Research on ICT with Aboriginal Communities: Report from RICTA 2005
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RESEARCH ON ICT WITH ABORIGINAL COMMUNITIES:
REPORT FROM RICTA 2005

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(Case study)

**RESEARCH ON ICT WITH ABORIGINAL COMMUNITIES
REPORT FROM RICTA 2005**

ABSTRACT

A new Canadian research cluster, RICTA – Research on ICT with Aboriginal Communities – is building a national network of connectivity, knowledge and relationships committed to using social science and humanities perspectives for ICT development. The RICTA cluster is a critical mass of knowledge that Aboriginal communities can both contribute to and tap into on their paths to achieving their aspirations. RICTA 2005 – the founding RICTA meeting held in March 2005 in the remote community of Balmertown in Northern Ontario – was linked by videoconference to multiple sites across three time zones. The meeting provided an opportunity for members of Aboriginal communities across Canada to contribute their perspectives on using ICT for education, health and wellness, governance, language and culture, and economic development. The paper will also discuss the future directions of RICTA in light of the contributions from Aboriginal communities as well as the outcomes of the RICTA meeting.

THE RICTA RESEARCH CLUSTER

Across Canada, Aboriginal communities are considering how information and communication technologies (ICT) can help them to reach their development goals. Research on ICT with Aboriginal Communities (RICTA), a new research cluster, is building a critical mass of knowledge that Aboriginal communities can both contribute to and tap into on their paths to achieving their aspirations.

RICTA was formed in September 2004. By mid-2005, RICTA has 45 members, primarily researchers at Canadian universities and also people working with community research institutes, Aboriginal organizations, government and the private sector.

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The idea for RICTA evolved, in part, out the Canadian Research Alliance For Community Innovation And Networking (CRACIN). There was a recognition that additional attention could be focused on the advancements made by First Nations in connectivity and telecommunications especially in remote and isolated communities in Canada's far north. And, that to better understand how this development occurred it was necessary to not only work with community members but put community needs and objectives at the centre of any research activity.

A catalyst for forming RICTA was the opportunity for support from SSHRC, the Social Sciences and Humanities Research Council of Canada. RICTA is one of 31 Knowledge Clusters funded by SSHRC to identify areas in which Canada could become a world leader in research and to develop models for national research clusters. In recent years, SSHRC has identified research with Aboriginal communities as a priority (McNaughton, 2003).

By the time the first phase of the RICTA cluster ended in early 2005, RICTA members had identified five key principles to guide its future development:

- Working WITH Aboriginal communities
- Using information and communication technologies (ICT) strategically and creatively
- Building local capacity to develop and conduct research
- Holding cluster meetings in communities that facilitate Aboriginal participation
- Facilitating connection and trust among diverse cluster members

RICTA members also agreed that the work of the cluster will focus on three groups of priority activities:

- Interactive engagement and bridge-building
- Research collaboration and knowledge impact
- Outreach and facilitating change

RICTA is a space where university academics, government and community researchers, funders, policy-makers and Aboriginal community representatives can work with

Aboriginal communities to learn how ICT has been adopted and adapted to address historic and contemporary challenges faced by people living in Aboriginal communities, in particular remote and isolated communities. RICTA is a place where academic researchers, funders and First Nations communities can discuss better ways to work with First Nation communities that are becoming leaders in connectivity and telecommunications.

KEEWAYTINOOK OKIMAKANAK (KO), KO RESEARCH INSTITUTE (KORI) AND KUH-KU-NAH (KNET)

The RICTA 2005 founding meeting in Balmertown, Ontario that will be discussed later in this case study was hosted by the tribal council Keewaytinook Okimakanak (KO). KO is one of six tribal councils serving First Nations in Ontario's far north. Keewaytinook Okimakanak means "Northern Chiefs" in Oji Cree.

Knet Services (Kuh-Ku-Nah) is the KO tribal council's ICT and telecommunications department. The Knet Network is a group of local community networks across Ontario's far north. Each community is responsible for its own operations and maintenance and purchases bandwidth at wholesale prices from Knet Services. The local community network provides IT services to its members at a rate the market will bear. Knet Services assumes the role of negotiating with different service providers for the communities and then enter into service level agreements. Any surpluses created by the community networks stay in the community. These surpluses can be used by the First Nations to hire IT workers or provide IT training for community members. Knet is also the Regional Management Organization for Industry Canada's First Nation School Net.

Knet is recognized as an international leader in telecommunications for Aboriginal communities and has been the subject of a growing body of research (Beaton, 2004; Beaton, Fiddler and Rowlandson, 2004; Ferreira, Ramirez and Walmark, 2004; Ramirez et al, 2004).

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Keewaytinook Okimakanak created KORI, its own research institute, in response to growing interest by the research community in Knet. The KO Chiefs did not want to discourage research interest but wanted to ensure that the communities, traditionally the objects of study, would become full partners in participatory learning projects. By doing so, local interests and knowledge would be protected from exploitation and communities would play a central role in any future study on ICT and other areas of interest. To achieve this, KORI would build bridges with the university community, conduct community-based research and promote capacity-building initiatives that would generate research interest and expertise at the community level.

KORI worked on the original proposal to obtain SSHRC funding for RICTA. KORI, Knet and other KO staff worked closely with other members of the RICTA organizing group to develop the RICTA website and discussion list, organize and host the founding RICTA meeting, provide the technical infrastructure and support to conduct the meeting at multiple sites by videoconference, draft the meeting report and facilitate follow-up activities.

PRE-MEETING EVENT: VISIT TO DEER LAKE FIRST NATION

One of RICTA's core principles is holding its meetings in communities that facilitate Aboriginal participation. Breaking with the traditional "big-city" meeting gives community members an opportunity to speak directly to researchers and encourages participation from all community members – including women, elders and youth.

Holding meetings in these communities allows researchers to gain awareness and understanding of participants' realities. It gives community members and researchers the opportunity to work together in a practical way on the organization of the meeting. Over time, it allows the development of a shared history of experiences among cluster members.

The RICTA founding meeting was held in Balmertown, a remote community in Northern Ontario, at a sub-office of Keewaytinook Okimakanak. The choice of

Balmertown allowed meeting participants to visit an isolated Aboriginal community to meet directly with community members and discuss their issues and concerns.

One day prior to the founding RICTA meeting, 15 RICTA members travelled to Deer Lake First Nation, a remote and isolated community near the Manitoba / Ontario border. Travelling by small plane, Deer Lake is approximately an hour northwest of Winnipeg, Manitoba. During the winter months, Deer Lake is accessibly by a snow road. The rest of the year, it is only accessible by air.

During the community visit, RICTA members were given briefings about how ICT are creating opportunities for Deer Lake in education, health and economic development. RICTA members participated in two videoconferences during the visit. The first provided RICTA members with a demonstration of how KiHS, KO's Internet High School, provides a secondary school alternative for young people who wish to remain in their communities for Grades Nine and Ten. The videoconference included students, teachers and administrators from KiHS classrooms in Fort William and Weagamow First Nations.

KiHS is an Internet high school that offers First Nations youth in 13 communities the option of remaining at home. Each KiHS classroom has a teacher who is accredited by the province, a computer technician and in some cases a teacher's aid. This is a major infusion of new dollars into KiHS communities that would not exist without the Internet high school but the economic impacts do not end there. Since teachers are expected to teach to students across the KiHS network, the Internet high school is a heavy user of bandwidth and therefore a steady reliable customer for local community networks.

RICTA members were also given a tour of the Deer Lake Telehealth Station and a "hands on" demonstration of the central role of the Community Telehealth Coordinator. Like KiHS, KO Telehealth has a major economic impact on the host community. Each KO Telehealth station employs a Community Telehealth Coordinator (CTC) whose job it is to maintain and operate the telehealth workstation. The CTC is always a band member whose wages largely remain in the community.

The second videoconference linked RICTA members with the political and technical leadership of the Prince Albert Tribal Council in Saskatchewan. The Grand Chief invited RICTA to Saskatchewan to further its work and offered to host the next meeting of the Knowledge Cluster.

In an evaluation of the visit, three RICTA members described the importance of this visit to their ongoing learning:

> "Visiting Deer Lake was a wonderful experience. Travelling to and spending some time there gave me new insight in regards to the meaning of "remote communities". Listening to students, community residents, etc. describe their experiences with ICT really demonstrated how technology can be used as a tool for empowerment. Personally experiencing e-health by listening to someone's heart beat and looking at another individual's inner ear, both of which were physically located in distant communities, was invaluable in showing, rather than simply telling, the possibilities for ICT in remote and northern Aboriginal communities."

> "In my visit to Deer Lake I learned that in spite of the many challenges facing the people living in this community they are making very effective use of technology to improve opportunities for learning via the KIHS and for health care via telehealth."

> "I learned a lot! It was wonderful being able to visit the Deer Lake First Nations communities and to view first hand the Internet High school and Telehealth projects. The experience of flying to the community, talking with community members, and understanding how the technology is being implemented speaks volumes in terms of its utilization. I was particularly impressed with how ICT may stimulate Aboriginal self expression, creativity and art, learning and sharing, Aboriginal knowledges and ways of knowing, as well as a means to reflexivity of human experiences."

RICTA FOUNDING MEETING

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On March 11, 2005, the day following the visit to Deer Lake First Nation, RICTA held its founding meeting. The meeting brought together university and government researchers, graduate students, government funders and policy-makers and First Nations community leaders in education, health, culture, governance and economic development to discuss new ways of learning and doing research with Aboriginal communities (1).

Fifteen RICTA members travelled from across Canada and the United States to Balmertown in Northern Ontario and were joined via videoconference with more than 30 other RICTA members and guests at multiple sites across three time zones. The videoconferencing sites were located in Fredericton, Ottawa, Toronto, Guelph, Sault Ste. Marie, Thunder Bay, Sioux Lookout, Six Nations, Akwesaskne, and Sandy Lake First Nation. In addition, several people participated in the discussions using the Breeze Platform and Streaming Video on the web. In total, more than 50 people participated in the founding RICTA meeting.

The RICTA meeting was divided into two sessions. The first session included presentations by First Nations community leaders in various fields about how ICT are changing the lives of Aboriginal peoples in remote and isolated communities. They identified their research needs and their concerns about the way in which traditional approaches to data gathering at the community level. All community members agreed that fundamental change must happen if academics are going to continue to enjoy access to remote and isolated communities.

The second session included presentations by academics on new Aboriginal funding sources at the Social Sciences and Humanities Research Council, a survey of ICT in the developing world and a review of the challenges posed by the university establishment in respecting the work of community-based researchers. RICTA members acknowledged that academic researchers face a number of challenges in conducting participatory research with community members. Nevertheless, there is much exciting ICT work among Indigenous Peoples in Canada and around the world which needs to be documented. There was consensus that to best undertake research on the impacts of ICT, it is critical that community researchers play a leading role in all phases of the research process in partnership with funding agencies and academics.

A consensus emerged that the dialogue between the two groups has started and must continue to ensure that strong bridges are built to the communities. There is a unique opportunity. Developing relationships with other universities will take time, but efforts should focus on developing relationships with the communities first.

Community Circle

Two questions were posed to all participating during the morning session of the meeting:

- How can we begin to create local learning or research teams in Aboriginal communities to identify research needs and stimulate research demands from the ground up?

- If your community had researchers available to look at the following issues, what would be your priorities in each area: ICT and education, ICT and health and wellness, ICT and governance and ICT and economic development?

ICT and education

The RICTA meeting participants heard about research opportunities regarding the Keewaytinook Internet High School (KiHS) (the KiHS was originally introduced during the Deer Lake First Nation visit). At the meeting, a number of opportunities were identified for social scientists and educators. KiHS currently provides the curriculum created and by the Ontario Ministry of Education. The program is seeking research assistance with the development of a culturally relevant curriculum that would promote traditional language development. KiHS is currently partnering with the Faculty of Education Lakehead University to undertake research to better deliver its Grade Nine and Ten courses. It is seeking additional researchers for this project.

Community members suggested that RICTA has a role to assist First Nation organizations in accessing funding for connectivity and ICT applications by conducting

research and publishing papers. The federal Department of Indian and Northern Affairs (INAC), for instance, is reluctant to fund connectivity and ICT applications. Yet, INAC is prepared to pay travel and accommodations to students to go south for school. Developing research papers to influence policy will make it easier for decision-makers to change policies and provide funding for the programs that communities need.

Community members shared their experiences in Six Nations and its partnership to provide post secondary courses to prepare its people to better prepare them for the opportunities associated with IT. The community members are entrepreneurs who are seeking help from the research community to assist in the development of research questions and assistance in the conducting research that will support their proposals to funding agencies.

ICT and health and wellness

One of the biggest impacts that community members discussed during the morning session was the establishment of KO Telehealth (KoTH). KO Telehealth links patients in 24 remote and isolated communities in the Sioux Lookout zone with physicians and specialists in Winnipeg, Thunder Bay and southern Ontario. Its services have been expanding to include tele-psychiatry and tele-radiology. Community members noted that RICTA members had been given a "hands on" demonstration at the Deer Lake First Nation Telehealth Centre.

KoTH is the only telehealth network in Canada managed and operated by Aboriginal people. The Community Telehealth Coordinators (CTCs) are community members who are given specialized training in operation and maintenance of the telehealth workstation. Each new CTC is trained on one telehealth tool and as she grows acquainted with its operation she learns to use others. On-going professional development is key to the success of this application. As a result, the community has a greater sense of ownership over this program than other health services on-reserve and are more likely to use telehealth than communities in other jurisdictions which are run by health care professionals from the outside.

Community members reported the importance of working with community members in not only data collection during research projects but in the development of research questions. One community member stated that during a recent project that the survey tool was completely redrafted in order that it would be relevant to people on reserve. The survey was reduced from fourteen pages to eight. Questions were clarified and were re-written so that they could be translated into the local language for Elders and other speakers.

Community members reported that ICT can play an important role in communication the benefits of preventative medicine. The Grade Eight Multimedia Club of Kanatakon Elementary School in Akwesaskne presented a short documentary on diabetes. The club was a student initiative created after Knet Services provided videoconferencing and other multimedia tools to First Nations schools across Ontario.

ICT and governance

ICT has yet to play a significant role in the governance of any of the First Nations participating in the RICTA discussions. Beyond its function to communicate, only one community, Fort Severn located on the shores of Hudson Bay, reported it has used this tool ICT to shape governance. As a pilot project, Fort Severn held a band meeting in the E-Centre during the winter months to make it easier for Elders and people with young families to participate. The meeting was broadcast over the community television station and people could call in their questions over VoiP telephones. There has been no decision as yet as to whether band meetings will continue to be broadcast its band meetings over the community TV station. No other community commented on ICT and governance.

ICT and economic development

One of the most significant economic impacts of ICT reported by community members involved the creation and maintenance of local community networks. Training skilled IT workers is a critical issue identified by community members as a foundation for economic development. Knet Services received funding from FedNor (of the federal Industry Canada department) to employ forty youth living in First Nations across

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Ontario as part of the Youth Initiatives Training (YIT). YIT workers received two days of intensive training in all aspects of networking, web site development, digital video production and other essential IT skills. These workshops were held in Thunder Bay and Six Nations. After the workshop, the YIT workers returned to their home communities where they continued IT training using the Moodle Learning Platform.

CISCO Training for First Nations IT technicians is another key economic development activity. Community members discussed the CISCO training that was provided to several YIT trainers and KiHS computer technicians to become accredited CISCO trainers. These IT workers had learned much of their skills "on the job" and lacked accreditation for their knowledge. Community members stated that there is a need to conduct research that would raise awareness of the levels of local knowledge and the need to evaluate how accreditation bodies can develop ways to respect local knowledge.

YIT workers are expected to develop additional IT skills and populate personal websites as well as the YIT home page by participating in discussion forms, writing news stories and conducting special projects. At least three of the YIT trainers are First Nations youth who developed many of their IT skills through participation in Industry Canada's Smart Communities program. One of the YIT workers discussed her work at the CRACIN workshop on civic participation in Vancouver in February 2005. A YIT worker participated in the RITA discussions via videoconference from Sault Ste. Marie. One of the measurements of success for the YIT program will be if the First Nations hire these young people as IT workers in their home communities.

In addition to training, the lack of broadband infrastructure was identified as another serious issue that prevents many First Nations from fully participating in the digital revolution. The largest First Nation in Canada, Six Nations, has a point of presence at J. C. Hill Elementary School complete with a multimedia workstation and videoconferencing but after five years the community still does not have fibre connections available. Local entrepreneurs are entering the IT market in Six Nations and providing high speed Internet connections, cable TV and working in partnership with post secondary institutions, college and university credits on-line.

Like Six Nations, local entrepreneurs in the north are taking their IT skills learned in the south and returning to their home communities where they are working as consultants and IT technicians. RICTA meeting participant Jesse Fiddler took his family home to Sandy Lake First Nation after living in the south for almost ten years working for Knet Services and studying computer science at university. Like a growing number of employees who avoid daily commutes to the city, many Aboriginal people are learning they can return to their home communities and take their IT skills and jobs with them. At least one employee of the Keewaytinook Okimakanak has returned to her home community but continues to work full time for the tribal council using IT. This potentially could have a major impact on the economies of First Nation communities in the north.

Another economic impact of ICT identified by community members was applications such as KiHS, KO's Internet High School and KO Telehealth. In the past if a student living on a remote and isolated First Nation community wanted to pursue a secondary school education, she would have to leave her family and her community to attend a high school in the large urban centres such as Sioux Lookout or Thunder Bay. Federal funding for the education of First Nations young people flowed from the Department of Indian Affairs to provincially run boards of education with little or no economic impact on the communities themselves. KiHS changed that.

Community members expressed interest in seeking researchers to work with them to learn more about these and other economic impacts of ICT on First Nations communities.

Moving RICTA forward

Near the end of the founding RICTA meeting, participants gathered in small groups to discuss what had been learned from the community presentations. RICTA members in Ottawa, Fredericton, Toronto and Guelph participated in these small group sessions via videoconference. The participants identified the major themes for moving forward, including:

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- RICTA should focus its resources on building bridges with Aboriginal communities. People in universities and Aboriginal communities need to better understand each other. Critical knowledge existing in communities needs to be respected and brought forth. Much more discussion is required between the communities and academic researchers. RICTA has a primary role to establish and develop relationships between university academics and community members. RICTA should focus on development of friendships, relationships and dialogue with the community members. Both groups seem to understand what the priorities are and what changes must take place. More opportunities to talk are required to deepen the work that has taken place today. It is the responsibility of the academic community to make the "first move" to initiate collaboration to develop the relationship more fully.

- RICTA should work with KORI and Aboriginal communities to develop a set of principles for research on ICT with Aboriginal communities. One principle will be the requirement that capacity building takes place in the communities so that people in the communities can conduct their own research. Another principle is that communities cannot be left out of the pre-planning and planning processes. Other principles will include ethical protocols for research on ICT with Aboriginal communities and engagement in the research collaboration process, including dialogue on who owns the data and what is done with it.

- RICTA should assist with the development and training of research teams in the communities to include elders, youth, grandmothers, women and other Aboriginal community members. Aboriginal Elders should be invited to participate in future RICTA meetings. More support should be given to youth (both students and non-students), mature women and others not traditionally involved in research. In addition to working with community leadership, RICTA should reach out to non-political groups within the communities.

- RICTA should develop a series of online tools and resources to assist researchers and community members. These include: an inventory of relevant and existing ICT research and community ICT projects, a facility for sharing successful grant applications, an online resource or tutorial for the research community, a database of

experts including community researchers and community leaders in education, health, community development and culture, and a portal for research protocols. Knet Services has offered to share the Moodle Learning Environment for the use of RICTA members to promote its work. RICTA should promote the RICTA website and link it to other research websites.

- RICTA should review the contributions of the community members at the RICTA meeting and identify research projects that build on these views and needs. It is critical to bring all these perspectives into focus.

- RICTA has created new possibilities and opportunities for innovative research. To fully benefit, RICTA should recommend changes to the ways universities reward and promote research faculty within the university institution.

- RICTA should to continue to build relationships with other academic, government and private partners in order to help the cluster and research agenda grow.

- RICTA should encourage funding agencies to change their policies to encourage community-based research and to consider becoming full partners rather than just a funding source.

- RICTA should encourage policy-makers to promote policy alternatives that will assist with the development of research capacity in Aboriginal communities.

PRELIMINARY OUTCOMES OF THE RICTA MEETING

Although only a short time has passed since the RICTA meeting in March, already some preliminary outcomes have been identified.

An important outcome identified in the meeting evaluation is the new opportunity for interactive engagement: first, among academic researchers and Aboriginal communities, and second, among researchers previously working in isolation in various disciplines (education, health, communications, geography, information studies, rural development, political science, computer science, sociology, information studies and others) to

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discuss their research perspectives and approaches and begin to develop a common language.

Professor Nadia Caidi of the University of Toronto and Brian Walmark from KORI have launched secured initial funding for a research project to create an on-line library to serve Aboriginal elementary and secondary students in Ontario's far north over the Knet Community Internet Network.

Professor Sandra Kouritzin of the University of Manitoba has agreed to join a team of researchers working together to develop a culturally-relevant curriculum for KiHS, Keewaytinook's Internet high school.

Professor Heather Hudson, Director of the Telecommunications Management and Policy Program at the University of San Francisco, plans to work with the Keewaytinook Okimakanak Research Institute and Knet Services to develop and deliver a workshop on research methodology and evaluation that would include evaluation frameworks, analysis of existing data, field data collection, cost benefit analysis, and other topics focusing specifically on evaluation of ICT projects and applications.

Brian Walmark of the Keewaytinook Okimakanak Research Institute has recently completed a report on the social, cultural and economic impacts of the C-Band Public Benefit on satellite-served communities in Ontario's far north and, because of RICTA, he is seeking funding to complete companion studies on the development of K-Net through Industry Canada programs such as CAP, First Nations SchoolNet, SMART Communities and BRAND.

RICTA members Dean Care from the University of Manitoba and Sylvia Barton from the University of Northern British Columbia and other interested parties are arranging a videoconference with KO Tele-health officials to discuss research opportunities.

Professor Ricardo Ramirez of the University of Guelph is working with Brian Walmark of the Keewaytinook Okimakanak Research Institute to explore possible sources of funding to develop a strategy to train a group of KO community members who will facilitate research discussion at the grassroots level. One of the outcomes of this work

will be to prepare KO First Nations to be full partners in participatory research opportunities that are being identified by RICTA, First Nations and the academic community.

Susan O'Donnell of the National Research Council plans to work with the Keewaytinook Okimakanak Research Institute to develop a proposal for a collaborative research project.

Jill Finley, Project Director of Understanding the Strength of Indigenous Communities (USIC) at York University is considering how the ISIC project can facilitate exchange of knowledge with RICTA members and develop partnerships with the KO First Nation communities in Northern Ontario.

Cal Kenny, an artist and multimedia technician, created a documentary digital video about the founding of RICTA with a focus on its goals and objectives (Kenny, Walmark and O'Donnell, 2005).

After participating in the RICTA meeting via video-conference, the Grade 8 Multimedia Class of Kanatokan School in Akwesasne is seeking other First Nations Schools in Ontario to discuss areas of mutual concern. First Nations SchoolNet in Ontario has installed over forty videoconferencing units in First Nations schools over the past three years.

CONCLUSIONS

Doing research with communities that have many needs is not a research challenge alone. It is about building alliances of support for action-research approaches and building bridges between academic, government and funding institutions and Aboriginal communities. The research fostered by the RICTA cluster will be intellectually important if it can be applied in meaningful ways in Aboriginal communities and create a research environment in which Aboriginal peoples become active participants, preparing for the possibilities and challenges that are upon us now and await us in the future.

RICTA is creating a space to challenge the status quo both at the funding and at the academic institution levels. The RICTA platform has the potential to create a legitimate voice for change to shift both funding and research organizations.

RICTA has the potential to set out a framework of contemporary Aboriginal Peoples ICT projects that not only focus on the 'decolonization aspirations' of particular Aboriginal communities but also gaze towards the development of global research and Indigenous strategic alliances. RICTA has the potential to develop a model for collaborative research that could be emulated in other community settings in Canada and in developing regions.

ADDITIONAL NOTES

1. The RICTA meeting report (*Research on ICT with Aboriginal Communities: Report of the founding RICTA meeting. March 11, 2005*) is available on the RICTA website: www.ricta.ca). In addition to information about the meeting, the report lists the research background, interests and contact details of RICTA members to facilitate future interaction.

2. For more information about RICTA and to view the RICTA video, visit the RICTA website: www.ricta.ca

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