Indigenous Knowledge: Key Considerations for Arctic Research and Data Management

By the participants of the Sharing Knowledge: Traditions, Technologies, and Taking Control of our Future Workshop[1]
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Introduction

Indigenous Peoples are increasingly leading and contributing to science and research activities across the Arctic. Indigenous Knowledge is being documented in myriad ways in these activities and there is a need for this knowledge to be preserved, managed, and shared along side other data.

Indigenous Knowledge is not western scientific knowledge and we should not try to make it so. We must recognize and embrace the differences and avoid a singular dominance of "hard data" or "hard science" based solely on quantitative methods. We must be aware and careful of privileged perspectives in Arctic research and data management.

Working with Indigenous Knowledge requires understanding the context of the knowledge and the context of Indigenous Peoples in the Arctic. For example, Indigenous Peoples should not be viewed as a group of "stakeholders" in the Arctic. The Arctic is a homeland to Indigenous Peoples and there are critical issues related to the assertion of rights, sovereignty, security, de-colonization and self-determination. These contexts must be considered when working with Indigenous data.

This short statement summarizes some of the key points raised by participants at the *Sharing Knowledge: Traditions, Technologies, and Taking Control of our Future Workshop* held September 22-24th, 2015 in Boulder, Colorado. The points stem specifically from discussions around (i) Indigenous Knowledge and its documentation and use with information and communication technologies (ICTs) and (ii) Indigenous Knowledge as it relates to research and data management practices.

Indigenous Knowledge and Information and Communication Technologies (ICTs)

There have been tremendous changes and advancements in ICTs in recent years. These have had an impact on the documentation, preservation, and sharing of Indigenous Knowledge in a number of ways, positive and negative. For example, social media has linked many remote Arctic communities like never before, but what is shared, by whom, and how it is used is difficult to control. Social media gives our youth an opportunity to express themselves, share their voice, but it can also draw them in to endless hours on a computer screen. There is great interest in providing technology to youth (social media, gaming, etc.) to expand their horizons,

[1] See List of Participants at the end of the document.

but we must be careful this is not at the cost of human relationships, or learning knowledge from Elders, on the land, or person-to-person. We cannot depend or rely too much on technology as technology cannot replace knowledge or traditions, and we need to maintain our patience for the traditional ways of learning from Elders (not the instant gratification of the Internet). One cannot learn Indigenous Knowledge by pointing and clicking on the Internet – this must be stressed. It is only learned through relationships and learning with people who have learned it as it should be (e.g. on the land and water, through practice) and who have lived it. Knowledge is not from a book or from a webpage; it is from experience. We must be clear that people cannot become experts on Indigenous knowledge from reading or even multimedia. We must also caution that technology can create addictions and that the artifacts of technology (devices), cause stress on the environment, the need for mines for metals to make them work, mines that are having an impact on many Indigenous communities around the world. We need to take care to explore all the positive and negative aspects of ever-changing ICTs and balance these, especially when it comes to empowering our youth.

Language and Place

Language is more than a way of communicating, it is a way of thinking. Language is deeply connected to knowledge. When working with Indigenous Knowledge, we need to respect the language in which it was shared. We need technologies and data sharing mechanisms that maintain and promote Indigenous languages.

We borrow the following phrase from Keith Basso; "wisdom sits in places". Fundamentally, the greatest insights from Indigenous Peoples are those that emerge out of landscapes, seascapes, and icescapes.

Space and place are central to Indigenous ways of knowing and identity and so mapping technologies are an important platform for representing Indigenous Knowledge. These tools provide an excellent opportunity to connect knowledge to place and to create content rich atlases that bring together maps, images, narrative and other multimedia. This technology can be used as a tool to re-connect youth to their heritage, and as a bridge to connect Indigenous and western science data and knowledge. As with any technology, it must be used in a mindful way, particularly when used to document sacred or other sensitive places.

We need to highlight that Indigenous Peoples and communities are very diverse in the Arctic. There are many similar ways of life and issues across the North, but there are important differences and contexts, too. For example, in Canada and Alaska, Indigenous Knowledge has gained increasing respect and leadership roles in research circles over the last decades. This is not as much the case in Greenland, and in places like Russia and Finland, where Indigenous Peoples struggle to gain rights, and in some places even experience violence. What is accessible or sensible for one community may not be the case for the next.

The Power of the Digital Age

While there are risks for Indigenous Knowledge in the digital age (we have touched on some of these), there can also be great power. For example, there is power in digitizing tapes of Elders'

stories, digitizing old photos, maps. This allows for the wide and easy sharing of language, of images, of knowledge. This supports the mobilization of knowledge and language as it can be moved or shared anywhere. An important note to interject here is that however we document or share Indigenous Knowledge, we must be careful not to pull out information in isolation or out of context. This is important for the responsible use of all kinds of knowledge in our digital age.

The digital age provides Indigenous People from around the Arctic and the world with an enhanced ability to communicate and share their observations and knowledge. Moreover, it provides them with a method to share experiences, ideas and questions about how to best share their knowledge within and between communities and with researchers, different levels of government, and the general public. These questions include how to maintain sovereignty and authority over the documentation and sharing process, how to best evaluate the ethics of a project, establishing and maintaining funding, and identifying appropriate means of publication.

The "Use" of Indigenous Knowledge and Technology

Sharing knowledge is an important part of Indigenous culture. When knowledge is shared the recipient accepts a responsibility to use the knowledge appropriately and wisely, including giving credit and acknowledgement. A person must have the experience and wisdom necessary to effectively understand and analyze Indigenous data or observations, information, or knowledge. This is also the case in Western science where a certain level in expertise is required to responsibly draw conclusions from data and knowledge. Indigenous knowledge systems do not separate data, from knowledge or wisdom. They are used in together as part of a holistic knowledge system.

Communities and Indigenous organizations are using technology in different ways. Inuit are faced with many decisions on how to share information and at different levels (community, local, national, international). For example, the Inuit Circumpolar Council-Alaska office uses a variety of methods for communication including social media tools like Facebook. Their "I am Inuit" Facebook page sends out regular posts highlighting Inuit throughout Alaska sharing aspects of their life. They also look to technology to communicate information and a consistent message about an issue, for example the nature and benefits of community-based monitoring through the Atlas of Community Based Monitoring and Indigenous Knowledge in a Changing Arctic (http://arcticcbm.org).

Indigenous youth are embracing technology and this has implications for identity. Technology allows them to connect with other youth in the community, in other Indigenous communities around the world, to access news and information about Indigenous issues. Youth who attended the workshop indicated that they have three identities: Indigenous identity, Identity within general society, and their digital identity (email and social media identity). Holding these identities simultaneously can be a challenge, but they need not be in conflict.

Indigenous Knowledge and Data Management

Indigenous Knowledge is geographically and culturally specific. Information systems design should reflect this through the establishment of distributed data management systems. We need

to avoid aiming to establish a single, centralized system but rather focus on meeting the needs of individual communities, regions or cultural groups and on interoperability between systems.

Indigenous communities in the Arctic are the providers of information, users of information, monitors of information, and decision-makers. The uses of data technology are changing rapidly in these communities. We need to continue to work to put control of technology in local hands and invest in improving bandwidth, access to technologies, training, and capacity building.

Establishing protocols for proper consent related to data collection and use, and for data management for Indigenous knowledge is critically important and urgent. There is a need for research and data management planning to be driven by Indigenous Peoples, communities, families, and organizations. There is a need for infrastructure and resources so this can be realized.

Protocols are needed for documenting and using Indigenous Knowledge in a digital form, however, these must be reflexive and consider cultural, historical, and geographical contexts rather than focusing on technical aspects of standards. Adaptability is key.

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