INNOVATION AND TECHNOLOGY FOR INDIGENOUS PEOPLES

Roberto Múkaro Borrero (Borikén Taíno)[*]

1. The Information Society: Challenges and Opportunities

Information and communications technology (ICT) is transformative economically, socially, and politically. Evidence of this transformation can be seen in the dramatic spread of ICT globally and near universal usage in both developing and developed countries. Indeed, ICT is everywhere, with its widest manifestations including computer, multimedia, and Internet technologies as well as audiovisual technologies such as television, film and video, radio and sound recording.

ICT is also recognized as a key dimension of globalization and as such its role is fraught with challenges and opportunities. While the "digital divide" is a reality and the "poorest of the poor" remain "unconnected," research shows that that they – like others – value communication highly for its social, economic and other benefits.[1]

Indigenous peoples, as both stakeholders and rights holders, are an increasing focus of the ongoing discussions surrounding the positive and negative aspects of ICT as well as the possibilities of information and communications-based transformations. The *World Summit on the Information Society (WSIS)* has twice noted officially that, "In the evolution of the information society, particular attention must be given to the special situation of indigenous peoples, as well as the preservation of their heritage and cultural legacy."[2] Indigenous peoples themselves recognized the importance of ICT in their 2003 Geneva Declaration of the Global Forum of Indigenous Peoples and the Information Society, stating:
"Information and communications technology (ICT) should be used to support and encourage cultural diversity and to preserve and promote the language, distinct identities and traditional knowledge of indigenous peoples, nations and tribes in a manner which they determine best advances these goals. The evolution of the information and communications society must be founded on the respect and promotion of the rights of indigenous peoples, nations and tribes and our distinctive and diverse cultures, as outlined in international

---

[*] **Roberto Múkaro Borrero (Borikén Taíno)** *is an independent consultant. He currently chairs the NGO Committee on the United Nations International Decade of the World's Indigenous Peoples and is the President of the United Confederation of Taíno People, a Caribbean Indigenous initiative.*

[1] Spence, Randy and Smith, Matthew. *A Dialogue on ICTs, Human Development, Growth, and Poverty Reduction,* 2010:
http://publius.cc/dialogue_icts_human_development_growth_and_poverty_reduction/091109

[2] Due to the awareness raising efforts of Indigenous representatives at the WSIS proceedings the *Geneva Declaration of Principle* (para.15, WSIS 2003) and the *Tunis Commitment* (para. 22) both contain this statement.

conventions. We have fundamental and collective rights to protect, preserve and strengthen our own languages, cultures and identities*."*

In response to the increased focus on indigenous peoples and ICT, several United Nations initiatives have declared this a priority area, and have addressed challenges and created opportunities with varied results. Some of these initiatives, however, particularly information and communications technology for development (ICT4D) *programs, have been criticized for, "Imposing* Western processes or structures upon indigenous recipients," constituting a form of "Computer-mediated colonialism."[3]

An his article *ICT4D: Seeking the spaces in-between*, *Mark Oppenneer* elaborates that ICT4D includes a wide range of issues such as, "Technology policy, connectivity to the Internet, low-cost devices, power, and designing services to help the economically disadvantaged rise out of poverty or improve their standard of living." He also notes that this, "Wide range of technologies and services implies the involvement of multiple stakeholders and various opportunities for systemic abuse, which complicates the picture." [4]

Beyond this debate, however, the results and accompanying evaluations of these initiatives are worth noting, particularly as multi-stakeholder assessments are being compiled in anticipation of the overall implementation review of the WSIS Summit outcomes in 2015.

*For example, in the conclusions of the International Telecommunication Union's (ITU) first "*Indigenous Peoples Workshop on Information and Communications Technology" it *was determined that there were common issues among indigenous peoples of the Americas such as the "Lack of connectivity," which is sometimes referred to as, "*Inadequate access to technology".[5] *This view affirms the action-oriented position promoted by the Global Indigenous Caucus at WSIS 2005 in Tunisia, which called for* "Universal indigenous connectivity."

On this subject of inadequate access, the United Nations Educational, Scientific and Cultural Organization (UNESCO) notes that, "Generally, indigenous people have low computer ownership, low computer literacy, low connectivity to the Internet and low access to other digital technologies such as cameras, filmmaking equipment, editing equipment, etc. Exacerbating factors are the remoteness of many indigenous communities – often located in regions where connectivity is difficult – and poor levels of literacy, particularly in English, the main computer language. The poverty of communities reduces their access because digital technology is expensive. In remote regions, costs escalate: Internet connections via satellite are dearer than standard telephone-line or cable connections in the cities, and maintenance

---

[3] Ray, Aparna. *Impact of ICT on Indigenous Cultures: Rejuvenation or Colonization?* , 2009, Global Voices: http://globalvoicesonline.org/2009/11/17/impact-of-ict-on-indigenous-cultures-rejuvenation-or-colonization/

[4] Oppenneer, Mark*. ICT4D: Seeking the spaces in between.* The Ethnos Project, Ethnos Blog: http://www.ethnosproject.org/site/?p=3

[5] This workshop was held in Mexico City, November 2005. A summary of the proceedings can be accessed at: http://www.cdi.gob.mx/index.php?id_seccion=1561

and repair services are likewise more expensive and prone to lengthy delays because people have to be brought in from outside. There is a lack of trained Indigenous ICT technicians to provide maintenance locally. In addition, supporting infrastructure, such as electricity, is often absent or intermittent."[6]

The views expressed by UNESCO are consistent with the various presentations of indigenous peoples participating at the *WSIS Indigenous Thematic Planning Conference for Tunisia* held in Ottawa, Canada in March 2005.[7] In 2006, a paper presented to the *1st Session of the Global Alliance for ICT and Development* by the Indigenous Media Alliance reported that throughout the WSIS and related processes "Indigenous peoples consistently emphasized that the information society must serve their needs and ensure their ability to shape their future without risking the loss of their cultural identity.[8] The Indigenous Media Alliance further stressed that the, "Fundamental transformation of human societies caused by the information society on a global scale leaves them facing new conditions of life that pose new challenges for their survival as indigenous peoples and for the integrity of their cultures. These new situations are not covered by already existing indigenous rights standards." These concerns, as well as the possibility for opportunity, are creatively addressed by *Oppenneer* in the following analysis of ICT4D:

"So, the critics are right: misguided ICT4D implementation that doesn't take into consideration a wide range of cultural factors and explicitly or implicitly imposes Western processes or structures upon indigenous recipients does constitute a new form of computer-mediated colonialism. And yes, the proponents of ICT4D are right: ICT, when implemented thoughtfully and respectfully – keeping the needs of the recipients at the fore – can be a powerful agent of change in the fight to reduce poverty and improve the lives of marginalized peoples in developing nations."[9]

2. Innovative Practices

In a 2010 essay entitled, "A Dialogue on ICT, Human Development, Growth, and Poverty Reduction" the authors note that, "Science and technology policy literature, and more recently innovation systems thinking, has long regarded ICT as a platform technology in a country's innovation system".[10] In this sense, ICT is regarded as the "Carrier of technological

---

[6] Dyson, Laurel Evelyn; Salazar, Juan Francisco; Hendriks, Max; Underwood, Jim; and Kay, Robert. ICTS FOR INTERCULTURAL DIALOGUE -*An Overview of UNESCO's Indigenous Communication Project,* www-staff.it.uts.edu.au/.../ICTsForInterculturalDialogue.pdf

[7] See the Report of the WSIS Indigenous Thematic Planning Conference for Tunisia at: http://www.aboriginalcanada.gc.ca/cac/2006forum/site.nsf/vGraphics/Agenda/$file/conference_report_for_WSIS.pdf

[8] Deer, Kenneth and Håkansson, Ann-Kristin. Indigenous Peoples and ICTs: Millennium Development Goal 8 and the Information Society, June 2006: unpan1.un.org/intradoc/groups/public/documents/gaid

[9] Oppenneer at 4.
[10] Spence, Randy and Smith, Matthew, 2010

knowledge" and the "Link that connects the many essential parts of a national innovation system."

The critical role that ICT plays as "A catalyst, knowledge provider and propagator of innovations" is often cited in relation to the use of mobile phone technology. This example is usually provided because mobile phones "Enable or facilitate a range of economic and social innovations among impoverished populations."[11]

When speaking of innovation, however, it is important to recognize different aspects of innovation, particularly in terms of *who* is doing the innovating. In a timely 2008 article entitled "*ICT4D 2.0 – The Next Phase of Applying ICT for International Development,*" Richard Heek assesses different innovation perspectives (content, interaction, services and production) into three categories of "Pro, para, and per-poor" efforts.[12]

As indigenous peoples are recognized as among the "poorest of the poor", as well as some of the most marginalized communities on the planet, Heek's model can be easily reapplied to assess programs and initiatives in the following format:

   a) **Pro-indigenous** (for indigenous peoples)
   b) **Para-indigenous** (with indigenous peoples)
   c) **Per-indigenous** (by indigenous peoples).

Pro-indigenous innovations derive from outside of the targeted communities but are undertaken on behalf of indigenous peoples; *para-indigenous* initiatives are undertaken alongside indigenous peoples communities; and *per-indigenous* efforts mark innovations around processes, new products and business models that are devised by indigenous peoples with reference to their own self-defined needs and wants.

Viewing "innovation" through this lens will assist in the ongoing evaluation of ICT-related programs and initiatives that seek to benefit indigenous peoples around the world.

From 2004-2007, UNESCO, for example, led a series of innovative pilot projects with a focus primarily on the needs of indigenous peoples, under the heading ICT4D. A call for proposals was distributed and five projects were selected in indigenous communities: three in Africa and two in South America. Each project consisted of three main phases including: a training phase in some aspect of using ICT for local content production or cultural preservation; a production phase, in which cultural content was produced or managed; and a dissemination phase, where the results of phase two were made known locally, nationally or internationally.

The goals of the UNESCO ICT4D projects are described as: 'Preserving indigenous peoples' cultural resources by fostering access to ICT, thus contributing to narrowing the digital divide;' 'Fostering the use of ICT to contribute to revitalizing their identity and recovering

---

[11] Ibid at 10

[12] **Richard Heek, Richard.** *ICT4D 2.0 – The Next Phase of Applying ICT for International Development*, Computer, Vol. 41, No. 6, June 2008.

their cultural self-worth and dignity;' and 'enabling the management of indigenous cultural resources and the training of stakeholders to acquire greater mastery of ICT, opening up new opportunities for traditional and innovative income-generating activities.'[13]

Although some critics have broadly defined ICT4D projects in terms of what we can now label as "pro-indigenous," these projects can actually be viewed as "para-indigenous" or a combination of *pro* and *para-indigenous* as UNESCO's "Guidelines for the Final Formulation of the Projects" emphasized two important issues:
1. The participation of the indigenous community in framing the pilot project and
2. Project sustainability, including: (a) cultural sustainability and (b) economic sustainability.

Important lessons learned from these projects include the following:

1.) ICT can be a significant tool to aid cultural preservation and revitalization in indigenous communities and to promote intercultural dialogue.

2.) The projects had varying success in terms of sustainability and achieving indigenous self-representation.

3.) It is important that indigenous peoples take center stage in *all* the projects and that "*Their* eye is behind the camera."

4.) Where applicable, indigenous peoples should receive full training to complete a project from beginning to end.

5.) Further investment will be needed to continue these initiatives.

Innovation in the ICT and indigenous peoples area is not limited to programs initiated by the United Nations system. There are many examples around the world that showcase **per-indigenous** efforts.[14]

One such example can been seen in the creation of the **International Indigenous ICT Task Force (IITF)**, which was established by indigenous peoples to follow up on the WSIS Declaration and Plan of Action as well as the Declaration and Plan of Action of the Global Forum of Indigenous Peoples and the Information Society. The IITF is a not-for-profit organization of indigenous individuals including educators, editors, website managers, community activists, and others "Who have an interest is closing the digital divide between indigenous peoples and the rest of the world."

An ongoing priority of the IITF is the continued development of its "International Indigenous Web Portal" portal at **www.indigenousportal.com**. The importance of a portal developed by and for indigenous peoples was expressed by the Indigenous Peoples Caucus at WSIS in Tunisia. A part of their statement noted that:

---

[13] Dyson, Laurel Evelyn; Salazar, Juan Francisco; Hendriks, Max; Underwood, Jim; and Kay, Robert at 6.
[14] For a number of examples, see the Report of the WSIS Indigenous Thematic Planning Conference for Tunisia at 7.

"A portal is much more than a Web interface. It is a focal point where indigenous content will be available from our peoples and other stakeholders. Our portal will allow us to share, with our own voices, our traditions, values, history and language as well as our aspirations for the future."[15]

In response to this statement, the IITF portal comprises a general site and regional sub-sites highlighting eight regions of the world (North America, South America, Central American and the Caribbean, Arctic, Africa, Asia, Pacific and Russia). These regional sites are presented in the language "Most suitable to the indigenous peoples in their region." In consultation with the portal's all-indigenous board, an indigenous portal project manager facilitates the technical development of the site while indigenous regional managers maintain the content for the sub-regional sites.

Initial funding for the portal project (two years) was provided by the Swiss Agency for Development and Cooperation (SDC), with INCOMINDIOS, a Swiss-based NGO, acting as the financial conduit. An additional supporting partner, Mohawk Internet Technologies, continues to house the computer server for the portal project. Mohawk Internet Technologies is a private company located in and 100 percent owned by the indigenous community of Kahnawake in Canada. The IITF indigenous portal project is now solely managed by IITF and its portal board.

While the creation of the IITF's portal project should be viewed as a success and "best practice" model, in a finding similar to the UNESCO ICT4D projects, further investment and equitable partnerships will be needed to sustain the portal and other innovative initiatives envisioned by the IITF.

3. Future Prospects for Innovation and Technology for Indigenous Peoples

Numerous statements and positions presented by indigenous peoples throughout the United Nations system since at least 1977 affirm that *para-* and *per-indigenous* initiatives are better suited to achieve the aspirations of indigenous peoples locally, nationally, and internationally.[16] Future engagement with indigenous peoples by governments, the United Nations system, and even the private sector should support and promote *para-* and *per-indigenous* approaches. In this context, indigenous peoples should be viewed as active producers and innovators.[17]

---

[15] See "About Us" at http://www.indigenousportal.com/ABOUT.html
[16] 1977 is an historic date in the history of indigenous peoples activism at the United Nation, with indigenous leaders from throughout the Western Hemisphere attending the first ever United Nations International Conference on Discrimination Against Indigenous Populations in the Americas. The conference was held at the Palais des Nations in Geneva, Switzerland.
[17] While *para-* and *per-initiatives* are preferable, there is evidence that a combination of pro- and per-indigenous initiatives could also yield positive results. In the context of the "poor," the combination of pro and per activities is linked to the proliferation of mobiles, driven both by innovative pricing schemes by telecoms businesses (pro-poor) and by users innovating with the relatively "flexible" mobile technology (per poor). This combination created new forms of use that were otherwise not expected or intended. (Spence, Randy and Smith, Matthew at 1)

Indeed, a closer look at international trends focusing on indigenous peoples, innovation and technology seems to indicate there is a sense of evolution. Whereas earlier United Nations initiatives related to indigenous peoples could broadly be viewed as *pro-indigenous,* there is evidence of a growing acceptance and support of *para-* and *per-indigenous* efforts. During the first and now into the second United Nations International Decade of the World's Indigenous Peoples, for example, the theme of partnership was emphasized between indigenous peoples and states and other groups, and between indigenous peoples and the UN. This goal of partnership – based on principles of equity, mutual respect and understanding – offers additional opportunities for indigenous peoples to develop their own solutions to the problems facing them.

Of particular note, the United Nations Declaration on the Rights of Indigenous Peoples was adopted by the United Nations General Assembly in September 2007. The Declaration emphasizes indigenous peoples' right to self-determination. In Article 3, the Declaration notes specifically that "Indigenous peoples have the right to self-determination. By virtue of that right, they freely determine their political status and freely pursue their economic, social and cultural development."

In relation to ICT in particular, UN agencies and specialized programs, etc., are beginning to incorporate *para-* and *per-indigenous* approaches as part of their policymaking processes and operational activities.

The ITU provides an example with the signing of a Memorandum of Understanding (MoU) with the indigenous Navajo Nation (USA) and Observatory for Cultural and Audiovisual Communication (OCCAM). The MoU seeks to "Achieve the goal of digital inclusion, enabling universal, sustainable, ubiquitous and affordable access to ICT for all, including disadvantaged, marginalized and vulnerable groups, as well as indigenous people." The ITU is also reviewing membership status for the *International Indigenous ICT Task Force* (IITF) within its body. *UNESCO is also entering into a para- and per-indigenous relationship with the IITF under the WSIS C8 Action Line.*[18] *This follows a similar relationship between the IITF and the Convention on Biological Diversity.*[19] *Evaluation of these and similar relationships will be important for future work.*

It is no coincidence that the shift from pro-indigenous to para- and per-indigenous approaches is developing as human rights-based approaches are further mainstreamed throughout the United Nations system. Success into the future will rely on the realization that para- and per-indigenous approaches are human rights-based approaches. The adaptation of these approaches by governments and the United Nations system will strengthen the capacity for national impacts while assuring that international developments with regard to ICT and indigenous peoples are "Not out of touch with local and regional realities."[20]

---

[18] Tunis Agenda for the Information Society, the C8 Action Plan focuses on Cultural diversity and diversity, linguistic diversity and local content. See http://www.itu.int/wsis/docs2/tunis/off/6rev1.html#fui

[19] Personal communication with the IITF

[20] Goonesekere, Savitri. A Rights-Based Approach to Realizing Gender Equality. http://www.un.org/womenwatch/daw/news/savitri.htm

Here, the United Nations Declaration on the Rights of Indigenous Peoples will continue to provide guidance for innovation and technology initiatives by clarifying the scope of international human rights standards in relation to indigenous peoples.

Indeed, the Declaration itself addresses the role of ICT, and ICT can play a role in the realization of the rights enshrined by this document. Article 16, for example, states that, "Indigenous peoples have the right to establish their own media in their own languages and to have access to all forms of non-indigenous media without discrimination." Other articles address health and social services, land use, culture, tradition, as well as education and governance.[21] All these areas are or can be dramatically impacted by information and communications technology at various levels.

Ultimately, the challenge remains not in a lack of innovation but in the lack of political will to fulfill obligations and commitments such as those outlined in the Declaration. These obligations are not a "matter of good faith," but they constitute a legal obligation for which states are accountable not only to the rights holders but to the international community.

---

[21] For a further assessment on the role of ICTs and the Declaration see Jesse Fidler's 2008 presentation entitled "UN Declaration on the Rights of Indigenous Peoples - The Role of ICTs at
http://www.fntc.info/files/media/Summ2008_Conf__Indigenous%20Declaration%20Jesse%20Fidler.pdf