

Inuit/ADCOM/Canadian Museum of Nature/Consilium Case Study

In the Arctic, video is in

In Canada's Northern Territories, the locals are using interactive video communications to provide better healthcare, facilitate government involvement, maintain family relationships and help preserve their culture.

“With interactive video communications, doctors in southern Canadian cities such as Ottawa, Toronto and London can consult through interactive video communications with nurses in remote Arctic locations,” says Rick Selleck, a systems analyst for ADCOM Videoconferencing in Ottawa. “When the image quality is as high as Polycom’s, doctors can evaluate and diagnose patients in real-time with live digital video and a high-speed satellite link. They can prescribe treatments and even guide nurses through certain procedures.”

Rick Selleck was hired for his expertise in designing and deploying systems for conducting interactive video communications with people in the Canadian Arctic. He's implementing the technology where temperatures drop as low as 40 below zero and, in some years, the lakes never thaw, the ocean remains covered in ice and the earth just below the surface stays frozen. After living in the Arctic and acting as communications manager for five North Pole expeditions, he's learned how to survive in some of the world's toughest conditions while discovering that video communications can play a critical role in the lives of the people who live in the Arctic.

Selleck, a systems analyst for ADCOM Videoconferencing, one of the largest video communications resellers and service providers in North America, and other video communications specialists from organizations such as Northwest Telephone and Telesat, are connecting remote Inuit and First Nation communities in the Nunavut and Northwest Territories for telemedicine, cultural preservation and distance-learning applications.

“Until recently, the only option for a critically ill or hurt patient was to fly thousands of miles south by air ambulance to the nearest hospital,” says Selleck, who while working for *National Geographic* transmitted the world's first digital image from the North Pole via low-earth satellite (*National Geographic Magazine, January 1996*). “With interactive video communications, doctors in southern Canadian cities such as Ottawa, Toronto and London can consult through interactive video communications with nurses in the remote locations of Nunavut. With an image quality as high as it is

on Polycom's products, doctors can evaluate and diagnose patients in real-time with live digital video and a high-speed satellite connection. They can prescribe treatments and even guide nurses through certain procedures."

The severe weather conditions of the territories make flying extremely dangerous, and if there's a blizzard, nothing moves at all. Even by a 727 aircraft, the trip to the nearest major hospital takes three hours. And some communities are only serviced by light plane twice a week. In the middle of winter, people are often stranded for days if not weeks at a time. In such harsh conditions, video communications becomes a necessity.

In addition to the inherent dangers and time delays of flying in the Arctic, the cost for an air ambulance trip is extremely expensive at around \$150,000. Video communications eliminates the cost and gives patients immediate access to doctors and specialists they need. Access to urgent care can mean the difference between life and death.

Selleck recounted an experience he had several years ago in the high Arctic. In a 1996 Systems Engineering Society project he was experimenting with digital images sent from a nurse's station in Resolute Bay to Memorial University in Newfoundland. During one of their communications tests, the nurse was visited by a man who had just been speared in the arm while hunting seals. Over the network, the doctors were able to guide the nurse, helping her administer the medical treatment the man needed. The test, a real-life application, inspired Selleck's desire to connect every northern community through interactive video communications.

Cultural preservation is an application of particular interest to the Inuit community. The Inuit culture is family-and elder-based, with each generation passing along the skills and knowledge learned from the generation before. Elders are respected and valued for their wisdom and knowledge as they guide younger Inuit through life. Many Inuit have migrated to larger southern cities for jobs and medical services so they need a way to communicate with their families and elders for advice, training and maintaining family relations. Most are separated for many years and some never return home. Cost of travel is a key issue. It costs, for example, more than \$3,000 to travel from the most northern communities of Nunavut to the Canadian capital city of Ottawa. That's a price many of the Inuit simply can't afford.

With technical support from Selleck and ADCOM Videoconferencing, southern-based Inuit use interactive video communications to visit elders through a demonstration project partnership between elders in Igloolik (Nunavut), the Canadian Museum of Nature and Consilium, a private consulting firm. During one of these sessions, Selleck provided a traditional feast for Ottawa's own Inuit community. They gathered at the Canadian Museum of Nature to eat, reunite and video-communicate with their families and friends in Nunavut. Many hadn't seen each other for 15 or 20 years.

“It can get pretty emotional,” says Selleck. “Through interactive video communications we reunited a mother and young son who had not seen each other in nine months. The boy has only one lung and was sent to Ottawa for medical treatment. His mother saw him walk for the first time through a Polycom ViewStation™ system. It was an incredibly moving experience for everyone.”

Selleck knows firsthand that the Inuit are especially fascinated by and impassioned about technology. “They are driving all of us to deploy systems, develop solutions and expand the network and not the other way around,” says Selleck.

Nunavut, once a part of the Northwest Territories, became an official territory of its own on April 1, 1999. Although Nunavut has been operational for only a short time, the Inuit have already created video communications applications to support their vision of having every person participate in their government.

“Participation is the cornerstone of the new territory,” says Selleck. “The Inuit are very democratic and social people and they want everyone involved. During their annual bowhead whale hunt in 1998, they captured a 30-ton bowhead whale for food. It’s the largest mammal in the world. They cut it up into small pieces, about the size of your hand, and made sure that every person in Nunavut got their piece. They want to distribute information to every citizen just like they distributed the whale. Their goal is to put interactive video communications in every community in the territory so everyone can participate in the new government.”

Greg Smith, a partner at Consilium, an Ottawa-based consulting firm specializing in economic and social development, planning, communications and training, has been working closely with the Inuit communities of the North. One of his current projects is a collaborative demonstration project designed to show how interactive video communications can promote education, cultural preservation and community development. The project is a three-way partnership between the Inullariit Society of Igloodik (an organization of Inuit elders), the Canadian Museum of Nature in Ottawa and Consilium. One of their main objectives is to help preserve the traditional culture and ways of the Inuit through training and planning support via video communications for a local community museum in Igloodik. Another is to demonstrate various applications of videoconferencing for schools and for other community uses like the family reunions, support for businesses, and meetings between elders and southern scientists.

“It all started in 1996 when the Canadian Museum of Nature led the three organizations in a collaborative exhibit and demonstration videoconference at the International Union for the Conservation of Nature (IUCN) World Conservation Congress in Montreal. It was a preview of “Arctic Odyssey,” an 8,000 square foot exhibit developed and produced by and presented at the Museum in Ottawa in 1998,” says Smith. “The Igloodik elders provided the traditional knowledge part of the exhibit, and

we helped to organize a one-month videoconferencing demonstration which linked the exhibit to Igloolik. The experience made a lasting impression on the Inuit elders and the community.” The exhibit theme, “Ways of Knowing,” combined the scientific southern approach of research, analysis and study with the traditional Inuit methods, wisdom and knowledge of wildlife, navigation and survival, along with the concept of co-management in which Inuit and southern scientists work together to preserve wildlife populations and manage natural resources.

“We put one video communications system on loan from ADCOM in the Museum and one in a school in Igloolik,” says Smith. “Elders spoke to school children. Scientists met with Inuit. Inuit living in Ottawa came to reunite with their families in Igloolik. And we even had a school program where Ottawa and Igloolik students who had been communicating via fax and email were able to meet face to face by videoconference for the first time. The Inuit got very excited about the technology and how it helped them communicate with people of other communities and cultures. When the project ended, the loaned equipment was gone and they lost their window to the south. That’s when The Inullariit Society of Igloolik became very interested in making video communications a permanent project.”

With funding from the Museums Assistance Program of Heritage Canada, detailed planning for the longer-term project began. And, with additional support from Nunavut’s Department of Culture, Language, Elders and Youth (CLEY), Igloolik was able to obtain Polycom’s ViewStation video system, which it is using today. The Canadian government has a long history of funding development programs to support the preservation of aboriginal cultures and languages, and encouraging cross-subsidization of telecommunications rates to help extend communications infrastructure in the North.

While the Inullariit Society and the community of Igloolik explore potential uses for interactive video communications, they conduct a video call every Thursday with the Canadian Museum of Nature and Consilium to plan and train for their new local cultural museum. Through video, its exhibits, training, workshops and activities will link Igloolik to other communities while providing opportunities for economic, social and cultural development, as well as public education, planning and training.

“The museum will be a center for preserving Inuit heritage and passing it on,” says Smith. “We’re already using video communications to consult with other museums. And we’re planning to eventually video communicate for training museum staff and administration.

“This is only the beginning,” adds Smith. “The people of Igloolik hope to set an example for other Inuit and First Nation communities of how to use interactive video communications to connect to each other and to the rest of the world.”