, the opening and closing videoconference sessions were not accessible to participants who did not have access to high speed services. Web-based videostreams were too bandwidth intensive for dial-up users to access.

4.2   Engagement Process

The participation of and dialogue among community-based Indigenous ICT practitioners was a priority for KO, and so the conference workplan included the "development and implementation of a strategy to maximize international Indigenous conference participation".

Conference planners began the participant engagement process with K-Net's many contacts, following these contacts to other links and so on. This was done entirely online, much of it simply following link after link until projects and contacts were found that met the participant criterion.

The K-Net planning team communicated with several hundred people by e-mail, eventually speaking to the most promising by telephone. A similar grassroots research methodology was used to contact potential presenters for the conference. By December, 2003, K-Net had found two international presenters to speak at the Winnipeg pilot online forum using the Breeze Macromedia software. These presenters were Luis Barnola of the Institute for Connectivity in the Americas and Barbara Craig, who evaluated the "Computers in Homes" project for the Thhoe Education Authority in New Zealand. Both presenters proved to have a wealth of contacts, and many of the participants and one of the presenters were connected directly or indirectly through them.

A one-page conference description translated into Oji-Cree, Spanish and French was used to engage participants as an accompaniment to e-mail messages.

Lessons Learned

The conference planning team were able to contact many potential participants using this wide-ranging research process. Nevertheless, planners, presenters and participants agreed that the time invested identifying grassroots practitioners greatly enhanced the practical value of the Gathering. This kind of targeted research is essential to engage as many of the Indigenous participants as possible and thus it is recommended to prioritize the engagement research process allocating a significant amount of the planning time for it early in the conference planning design.

The translations of the conference description were useful conference promotional tools. Particularly useful was the Spanish translation because through it many Indigenous organizations in Latin America were reached. Luis Barnola, who sent the Spanish description to his largely Spanish-speaking contact list, connected KO to dozens of potential participants and communities of interest. Having a conference organizer who was able to speak some Spanish was also helpful. This person provided first-level liaison with Spanish-language participants, learning from them that there was a need for Spanish-language sessions.

The Conference Agenda was another useful promotional/recruitment tool. The Agenda provided one-step access to the conference and its presenters. Speaker confirmations and event scheduling were confirmed late in the conference planning schedule. Had the Agenda been made available earlier, people would have had the opportunity to browse through it and decide whether or not they wanted to participate.

Of the over 100 people who registered as participants, only approximately 30 to 40 actually participated in the Gathering. Future conference planning might address this by charging a fee, or other measures.

4.3   Language Differences

Gathering organizers realized that a truly international conference could not take place in English only. A significant amount of early planning time was spent determining the total cost (money and time) of hosting a fully multilingual conference. In the end KO was able to translate the one-page conference description into three other languages, Oji-Cree, Spanish and French. The Spanish language description, when sent to a largely Latin American list through one of our contacts, elicited over fifty registrations from this area.

Through communicating with Latin American contacts, it became clear that there was considerable interest amongst unilingual Spanish participants in the conference. Financial constraints prevented full translation, but KO made it a priority to hold two sessions that were bilingual in Spanish and English. The Spanish-speaking conference coordinator provided informal translation and facilitated the two bilingual Spanish-English sessions. Without these two sessions, Spanish-speaking conference participants would have been unable to attend.

Lessons Learned

The large number of conference registrations from Latin American participants would have been difficult to handle without any translation at all. The technical instructions on the use of the Breeze server were translated professionally. An organizer with limited Spanish was able to provide informal translation, and facilitate communications with unilingual Spanish speakers.

The two bilingual sessions were a practical, low-cost response to the interest from Spanish speakers. They did, however, require a conference organizer on-site with some Spanish.

4.4   Managing Multiple Time Zones

The Kuh-ke-nah International Gathering engaged a global audience. Registrants hailed from more than 20 distinct time zones. This context presented two distinct challenges. The first challenge was logistical – ensuring that all participants and presenters understood what time and what day specific presentations took place. The second challenge related to scheduling – ensuring that participants and presenters had fair access to online presentations.

Lessons Learned

The first challenge was addressed by embedding a time zone navigation tool into the Gathering Agenda on the web portal and by identifying the time of the presentation in both CENTRAL (regional) and GMT (international) time. The second challenge was partly addressed by creating full media access to archived presentations. This issue also required a high degree of flexibility in scheduling presenters so that no one had to get up at 0300 to deliver their presentation.

4.5   Facilitating Interaction at a Distance

Breeze Macromedia/Telephone

Each Breeze/phone session was facilitated by one of the three conference organizers, all of who had been trained to use the Breeze platform. This training required significant focussed time by the technology facilitator for the conference in a compressed amount of time (eight days). One of the organizers was able to speak rudimentary Spanish and so facilitated the Spanish-English sessions. The facilitators were adequately prepared for their sessions, being familiar with the presentation and with the presenter, trained on the software and ready with questions to ask. In some cases, there were two facilitators for a session, one managing the spoken discussion and the other, the written questions online.

The facilitation of sessions progressed smoothly and without major glitches. Facilitators followed a written script at the beginning of each session to ensure they conveyed all necessary information about participating. The presentations elicited numerous questions from the floor and online. When a question came in online, the facilitator read it aloud so that those participating only by phone would hear it.

The pre-conference demonstration with the Breeze software in Winnipeg three months before the conference was very useful in working out some of the facilitation issues involved in using this format. For example, the conference planners learned that the appropriate length of time for a Breeze session to maintain audience interest was approximately one hour. It was also evident that a large room full of people listening to a

speaker phone and watching a projected computer screen was not an effective use of this media, because there were too many distractions and the setting was not intimate enough.

Some constraints were inherent to the media chosen. For example, facilitators could not see the participants and did not necessarily know how many participants were on the phone, so they could not tailor the session to them. There was some fluctuation in the number of participants from session to session, from ten up to forty. All facilitators reported finding it difficult at first to watch the online discussion and listen to the presentation and questions at the same time. The facilitator led a question and answer session at the end of each session.

Videoconferencing

The opening session was facilitated by KO Executive Director Geordi Kakepetum. The agenda was carefully scripted and all participants were fully briefed on what they were to say. The final session was facilitated by one of the conference organizers. This session provided good closing comments on the conference, but lacked focussed content and direction in terms of next steps and follow-up to the conference.

Lessons Learned

Breeze Macromedia/Telephone

If there had been more lead-time after Breeze was working, it would have helped for the facilitators to lead a mock session before the actual conference began. This would have enabled the facilitators to get used to watching the online discussion as well as listening to the presentation and questions at the same time, and incorporating both. Having more time to train and brief presenters would have improved facilitation as well.

To take the question-and-answer format up to the level of true discussion would have required more planning time to generate questions and discussion topics working individually with each presenter. A separate conference room to pursue discussion would also have helped. The facilitator could have invited participants interested in pursuing a more focussed discussion to meet together at some online space within the conference website at a certain time. With enough time, the presenter could also have been prepared for further discussion and instructed to keep checking in to participate. These separate discussions would take place either online or live in real time.

 K-Net staff and conference planners would benefit from training in online facilitation .

Videoconferencing

The closing roundtable could have provided more in depth "next steps" if more time had been spent preparing participants to address the topic of the future of ICTs in the context of what had been discussed in the two days. The session would also have benefited from an online facilitator, different from the videoconference facilitator. The online facilitator could have brought the online questions to the videoconference facilitator as well as

directing the "chat" to keep it topical by posing leading questions, responding to comments, etc.

4.6   Troubleshooting

The following systems were put in place to deal with/prevent problems:

1. Helpdesk
The Technology Coordinator for the conference acted as the Helpdesk for participants who experienced any technical problems during the conference. He was also a session facilitator/conference organizer.

2. Archiving
Each session was recorded (audio streamed) by the session facilitator or by one of K-Net's staff who were in the conference hub.

3. Software Training
The Breeze platform was working only eight days before the conference began. In that week, almost 20 presenters were trained on how to effectively use the platform for smooth delivery of the conference sessions. The Technology Facilitator delivered all the training within that week.

4. Website Management
Website management was addressed on an as-needed basis. KO made their senior technical and web resources available on-call.

Lessons Learned

1. Help Desk
The work of the conference Helpdesk should have been done by a K-Net technical staff person, separating this function from the work of the conference facilitator. There were too many instances when both functions were required at the same time thus inhibiting the effectiveness of both.

On the second day, there was a problem with the K-Net\ENO IP telephony bridge which resulted in some audio lines being shut down. This led to a number of system problems including the telephone conference provider (V-SPAN) losing approximately half of the registered participants. Informal troubleshooting involving the conference Helpdesk and K-Net Network Manager and technical staff addressed the problem after the session was over though no system was in place to prevent or deal with this problem when it happened.

It is important to involve the Network Manager in setting up the Helpdesk to ensure that he and senior staff of the key technology providers (ENO, V-SPAN) are in the Helpdesk loop and are prepared to take action as soon as it is required.

2. Archiving

There should have been a K-Net staff person assigned specifically to record and manage the recording/archiving requirements for each session

3. Software Training

Introducing completely new software to many people should have occupied at least one month of lead-time before the conference. This is particularly important given the number of time zones/presenters involved.

Appendix A: Conference Registrants

No	First	Last	City+Province/State	Country	Organization
1	Narene	Barkman	Thunder Bay, ON	Canada	
2	LOZANO	SAULO APOLINAR	CHICONTEPEC DE TEJEDA, VERACRUZ	Mexico	MIAUAXOCHITL ASOCIACION CIVIL
3	ken	goodwin	sandy lake, ON	Canada	
4	John	LaFountaine	Reno, NV	USA	Kinnarees First Nation Digital Preservation Services - www.kinnarees.com
5	Peter, Dr.	Stephenson	Richmond, NSW	Australia	University of Western Sydney
6	Brian	Beaton	Sioux Lookout, ON	Canada	K-Net Services
7	MICHAEL	GURSTEIN	Newark, NJ	USA	NJIT
8	Alison	Norris	Wollongong, NSW	Australia	University of Wollongong
9	Marilyn	Pittman		Australia	
10	Cheryl	Whispering Leaf Carrion		USA	Narraganset/Shinecock (Long Island)
11	Carole	Schwinn	Brooklyn, MI	USA	Berkana Institute
12	John	Willis	Ft. Frances ON/Lancaster PA	CAN/USA	Remote Work Central
13	Vikki	Kakegamic	North Spirit Lake	Canada	
14	Julie	Sparling	Ottawa	Canada	Industry Canada- FNSCHOOLNET
15	Carl	Seibel	Thunder Bay, ON	Canada	FedNor
16	Ricardo	Ramirez	Guelph, ON	Canada	University of Guelph
17	Liliana	Vianey Vargas Vasquez	Oaxaca, Oaxaca	Mexico	Ja ye pye a.c.
18	Daniel	Jones	Tulalip, WA	USA	Northwest Indian College
19	Graeme	Everton	Otaki	NZ	Te Wananga-o-Raukawa
20	Georgina		Cochrane, ON	Canada	
21	Steven		Winnipeg, MB	Canada	
22	Melina	Laboucan-Massimo	Toronto	Canada	Taking IT Global
23	Armando	Lara Godoy	La Paz	Bolivia	AES Communications S.A.
24	Keith	Meekis	Deer Lake, ON	Canada	K-Net Services
25	Manuel	Lopez	Guatemala City	Guatemala	Agexpront

Conference Registrants - KO International Gathering

No	First	Last	City+Province/State	Country	Organization
Conference Registrants - KO International Gathering

No	First	Last	City+Province/State	Country	Organization
26	Valerie	Cris		Canada	
27	Santiago	Reyes	Quito	Ecuador	CONCOPE
28	Smriti	Rajput	New Delhi	India	Bharti Cellular
29	Margarita	Warnholtz	Mexico City	Mexico	Servicios Profesionales de Apoyo al Desarrollo Integral Indígena, A.C.
30	Jennifer	Morrow	Sioux Lookout, ON	Canada	
31	Peter	Radoll	Canberra	Australia	Australian National University
32	Grace	Wynn	Cat Lake, ON	Canada	
33	Madeleine	Stoney	Fort Severn, ON	Canada	Fort Severn e-Centre
34	Mario	Jativa	Quito	Ecuador	Universidad Tecnologica Equinoccial
35	Dave	Vadnais	London, ON	Canada	Elgin Connects
36	Orpah	McKenzie	Thunder Bay, ON	Canada	Northern Ontario Medical School
37	Lydda	Gaviria	Santiago	Chile	FAO
38	Allan	Crow	Naotkamegwanning First Nation, ON	Canada	Northwest Angle Education Authority
39	Arturo	Darbel	Mexico City	Mexico	FUNTEL ac
40	L. Francisco	Canedo	Santa Cruz	Bolivia	Lfcreativa - Educación y Comunicación
41	Florence	Woolner	Sioux Lookout, ON	Canada	
42	John	Rowlandson	Fulford Harbour, BC	Canada	
43	Brian	Rae	North Spirit Lake	Canada	E-Centre NSL
44	Darlene	Rae	North Spirit Lake	Canada	E-Centre NSL
45	Marco Antonio	Mejia Teran	Santa Cruz	Bolivia	Red de Accion Intercultural para el Desarrollo RAID
46	Oscar	Meekis	Deer Lake, ON	Canada	E-Centre Deer Lake
47	Darrell	Ostamus	Deer Lake, ON	Canada	E-Centre Deer Lake
48	Barney	Turtle	Fort Severn, ON	Canada	E-Centre Fort Severn
49	Angus	Miles	Fort Severn, ON	Canada	E-Centre Fort Severn

No	First	Last	City+Province/State	Country	Organization
			Conference Registrants - KO International Gathering		
50	Manuel	de la Torre U.B.	La Paz	Bolivia	Ministerio de Educación Bolivia
51	Tom	Ables	Minneapolis, MN	USA	Sagacity Inc
52	Sebastian	Lara	Olot - Catalunya	Spain	Indigenous Senior Advisory
53	Nidia	Bustillos Rodriquez	Cochabamba	Bolivia	SachaMama
54	Alvaro	Tolentino	Lima	Peru	World Vision Peru
55	Lesvia	Vela	QB	Canada	Librairie Abya Yala
56	Alice	Linklater	Sudbury, ON	Canada	N'swakamok Native Friendship Centre
57	Louise	Clark	London	UK	Imperial College
58	Florencio	Bueno	Chichico Rumi, Tena	Ecuador	Jatun Sacha
59	Cesar	Ramos-Cedeno	Yaguaraparo Peninsula de Paria	Venezuela	REDES Red de Desarrollo Endogeno Sustentable
60	Mike	Koostachin	Attawapiskat, ON	Canada	Attawapiskat Power Corporation
61	Margaret	Fiddler	sandy lake, ON	Canada	Sandy Lake First Nation Administration
62	Rayu Fredy	Alvarado Grefa	Tena	Ecuador	RECOKA
63	Blue	Mason	Keewaywin	Canada	Northern Chiefs
64	Doris	Parra	Maracaibo	Venezuela	
65	Humberto	Muenala Maldonado	Oruro	Bolivia	Los Andes Arte Textil
66	Lekoko	Ole Sululu	Arusha	Tanzania	Terrawatu
67	Gonzalo	Alfaro Denus	Cochabamba	Bolivia	Programa de Alimentos
68	Alexandra	Almenara	Madison	USA	University of Wisconson
69	Jeremy	Snihur	Cat Lake, ON	Canada	KIHS
70	Dr. Daniel	Cartledge	Yuxi, Yunnan	China	Yuxi College, Affl. with Institute of Ethnic Cultures & Soc. Dev.
71	Kasmira	Warbrooke	Whakatane, Bay of Plenty	NZ	Tuhoe Education Authority
72	Oscar	Bonilla Gerardo	Mexico df	Mexico	CAMNAL AC
73	Rosa Esther	Pena Soto	Xilitla, San Luis Potosi	Mexico	coordinadora de organizaciones campesinas e indígenas de la huasteca potosina
74	Gabriela	Sotomayor		Peru	

No	First	Last	City+Province/State	Country	Organization
	Lopez				
75	Fernando	Oliveira	Toronto, ON	Canada	Consultant
76	Geordi	Kakepetum	Balmertown, ON	Canada	
77	Penny	Carpenter	Balmertown, ON	Canada	
78	Peter	Campbell	Balmertown, ON	Canada	
79	Jesse	Fiddler	Sioux Lookout, ON	Canada	
80	Dan	Pellerin	Sioux Lookout, ON	Canada	
81	Cal	Kenny	Sioux Lookout, ON	Canada	
82	Heather	Hudson	San Francisco, CA	USA	University of San Francisco
83	Jackeline	Silva	Lima	Peru	Instittuto de Estudios de Factibilidad Ecológica IDEFE
84	Lars	Dixon	Balmertown, ON	Canada	K
85	Susan	Owen	Poplar Hill, ON	Canada	Poplar Hill e-Centre
86	Freda	Kenny	Balmertown, ON	Canada	KiHS
87	Kathleen	Buddle-Crose	Winnipeg, MB	Canada	Dept of Anthropoligy Uof Manitoba
88	Garnet	Angeconeb	Sioux Lookout, ON	Canada	Consultant
89	Adam	Fiser	Toronto, ON	Canada	Information Studies - UofT
90	George	Morgan			Council of Aboriginal Peoples
91	Angela	Crozier	Thunder Bay, ON	Canada	OFNTSC
92	Crescencio	Resendiz-Hernandez	Ottawa, ON	Canada	Las Cuatro Flechas de Mexico A.C./Four Arrows
93	Julio	Aguilar	Ottawa, ON	Canada	Las Cuatro Flechas de Mexico A.C./Four Arrows
94	Don	Richardson	Ottawa, ON	Canada	Stantec
95	Jacqueline	Dubow	Washington, DC	USA	World Bank (Infodev.org)
96	Marisa	Pene		NZ	Federation of Maori Authorities Inc.
97	Ockie	Simmonds Teimana	Hutt City, Wellington	NZ	
98	Tanya	Pergola	Arusha	Tanzania	Terrawatu
99	Phillip	Budka	Vienna	Austria	http://www.lateinamerika-

Conference Registrants - KO International Gathering

No	First	Last	City+Province/State	Country	Organization
Conference Registrants - KO International Gathering
					studien.at/
100	Gunter	Zetzsche		Bolivia	
101	Andy	Lieberman		Guatemala	Enlace Quiche
102	Maddie	Whaitiri		NZ	Ventures Southland
103	Petere	Czerny	Ottawa	Canada	Industry Canada