Quality of Openness:
Evaluating the Contributions of IDRC's Information and Networks Program to Open Development

Katherine M. A. Reilly, PhD
Simon Fraser University

Rob McMahon, PhD
University of New Brunswick

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1.0 Introduction

1.1 Mapping the Emergence of Open Development

Open development is based on the premise that openly networked structures create the potential for people to collaborate in the production, organization and sharing of information in ways that can produce social, political and economic change. As a field of action and research, it emerges out of the work of people who, during the late 1990s and early 2000s, were actively exploring the relationship between digital network technologies and social change. IDRC has been an active participant in this space, and has contributed heavily to shaping the agenda around open development.

This work emerges out of a lengthy history of IDRC research on information and communications technologies for development (Elder et al., 2013). As is well known, the information and communication technologies (ICTs) that IDRC has researched in developing country contexts for over 20 years have created massive upheaval in knowledge production, governance and business practices around the world (Benkler 2006). With this in mind, in the early 2000s, IDRC began to take up the work of people like Laurence Lessig (2007) and the free and open source software (FOSS) movement, and to collaborate with institutions like the Open Society Foundation and Shuttleworth Foundation, to do research on the role of copyright in harnessing and/or regulating the impacts of ICTs on social change processes.

IDRC initially supported a series of projects on the open aspects of ICT tools and software (de Beer and Bannerman 2013, p. 80). For example, from 2003-2005 IDRC collaborated with UNDP to support the International Open Source Network (IOSN) which was researching FOSS licensing systems. However, over time it became clear that in many developing country contexts, the mere existence of licenses was not enough to guarantee the improved processes of research and innovation theoretically made possible by ICTs. With this in mind, IDRC began to frame its interest in terms of access to knowledge (A2K). As de Beer and Bannerman (2013) explain in their work on the Access to Knowledge movement:

> An A2K framework presumes that free and open flows of information, accelerated by an increasingly networked world, benefit societies overall. It anticipates a sea of change in the way societies are able to share information within and without and supposes that existing IPR paradigms require reform to adjust to these socioeconomic and technological transformations. (2013, p. 79)

As a result, around 2005 IDRC began to fund projects focused on the conditions shaping information and knowledge production and sharing in developing contexts in the digital age. For example, the Commons-Sense project investigated alternative means of regulating the creation and distribution of educational materials in Africa. And IDRC was also an active supporter of and participant in Asia Commons, a 2006 open space conference that sought to identify and envision locally-relevant models of peer production. These early projects provided the foundation for growing exploration of the conditions that shape access to knowledge in the

digital age, such as the African Copyright & Access to Knowledge (ACA2K) project, which focused on access to learning materials. Later work began to look at how open phenomena could facilitate access to knowledge through processes of innovation and production. These include several of the projects under consideration in this evaluation.

Meanwhile, while the A2K movement examined links between ICTs, cultural phenomena and intellectual property regulation, another set of influences began to emerge that would also come to shape open development. This set of influences arose out of discussions about the developmental potential of open data, and so was more related to questions of transparency, participation and distribution.

For example, *Open Knowledge*, a European nonprofit organization that emerged from the open source software community, has been exploring the use of open data to enhance citizen participation in governance since 2004. Influenced by thinkers like Quentin Skinner (2003), they pursued practical solutions to creating active citizen engagement through the reduction of external constraints on participation. One of their projects, *Where does my money go?* enabled citizens in the UK to trace government spending, which enhanced policy dialogue, demonstrating the positive potential of open data. In education, institutions of higher learning, such as the Massachusetts Institute of Technology (MIT) have driven innovation in the area of open courseware. Starting in 2002, undergraduate and graduate course materials were made openly available online, causing over 250 other institution to put their materials online through the Open Courseware Consortium in the years since. And, in the field of open science, the 2001 Budapest Open Access Initiative issued a set of principles for open access to online scholarship.

Despite the practical on-the-ground possibilities of open data, and its potential relationship to larger discussions about A2K in underdeveloped contexts, international organizations initially took up open data and open tools as a way to support international aid *governance* (see for example Linders 2012, 2013). In particular, in 2008, the OECD's High Level Forum on Aid Effectiveness penned the Accra Agenda for Action. Written in the wake of the global financial crisis, the purpose of this Agenda was to deepen the implementation of the 2005 Paris Declaration on Aid Effectiveness, an initiative oriented at harmonizing the work of international donors and creating efficiencies in aid budgets. The Accra Agenda raised interest in activities such as the *International Aid Transparency Initiative (IATI)* and *Publish What You Fund*, a pair of open aid data campaigns.

Additionally, at this time, the newly elected Obama administration set up websites where anyone could track the US government's use of national funds. These included recovery.gov, USASpending.gov, IT.usaspending.gov, and foreignassistance.gov. It also issued an *Open Government Directive* instructing federal agencies to implement open governance strategies that would encourage participation and collaboration. USAID's implementation of this open governance policy reportedly added to the ripple effect, driving adoption of open data initiatives in international aid agencies.

Meanwhile, when Robert Zoellick took the Presidency of the World Bank in 2007 he announced that the institution's vast knowledge and learning would be applied to the goal of inclusive and sustainable globalization (Zoellick, 2007). The Bank began consultations with Hans Rosling of the Gapminder Foundation and announced its Open Data initiative in 2010. While the Bank does explore some applications of open data to development (for example Gigler & Bailur, 2014) much of its work in this area focuses on facilitating access to international statistics and publications through its Open Data Portal and Open Knowledge Repository.

But while the beehive of activity around open aid data may not have addressed on-the-ground development concerns, it did serve to coalesce interest around the question of how open data could be leveraged to achieve development objectives. By 2009, several organizations were actively working on this question. Matthew Smith of IDRC published his first co-authored think piece on "Open ICT4D" in 2008 (Smith et al., 2008), and in April 2009, Open Knowledge hosted a discussion about open development at OKCon. By May of that year, Open Knowledge started an online group about open development which included actors such as Apropedia, Wikis for Development, Engineers without Borders, Publish what you Fund, Ethan Zuckerman, people working on World Intellectual Property Organization concerns, and IDRC's Matthew Smith.

Among these organizations, it is important to note, interest was trained on the role that openness could play in actual 'on-the-ground' development processes, rather than its role in facilitating aid governance or the publication of information *about* development. In terms of their approach and objectives, this set IDRC's work apart in significant ways from the big international aid organizations, and created the conditions necessary to establish the field of Open Development.

1.2 IDRC's Contributions to Open Development

In 2010, Laurent Elder and Matthew Smith hosted a meeting about open development in Ottawa. Their 2009 call for papers attracted a wide range of development scholars (including Dr. Katherine Reilly, one of the authors of this report), who participated in two days of workshops, and attended panel presentations by Sunil Abraham, Yochai Benkler, Ron Deibert and Michael Geist. The result of this foundational work was a very different way of conceiving open development.

Drawing on both its depth of experience in the A2K movement, and the contemporary interest in open data within development circles, IDRC argued that open education, open publishing of government data, open scientific collaborations or new networked modalities for business do not in themselves guarantee the achievement of development goals. In fact, evidence suggests that openness can work to entrench existing inequalities or generate new ones. Given this, IDRC sought to establish research initiatives that could explore the *qualities* of the openness made possible by information networks, as well as the contributions of open processes to *quality* development outcomes. In addition, IDRC noted that, as a new field of practice and research, work would need to be done to build practical literacy and research capacity in this field. As noted in the *IDRC Strategic Framework (2010-2015)*:

...[W]hile information and knowledge provide the potential for open development, it does not mean that researchers and policymakers have the capacity to find, adapt, and use such tools. The research that is needed rests on the hypothesis that these open models of development could play an important role in ensuring that the benefits of information societies reach all levels of society and in ensuring inclusive participation in a global knowledge economy (p.29).

With this in mind, in 2011 IDRC established a new program called Information and Networks (I&N), tasked with the job of producing actionable knowledge about the link between openness, social change and development. For I&N, openness refers to both the content available on information networks, and the ways in which people interact in and through these information networks. Their goal is to achieve "A greater understanding of the context, dimensions, variations, implications, and quality of digital openness, particularly in the thematic areas of creative industries, learning, governance, and science; and Informed and influenced policies and practices that enhance the quality of openness in the four themes" (I&N Prospectus, p. 10).

Figure 1.1: I&N's Contributions to Open Development
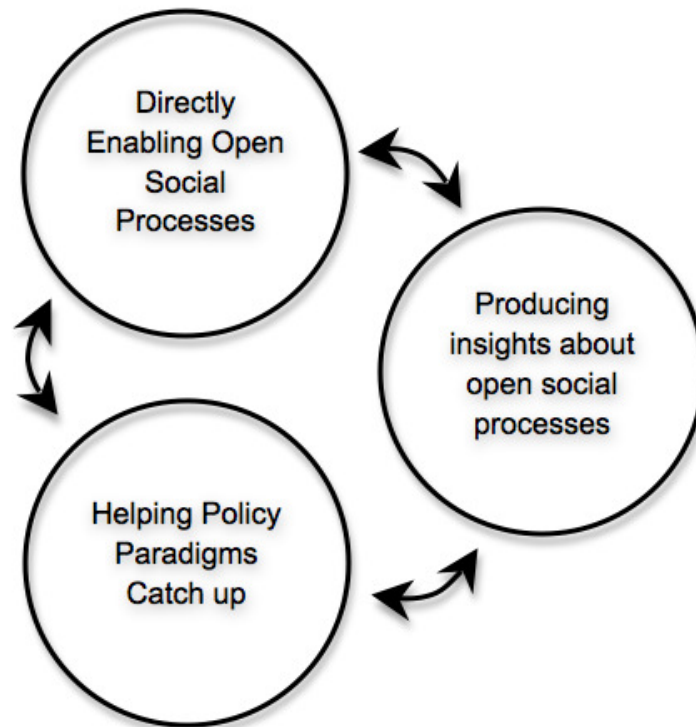
I&N's work (as depicted in figure 1.1) brings together direct interventions in open social processes, with insights from research, and advice that helps policy-makers catch up to changing opportunities and threats. In conversation with various experts and practitioners working in this space, we learned that IDRC is unique in its funding of action and reflection around open social processes, development and social change. IDRC's fundamental

contributions to this space are evident in the impact that it has had in shaping the field of Open Development. I&N has not only catalyzed action in open development initiatives on the ground, but it has also been a key contributor to the conceptualization of the field.

This began with a 2008 working paper titled "Open ICT4D", which hypothesized that openness can enable development (Smith et al., 2008) through the expansion of human capabilities (Sen, 1999). Subsequent works expanded on these ideas. "Open ICT Ecosystems Transforming the Developing World" (Smith & Elder, 2010) argued that an 'open' enabling environment can support the creation and diffusion of knowledge among development protagonists, which can in turn help drive local innovations. A subsequent piece, "Open development: A new theory for ICT4D" by Smith, Elder and Emdon prefaced a 2011 special edition of the journal *Information Technology and International Development* focused on open development. And *Open Development: Networked Innovations in International Development* (Smith & Reilly, 2013) illustrated the diverse research funded by IDRC in the field of Open Development. Co-published by IDRC and MIT Press, this book offered foundational definitions and traced different approaches to open development.

This work has been taken up in several sectors. These include the intersection between open development, innovation and intellectual property (de Beer et al., 2014); the collaborative ways in which e-Government can be advanced (Stoffregen, 2013); and different manifestations of open education, including the challenges and opportunities it faces (Weller, 2013). I&N's work has also touched research on open development in different geographic regions. For example, Herchui et al. (2013) analyze the manner in which institutional mechanisms enable or inhibit open development initiatives in Iran, while Cyranek's (2014) work offers a similar analysis in Latin America. In the Asian context, Wardoyo and Mahmud (2013) discuss the merits of Indonesian domestic workers using ICTs in an open university in Singapore. Robin Mansell's publications on open development have also helped extend and internationalize the field. She wrote the introduction of *Enabling Openness: The future of the information society in Latin America and the Caribbean* (Girard & Perini, 2013) and presented "A summary of Open Development" at the IV Ministerial Conference on the Information Society for Latin America and the Caribbean in April 2013 (Mansell, 2013).

This research draws upon a rich tradition of development work and scholarship in the field of knowledge for development (K4D), but extends this work in new and innovative ways. This thinking is reflected in IDRC's current Strategic Framework, which notes that:

> Novel solutions and more effective ways have to be found to help people
> develop and act on the knowledge they need, whether they be policymakers
> and opinion shapers, civil society representatives, entrepreneurs, or other
> change agents. Obstacles to applying new knowledge to today's problems
> — political, economic, cultural, or otherwise — will need to be overcome. If
> not, even the best research will have little or no impact. Knowledge and
> innovation, in other words, remain core tools for empowerment. As such,

they are critical ingredients in the quest for greater prosperity, security, and equity (p.8).

K4D has long been a key pillar of IDRC's work, carried out through computers for development, ICT4D, and the Bellanet initiative (Braybrooke et al., 2013). In particular, during the 1990s, development agencies established knowledge management programs under the claim that "knowledge and ICTs can become the great equaliser in developing societies" (Flor, 2013, p.55). This work hinged on the proposition that knowledge can be *captured and diffused* as a technology or technique of development (McFarlane, 2006).

But today our thinking about K4D has shifted given the influence of the A2K movement. K4D has always paid attention to the factors that constrain or support the contributions of knowledge to development. But in a networked society, these factors are changing. Access to ICT infrastructure is much more widespread than it was a decade ago, even under conditions of impoverishment. As a result, development actors are taking up information and networks in new ways within health, agriculture, environmental management, education, innovation and governance. These include new strategies for knowledge production that are based on sharing, collaboration and adaptation.

However, in any knowledge management process, a range of stakeholders strategically create, capture, use and share diverse forms of knowledge to inform development (Bennett & Jessani, 2011). Critical researchers note the importance of considering the unequal power relations that shape these activities and threaten to disempower individuals and groups engaged in development. From this perspective, A2K is conditioned by many factors, including practices and modes of participation, infrastructures, networks of interaction, and stakeholder capacities.

With this in mind, the IDRC Strategic Framework poses an overarching question for I&N's programming: "Do open knowledge societies lead to more equitable, innovative, and sustainable development?" (p. 3-13). Through their research, IDRC and its partners are learning how new 'open' approaches to K4D can make the work of development practitioners more effective, while also revealing its particular pitfalls and limitations. As noted in IDRC's Strategic Framework document, the same ICTs that support citizen engagement can also be used for surveillance and social control. Collaborative, participatory data-gathering projects also run the risk of being overrun by unreliable data.

In this context, I&N is supporting research that focuses on how open resources and mechanisms can be used to support real-world outcomes and address development challenges. Research that flows from this can inform policies and practices that can help address development challenges. With this in mind, this document offers a summative and formative contribution to I&N's ongoing efforts to advance the field of Open Development.

1.3 Purpose and Uses of this Evaluation

The purpose of this evaluation is to assess I&N's past and current contributions to the emerging and maturing field of Open Development. It offers both summative and formative feedback that I&N can use to enhance its oversight and support of research that addresses IDRC's goals in this area.

In particular, I&N's current mandate says that it will:

> …support interdisciplinary and systemic research that seeks to facilitate positive digital transformations, particularly in the thematic areas of creative industries, governance, learning, and science, as information networks are radically changing practices in these four areas. I&N will attempt to achieve four interconnected outcomes related to these abovementioned themes: (i) **improve the quality of openness that networked technologies enable**; (ii) protect the rights of citizens and consumers; (iii) catalyze the inclusion of marginalized communities in emerging networked societies; and (iv) deepen and broaden the field of information networks and development. (I&N Prospectus, p. iii)

With this focus in mind, the specific objective of this evaluation is to offer feedback about theoretical frameworks and program support activities that can enhance research about the application of digitally enabled open social formations to development processes.

This evaluation was carried out at the halfway point in I&N's current mandate (2011-2016), and therefore offered an opportunity to reflect on the program's achievements, as well as to suggest adjustments to research agendas and implementation strategies going forward. It is important to note that this is first and foremost an evaluation of the I&N research program, not of the I&N team or I&N projects *per se*. However, the latter were consulted in the course of producing this work to help inform our research and analysis.

The specific objectives of the evaluation (see Appendix 6.1) are to:

- Produce summative findings about the degree to which I&N projects are achieving 'quality of openness' outcomes.
- Establish a common understanding of what is meant by "quality of openness" or "quality openness" by both the I&N team and its research partners. In particular, to identify outcomes consistent with 'improved quality of openness.'
- Suggest principles or lessons that can be applied to projects that are trying to produce 'quality of openness' outcomes.

The primary intended user of this report is the I&N program, for the purposes of program review and improvement, as well as external reporting. Secondary intended users include I&N's peers and research partners, who can incorporate lessons learned into their activities.

Summative, formative and utilization-focused forms of evaluation complement each other, particularly in ongoing collaborative projects such as the openness outcome area of the I&N Program. In utilization-focused evaluation the goal is to produce evaluation results that key stakeholders will make use of in their ongoing work (Patton, 2008). Summative evaluations offer an opportunity for key stakeholders to reflect on what they have already achieved. This then offers a platform to develop formative feedback that stakeholders can apply in future work.

Our approach to evaluating the openness outcomes of the I&N program followed a spiral model (see figure 1.2). Working collaboratively with both I&N and its principal investigators, we established core summative evaluative understanding, and then worked outwards to generate increasingly more formative evaluative findings. This process can be broken down into three stages.

Figure 1.2: A Spiral Approach to Utilization-Focused Evaluation
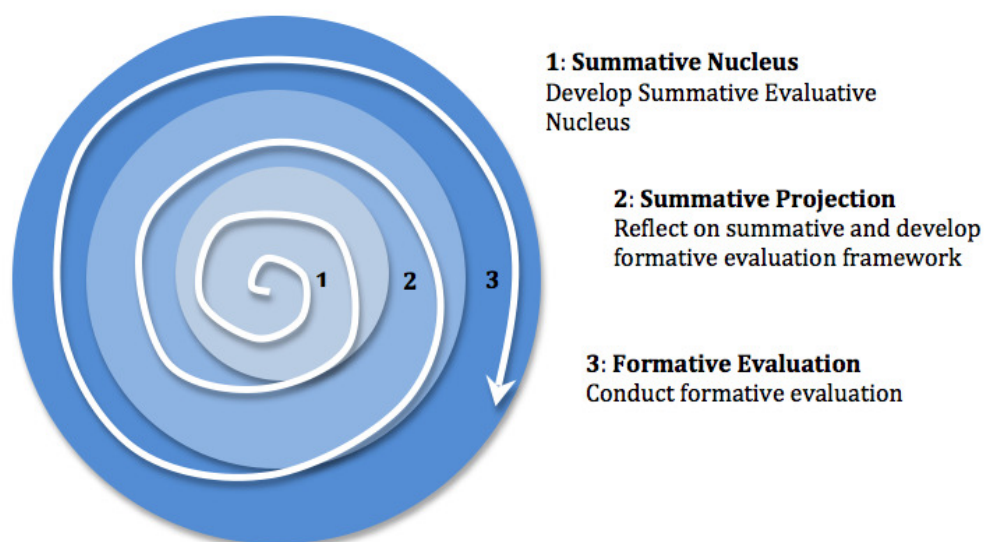
Summative Nucleus

The *Information and Networks Program Overview 2011-2016* (I&N Prospectus) outlines a framework for "enhancing the quality of openness" that is now well advanced in its implementation. With this in mind our summative evaluation set out to extract key outcomes from I&N projects, and situate them against the backdrop of the emerging field of Open Development research. In order to do this, we looked at two sets of openness projects: five that came into existence before 2011 under a previous program structure; and five that were created under the current program structure (see chapter 2 for details).

We first analyzed these projects through a structured comparative document analysis to draw out key similarities and differences in terms of questions asked, research design or methods,

and findings. We then conducted a detailed 'outcome harvest' to gather evidence about the results of these projects. Three categories of outcomes were gathered through interviews with principal investigators, document analysis, and focus groups and surveys with project participants. Our analysis of these results is situated against feedback gathered from principal investigators during interviews. The results of this work are presented in chapter 2 of this report.

Our process for gathering data about outcomes was multi-method and also tailored to the design of each project. We first spoke to the principal investigator from each project about our intention to study the outcomes of their work. We offered suggestions about how to gather this information, but as 'invited guests' to their research initiative, we worked with them to develop a data gathering strategy that suited their needs as well as ours. In total we did the following work, which is detailed in table 1.1:

- Interviews with the principal investigators of all projects.
- Document analysis of the proposal, PAD, interim reports and PCRs of each project, as permitted by availability.
- Where appropriate, an outcome gathering activity to include the inputs of a wider pool of project participants or project recipients in our analysis. This activity was either a survey or a focus group.
- Where appropriate, analysis of the outcome gathering strategy and resulting materials of specific projects that have these apparatuses in place.

The appendices to this document offer detailed information about the interview scripts (Appendix 6.2), focus group scripts (Appendix 6.3), and surveys (Appendix 6.4) used to do this work, as well as an overview of the respondents and response rates (Appendix 6.5). The resulting data was compiled in NVivo and analyzed qualitatively to draw out findings about the outcomes of the 11 projects.

Table 1.1: Summary of Methods Applied to Various Projects

Projects	Contact	Old / New	Methods
Open Knowledge			
Arab Knowledge Society: Who Represents the Arab World Online?	Mark Graham	New	PI Interview Document Analysis
Open Science			
Scholarly Communication in Africa Programme	Eve Gray & Michelle Willmers	Old	PI Interview Document Analysis Participant Survey
Quality, Reach and Impact of Open Scholarly Publishing in	Gustavo Fischman & Juan Pablo Alperin	New	PI Interview Document Analysis

Latin America			Participant Focus Group **Case Study (Ch 4)**
Catalysing Open and Collaborative Science to Address Global Development Challenges	Leslie Chan & Angela H.S.C. Okune	Very New	PI Interview Document Analysis
Open Governance			
Open Data for Public Policy in Latin America and the Caribbean	Jorge Patiño	Old	PI Interview Document Analysis Participant Survey
From Data to Development: exploring the emerging impact of open government data in developing countries	Tim Davies & Jose Alonso	Very New	PI Interview Document Analysis **Case Study (Ch 4)**
Open Education			
Openness and Quality in Asian Distance Education Technology	Gajaraj Dhanarajan & Naveed Malik	Old	PI Interview Document Analysis Participant Survey
Research into Open Educational Resources for Development (ROER4D)	Cheryl Hodgkinson-Williams and her team	Very New	PI Interview Document Analysis **Case Study (Ch 4)**
Open Innovation			
African Innovation Research on Intellectual Property's Role in Open Development (Open AIR)	Dr. Tobias Schonwetter & Jeremy De Beer	Old	PI Interview Document Analysis Participant Focus Group
Open Business Models I & II (Latin America)	Pedro Augusto & Luiz Marrey Moncau	New	PI Interview Document Analysis Participant Focus Group

Summative Projection

Throughout our work, we reflected on summative evaluation findings and projected forward towards formative evaluation needs. This work was strongly informed by our terms of reference (Appendix 6.1). Having established the field of Open Development (Smith et al., 2008; Smith and Reilly, 2013), and parsed out its key thematic areas and processes (Smith, 2014), the I&N program indicated that it wanted to understand how to support research that produced insights about the impacts of openness on development going forward. In order to think through what I&N could be doing to advance its work in this field we pursued a number of activities including:

- Structured critical analysis of the research questions, design and methodologies used in I&N projects.
- Literature review of rigorous peer reviewed research demonstrating the link between open processes and social change.
- Concept mapping of the evolution of open development as a concept, and I&N's contributions to this field.
- A comparison of I&N's research on openness with that of the larger field.

We also visited I&N in August, 2014 to share our emerging thinking with the team, and to work on developing new approaches to researching open development. During interviews, we discussed these emerging ideas with the principal investigators from our 10 projects to get their feedback. And based on this work, we developed a working model for researching open development, which is presented in chapter 3 of this report.

Formative Evaluation

Formative evaluation takes place during a project with the aim of improving its design and impact. The aim of this formative evaluation is to intervene in the I&N Program at the halfway point in its 2011-2016 project cycle to highlight potential new directions for research. Our methodology in the case was to map a projected research model onto 3 current projects. The aim of these 3 case studies was to both 1) 'stretch' the model to uncover its benefits and limitations, and 2) examine the cases to see what challenges they presented for the implementation of such a model.   *It is important to note that we are not evaluating the three cases, but rather leveraging them for a thought experiment.* Our findings from the case study analysis are situated against feedback gathered from interviews with both principal investigators and I&N project officers. The results of this work are presented in chapter 4. We complete our report with overall findings, recommendations and conclusions in chapter 5.

2.0 Researching Open Development: Summative Evaluation

2.1 Background: I&N's Prospectus

A primary objective of this evaluation is to produce a summative assessment of I&N's work in the field of Open Development, which is what we present in this chapter. The resulting insights provide the foundation for the formative work presented in chapters 3 and 4.

The main goal of the I&N program is to "enabled greater understanding of how information networks positively and negatively affect developing countries' citizens, especially citizens belonging to marginalized communities" (I&N Prospectus, p. 9). The work is realized through four outcome areas (openness, rights, inclusion and field building) of which this evaluation focuses on openness.

The openness outcome area works on "the enhanced quality of openness that networked technologies enable," (I&N Prospectus, p. 9) where openness refers to both the content available on information networks, and also the means people use to connect, share, organize and produce on information networks. In particular, the main goal of the openness outcome areas is to "enhance the quality of openness and how information's quality can be enhanced to ensure it achieves development outcomes" (I&N Prospectus, p. 10). Specific goals include developing "a greater understanding of the quality of digital openness" and "informed and influenced policies" (I&N Prospectus, p. 10).

I&N program strategies to achieve these ends include stimulating innovation, generating knowledge, influencing policy and building research capacity. The principle program modality identified by I&N to achieve these goals was the use of research networks, along with open, competitive calls for grantees (I&N Prospectus, p. 16). These networks and competitive granting processes are intended to catalyze and scale-up innovations, generate knowledge about how information networks are leading to social change in developing countries, produce standards and replicable models, inform and influence policy debates, and support systemic and interdisciplinary thinking and research (I&N Prospectus, p. 15).

Figure 2.1: Expected Outcomes of I&N Openness Programming

	Network building and innovation	*Research recognition*	*Affecting open policies and practices*
Growing prevalence of Open development processes, such as Open Government Data (OGD) initiatives, Open Educational Resources (OER), Open Science initiatives (OS), and Open Business Models (OBM) in the South; however, their quality and impacts on development are poorly understood	Networks are built on OGD, OER, OS, and OBM that produce new applications and evidence about their impact in developing countries	Evidence on good practices and impact of open development processes are cited, used, and recognized by a global community of peers, the media, and policy-makers	Policy-makers and practitioners involved in OGD, OER, OS, and OBM use project results to inform their funding and implementation

Source: I&N Prospectus, p. 14

With this in mind, the expected outcomes of programming in the openness outcomes area are network building and innovation, research recognition, and affecting open policies and practices (see figure 2.1). These outcomes are targeted against four thematic concentrations, namely open government data (OGD), open educational resources (OER), open science (OS), and open business models (OBM).

I&N has followed these thematic and program directions, and indeed, as will be discussed throughout this chapter, has 'shifted the goal posts' over time as it has deepened its engagement with open development research and policy work. In what follows we first offer a summary of I&N's open development projects before exploring key research findings and program outcomes. We conclude the chapter by discussing trends, lessons learned and recommendations.

2.2 Summary of Projects

Out of the 14 open development projects currently funded by I&N, we were assigned a representative sample of 11 projects, distributed across time (see table 2.1). Six of these came into existence before the establishment of I&N, and 5 were set up under the current prospectus.

Table 2.1: Projects Reviewed out of Complete List of Openness Projects
Projects contemplated by this evaluation are shaded.
The double bar marks the divide between pre- and post-I&N projects.

Project	Recipient	Start Date
Catalysing Open and Collaborative Science to Address Global Development Challenges	Ihub Limited, Kenya University of Toronto	02/28/14
Harnessing Open Data to Achieve Development Results in Latin America and the Caribbean	Fundación Avina Organization of American States Economic Commission for Latin America and the Caribbean University of the West Indies, JM	02/26/14
Strengthening the evidence-base for open government in developing countries	Web Foundation Hivos	02/24/14
Research into Open Educational Resources for Development (ROER4D)	University of Cape Town Wawasan Open University	06/21/13
From Data to Development: exploring the emerging impact of open government data in developing countries	The World Wide Web Foundation	12/20/12
Quality, Reach and Impact of Open Scholarly Publishing in Latin America	Facultad Latinoamericana de Ciencias Sociales	02/12/12

Open Business Models Phase III: New Compensation Mechanisms for Creativity and Inclusion	The University of the West Indies, Jamaica The American University Fundación Karisma Fundação Getúlio Vargas IP Watch Association	01/15/12
HarassMap: Using Crowd Sourced Data in the Social Sciences	Youth and Development Consultancy Institute	11/15/11
Open Data for Public Policy in Latin America and the Caribbean	Economic Commission for Latin America and the Caribbean Brazilian Network Information Center - NIC.br/NIC.br	06/21/11
Arab Knowledge Society: Who represents The Arab World Online?	University of Oxford	04/14/11
African Innovation Research on Intellectual Property's Role in Open Development	University of Cape Town	11/15/10
Scholarly Communication in Africa Programme	University of Cape Town	02/10/10
Openness and Quality in Asian Distance Education	Virtual University of Pakistan	01/01/10
Open Business Models Phase II	Fundacao Getulio Vargas	06/15/09

The formation of I&N saw the consolidation of three regional ICT4D programs (Africa's Acacia Program, the America's Program, and Pan Asia) into a single focus on Information and Networks. That shift (summarized in table 2.2) formalized otherwise gradual shifts in focus, modality, funding, staffing, and the like.

Table 2.2: Comparing the Old and New Prospectus

	Old Prospectuses[1]	**New Prospectus[2]**
Main Focus	Access to ICTs, which supports health, education, livelihoods, innovation, good governance, and networks, for participation in the knowledge society.	Openness as content available on networks, and the means people use to connect, share, organize and produce in and through information networks.
Thematic Focus	Social service delivery; Empowerment; Economic development; Inclusion. Gender, health, education, and livelihoods.	Creative industries; Open governance; Open learning; Open science.
Expected	Localized access to ICTs; Poverty	Improve quality of openness; Protect

Outcomes & Impacts	reduction; Thriving networks; Digital rights; Innovation; Gender equality.	rights of citizens; Catalyze inclusion of marginalized communities; Deepen and broaden the field.
Strategies	Influence policy; Promote ICT integration; Facilitate grassroots education; Generate knowledge.	Encourage innovation; Generate knowledge; Influence Policy; Build research capacity.
Modalities	Funding for small grants; Funding for long-term capacity-building; Holistic programming; Network building; Cross-discipline methods/solutions.	Support for thematic research networks; Support for research grant competitions; Capacity building activities to support the work of grantees.
Strategic Tensions	Need for evidence about impacts; Access vs. education; Country need vs. regional projects; Shift from scarcity to ubiquity	Research quality versus capacity building; Development interventions versus objective research; Directive versus responsive research support.
Methodologies	Pilot projects; Applied research; Cross-regional comparisons; Socioeconomic impact studies; Ethnographic Action Research; Best practices	Action research that extracts general replicable principles that can be scaled up; Cross-regional comparative case study research; Experimental and quasi-experimental research designs; Case studies for evidence-based advocacy; Field building work.
Policy Issues	Affordable and equitable access; Intellectual Property Rights; Privacy; Changing technologies; Open source.	Digital openness; Privacy; Censorship; Intellectual Property Rights

[1]Based on a compilation of the *Acacia Prospectus 2006-2011*, the *ICT4D Americas Program Initiative Description of the program for 2006-2011*, and the *Pan Asia Networking Prospectus 2006-2011*.
[2]Based on a summary of the *Information and Networks Program Overview 2011-2016*.

Of particular importance to this evaluation, research in the area of open development embodies an evolution away from ICT4D work which was, in general, oriented towards the resolution of the digital divide as a means to address participation in the knowledge society. In contrast, while open development understands that access continues to be a problem in many parts of the world, it elects to turn its attention to the availability and quality of the content that flows across digital networks, and the social processes that people engage in to produce, organize or share that information. As a result, research on open development embodies a shift from enabling access, which *tends* to be a more technology or informatics centered concern, to supporting open content and associated processes, which *tends* to be a content and social

systems centered concern. This is reflected in I&N's commitment to enabling "greater understanding of how information networks positively and negatively affect developing countries' citizens, especially citizens belonging to marginalized communities" (I&N Prospectus, p. 9).

In addition, I&N emphasizes the use of research networks as a programming modality. In particular, the program emphasizes the production of cross-cutting results including cross-regional results. In order to achieve this, principal investigators are contracted to oversee the implementation of large research networks organized around competitive calls for proposals. In this approach, project officers contribute to the articulation of a 'field of study' which serves to orient the work of IDRC-funded research networks. Meanwhile, research support activities are carried out by IDRC-funded projects that address specific concerns such as methodological needs, evaluation, policy-influence or mentorship.

Table 2.3: Main Foci and Shifting Emphases of I&N Projects

	Old Prospectuses		New Prospectus	
Open Education	Openness and Quality in Asian Distance Education Technology Action research project focused on building policy and technical capacity for digital OERs, and assessing the viability of OERs for increasing access to distance education in Asia.		ROER4D: Research on OERs for Development Cross-regional multi-project network conducting comparative assessment of barriers to OER use by teachers.	
Open Government	Open Data for Public Policy in LAC Action research project focused on developing open data strategies for governance institutions in Latin America.		From Data to Development Cross-regional multi-project network conducting comparative assessment of the contributions of open data to decision making for development.	
Open Science	SCAP: Scholarly Publishing in Africa Exploration policy, technology, management, sustainability and performance metrics best practices for promoting research production & dissemination by African Universities.	Arab Knowledge Society Mapping of Middle East/North Africa (MENA) region content in Wikipedia and capacity building to promote inclusion of MENA region content.	Open Scholarly Publishing in LatAm Creation of API to generate combined metadata from 3 open publishing platforms, and associated assessment of impact of open publishing in Latin America.	Catalyzing Open Science 4 Development Cross-regional multi-project network studying conditions under which open approaches contribute to application of research to development goals.
Open Business Models	Open Business Models LAm II Practical policies / strategies to address the informality of open business models in select LAC countries.	Open African Innovation Systems (Open AIR) Research network exploring African IP law and innovation systems.	Open Business Models LAm III Study of compensation system for LAC creative workers in a networked society.	

While of course shifts in research emphasis happen gradually over time, table 2.3 helps to draw out the shift in focus from older projects to newer projects. This is particularly apparent with the open science, open government, and open education projects, where large, cross-regional, multi-project research networks are currently being set up. These contrast with previous, regionally focused networks.

In addition, we observed that the research agenda for open development is going through a gradual process of maturation. Particularly in the three more applied fields of research (OGD, OER, and OS), earlier projects focused on establishing policy, technological and applied competencies and awareness around an emerging concern. These projects set up openness initiatives, engaged in openness literacy, and debated foundational definitions. Later projects are building on previous work to establish more analytically oriented research agendas. With openness initiatives, openness literacy, and foundational definitions in place, it has become possible to contemplate comparative work. This does not mean that applied work is being left behind completely, but rather that, where it takes place, it is being situated in a comparative framework so that common findings can be drawn out within and across thematic areas. Thus, I&N's work on open development has 'shifted the goal posts' over time, refining the focus and advancing the agenda as the field has emerged. Note, however, that the situation has been different in the case of OBM. Here the focus has been on understanding the conditions necessary to facilitate innovation in a changing digital context. So in what follows, we often discuss OBM separately from OGD, OER and OS.

2.3 Research Findings

The following offers an overview of research findings from I&N supported research projects in the field of Open Development. Research has focused on developing a greater understanding of the "context, dimensions, variations, implications, and quality of digital openness" (I&N Prospectus, p. 10). Here we present findings and outputs from this work, organized into the three outcome categories drawn from the I&N Prospectus (network building and innovation, research recognition, and affecting open policies and practices). The examples presented here offer a general sense of the types of evidence produced by I&N's partners, selected based on their significance or impact, as measured by citations or uptake, where possible.

How can networks be leveraged to produce innovative new applications and evidence about the impacts of open phenomena in developing countries?

Leveraging networks to produce innovative applications and evidence is a particularly appropriate research objective for a program focused on open development, given the potential of networks to facilitate crowd sourcing, participatory data analysis, data verification and the like. Several of I&N's open development projects have made significant use of networked modalities to facilitate the research process, with notable results.

One interesting example of this comes from the Arab Knowledge Society project. The goal of this project was to identify 'who represents the Arab world online' through an analysis of the

knowledge production activities of Wikipedia editors. In order to identify the location of these editors, the research team needed to code data from user pages. This laborious work was initially done through text mining (done by a computer program). What is interesting, from a networked innovation point of view, is that the team then used CrowdFlower to *verify* the results of the computer-generated data. As explained in the final report:

> "Crowdflower workers were tasked with identifying the origin and current location of users from their Wikipedia user pages. David Palfrey set up this task and uploaded the text from the user pages to Crowdflower for review. It took approximately six weeks to set up this task. Once available, the task was completed by the users in less than six hours. … We then compared the results of Crowdflower and our automated program in its current version." (Graham et al., 2013)

This work resulted in an accurate and verified geolocation database of Wikipedia editors writing about the Middle East. This enabled the project to demonstrate that the editing of this 'global' resource is carried out primarily by individuals located in the global North. So here is a clear case of using networks to produce evidence about the impacts of open phenomena in developing countries.

Another example comes from the Quality in the Open Scholarly Communication of Latin America Project. In this case, application programming interfaces (APIs) were developed to network together four open Latin American journal indexes (Latindex, Scielo, Redalyc, and PKP), through the meta-integration of their data. As the project's principle investigators explain, "The data integration and open databases about to be deployed … will allow members of this project and the public to analyze various dimensions of scholarly production utilizing data that was already routinely collected, but was never curated or made available to the public" (Alperin & Fischman, 2014). Here is another demonstration of how networks can be leveraged to produce new evidence about the impacts of open development in developing countries. In this case, the API created by the project will allow researchers to generate lists of journals by country or subject category, institutions participating in scholarly publishing in the region, and track downloads of articles for research on usage patterns.

Networks have also been leveraged by I&N's open development projects in more familiar ways, both with and without the support of information technologies. The Open African Innovation Systems Project (Open AIR), for example, organized its research around four regional hubs (North Africa, West/Central Africa, East Africa, and Southern Africa) as a means to develop sub-regional networks of researchers working on IP issues. This promoted the development of centres of excellence on IP issues, while also connecting local researchers to each other at the regional level. One of the aims of this project was to produce research about Africa's future IP needs, in order to facilitate the production of IP policy from within the region, rather than having it be adopted from outside of the region. The principle investigators explain that, "Drawing case studies from such diverse contexts will enrich the dataset available for analysis, which will in turn enhance the effectiveness of subsequent foresight research by incorporating multiple

different but related perspectives" (Schonwetter & de Beer, 2010, p. 72). The project's foresighting research leveraged these networks to produce three scenarios for the future of IP, openness and innovation. The data used to produce these materials was drawn directly from actors in the four hubs, and was refined during meetings held in and across research hubs.

Finally, one of I&N's new projects, which operates at a global scale, has developed innovative approaches to coordinating research across large distances and regional divides. Research on Open Educational Resources for Development (ROER4D) brings together 12 projects distributed across Asia, Africa and Latin America. In order to ensure the research results from these various projects contribute to the goal of evidencing the link between open educational resources and development impacts, the project makes heavy use of web-based platforms of various kinds. Participants have open access to project information through the project's website, http://roer4d.org, and also have access to an administrative portal which supports the 'back end' of the project (http://oerresearchhub.org). In addition, the project holds regular "Question Harmonization Sessions" using an online video-conferencing program to promote the production of cross-cutting results among projects (see figure 2.2). The impacts of this communication strategy are being actively followed through the project's evaluation strategy. In fact, in October 2014 the ROER4D Network Team met with I&N's Developing Evaluation Capacity & Communication in Information Society (DECI-2) project to discuss strategies for collecting evidence about the impacts of the project's communication strategy.

Figure 2.2: ROER4D Question Harmonization Session 15: ROER4D Communications Strategy & Audience Analysis feedback, October 15, 2014


Source: http://roer4d.org/project-events
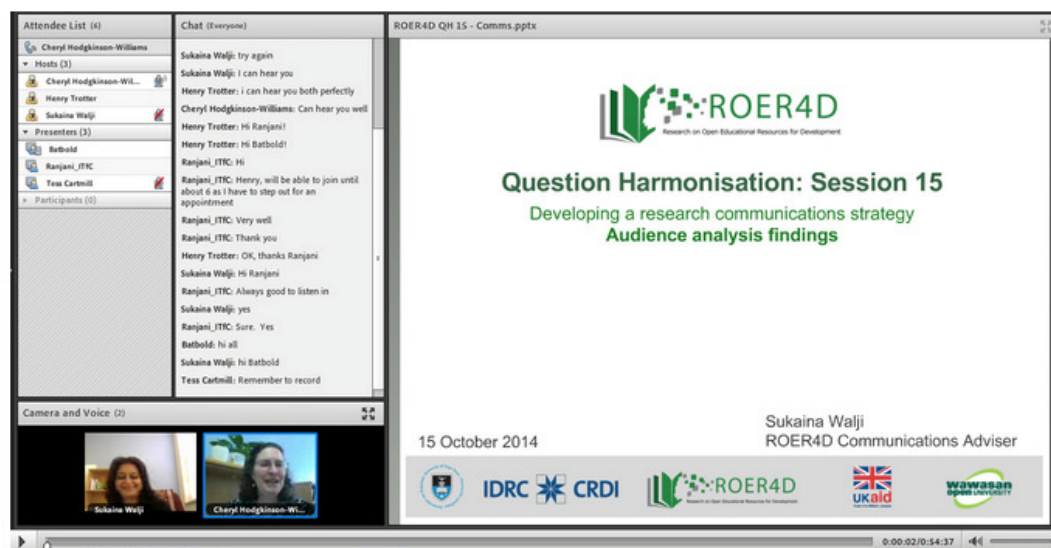
What are good practices in Open Development, and what are its impacts?

Before the impacts of open development initiatives could be studied, I&N had to first develop a solid understanding of open development activities happening within regions and across the four thematic areas. Thus I&N's early work on open development tended to focus on surveying

the field to identify existing practices, and also establishing core definitions of open education resources, open government data, open science or open innovation (see chapter 4 for further discussion of this point). As a result, I&N has produced a wealth of information about good practices in open development. Projects have gone a long way towards systematizing this information in briefing documents, toolkits, workshop materials and the like.

A good example of this is the Asian Distance Education project which focused its attention on developing quality assurance standards and performance indicators for ICT-based distance education, as well as assessing the viability of open educational resources. One of the main concerns this project addressed was whether quality education could be delivered via distance and online modalities. Research conducted by the project demonstrated that while the use of open educational resources in the region is nascent, it was viewed by >70% of survey respondents as a chance to enhance their reputation and develop new courses quickly. At the same time, the research revealed strong concerns about inability to control use of content, loss of recognition for work, and concerns around legal infringement. In addition, it was discovered that 2/3 of institutions surveyed lacked policies around the use of OERs, as well as information about how to license their own materials (Ng, 2013).

Figure 2.3: OER Training Toolkit
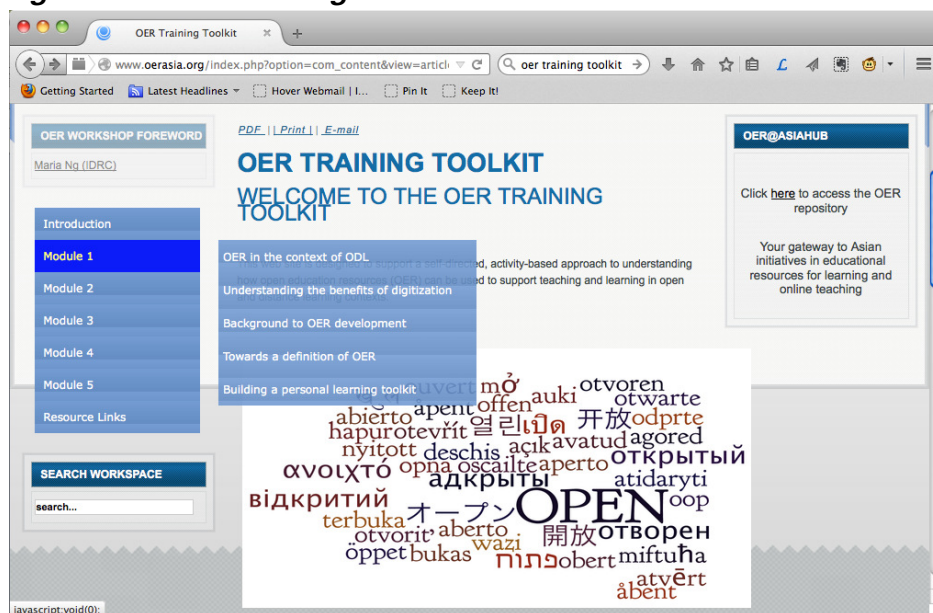
Source: http://www.oerasia.org/index.php?option=com_content&view=article&id=10&Itemid=10

These findings demonstrated a need for new models of quality assurance in the production of educational resources for use in distance education and open educational platforms. In response, the project produced an online, openly available OER Training Toolkit (see figure 2.3), as well as two books, one focused on quality assurance, and the other on good practices in open education for higher education (figure 2.4). It also supported the production of open educational modules for use in distance education initiatives, and in this way was directly involved in getting the nascent field of open distance education 'up and running' in Asia.

Figure 2.4: OER Publications on Quality Assurance and Good Practices

Additional research conducted by this project demonstrated that, counter to the views of skeptics, distance education can be effective for developing knowledge and skills, particularly in hard to reach or remote communities. Rural farmers in Cambodia, grade seven students in Cambodia, and nurses in Mongolia and the Philippines exposed to online distance education performed as well on exams and assignments as counterparts taught via face-to-face methods (Ng, 2013). This work is the direct forerunner of ROER4D, which investigates the impacts of *openly produced and distributed* pedagogical processes on learning. So here is a clear example of how an earlier project helped to establish open development activities, that later work can leverage for comparative research.

Similarly, two regionally-based projects working in the area of open science produced foundational information in the field of Open Publishing that has established the baseline for a new global project on this theme: Catalyzing Open and Collaborative Science to Address Global Development Challenges. The Scholarly Publishing in Africa Program (SCAP) researched the existing rewards and measurements systems incentivizing publishing within African universities with the purpose of proposing alternative systems. The project supported research on Altmetrics for the African context, meaning the design of research incentive systems that will drive the production of knowledge that is relevant to African development needs. Factors taken into consideration here included publishing platforms, models for research and publication, IP and licensing systems, and the policy, administrative and ICT support systems available at African universities. Subsequently, the Open Publishing in Latin American project resulted in the book *Open Access Indicators and Scholarly Communications in Latin America* (CLACSO University Press, 2014) which offers guidance on how to assess the growth and use of openly published resources in that region. These metrics are not only useful to researchers, but also

serve publishers and database designers in the cataloguing and delivery of openly published materials in the region, and as such serve as the foundation for discussions about best practices. The Catalyzing Open Science project will build on these findings by examining the conditions under which open approaches contribute to application of research to development goals.

Figure 2.5: Publications on Open Publishing

In total, across the fields of open governance, open science and open education, a set of definitions and recommendations have begun to coalesce around issues such as the quality of open resources, their modes of production, delivery and accessibility, licensing, and the like. For example, a common finding across thematic areas is that more work needs to be done to ensure that openly published data (whether governmental, educational, or scientific) is produced in formats that allow it to be manipulated and reused. In addition, political, social and economic conditions surrounding open processes have also emerged as an area of concern. We explore these qualifications in detail in chapter 4 of this evaluation, demonstrating that while there are categories or concerns that map across these different thematic areas, they tend to manifest differently within each thematic area of interest.

We feel that it was important to do the work of establishing the field in this way, before it would be possible to begin research on the impacts of open processes on development outcomes. And we observe that I&N has been gradually and deliberately 'shifting the goal posts' over time, driving its projects gradually away from exploratory, applied or descriptive work, and towards more impact oriented studies. So, as described above, Openness and Quality in Asian Distance Education was addressing a nascent field, and literally needed to help set up open content for distance education programming as part of its work. Its successor, ROER4D, not only faces a more mature field, but can also build on the knowledge produced in earlier efforts. This project,

therefore, is geared specifically towards the production of impact data. This is also the case in the field of open government data; Open Data for Public Policy in Latin American and the Caribbean was a highly exploratory project, which facilitated networking and sharing of best practices among government officials in the region, while its successor From Data to Development is much more clearly focused on producing knowledge about the impacts of open government data on state-society relations.

What is the emerging body of evidence informing open development policy?

Looking across the results of I&N's various open development projects, it is evident that good policy is essential to establishing sound conditions for success in open development initiatives. Again, we find that the goalposts have shifted over time in I&N's projects, particularly for OGD, OER and OS. Since earlier projects tended to focus on good practices, they also tended to look at procedures, incentive structures, and bureaucratic environments that would facilitate the establishment and effective open initiatives. These recommendations were often pitched at the level of institutions, such as Universities or specific government ministries. This is important work, and as we explain below, has had important impacts on development processes. However, over time I&N has become increasingly preoccupied with producing evidence about the impacts of openness that stands apart from the pressures of implementing and/or promoting a particular program. This kind of evidence is essential to demonstrating the benefits of openness to policy-makers, and in particular, instructing them on how best to structure legal frameworks, policies and supporting environments in ways that facilitate the positive effects, and curtail the negative impacts, of open initiatives.

Figure 2.6: Final Publication of the SCAP Project
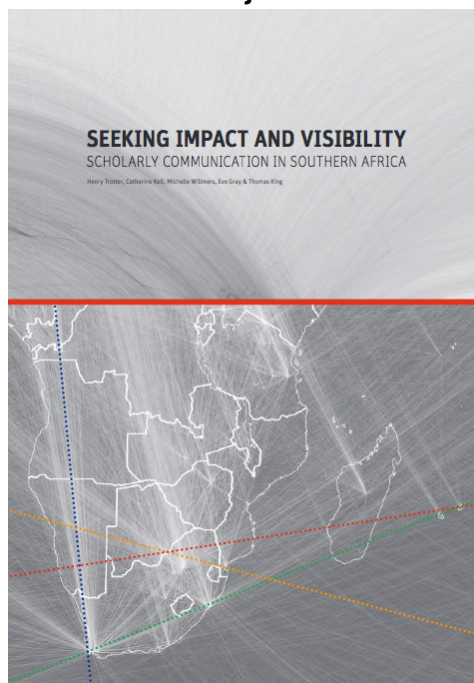
For example, the SCAP program worked closely with a small group of African universities to understand their needs around scholarly production and dissemination, and produced recommendations about University-level policies that would advance work in this area. For example, Swan et al.'s 2014 report *Costs and benefits of Open Access: A guide for managers in southern African higher education* offers university managers practical suggestions on how to incentivize research and manage university repositories. And the final publication from their project, *Seeking Impact and Visibility: Scholarly Communication in Southern Africa* (figure 2.6), gets right to the point when it recommends that governments "build a national research infrastructure" (Trotter et al. 2014, p. 233).

As the principle investigators of this project explained, national and regional policy frameworks for scholarly publishing in Africa are so out of date that universities tend to be the main locus of policy shift. They expect that eventually national and regional policy frameworks will have to adjust to catch up with practice, rather than things happening the other way around. The risk here, however, is that policy will emerge to accommodate entrenched practices that may or may not reflect independent analysis of development impacts. So in more recent open publishing projects, such as Catalysing Open and Collaborative Science, I&N has asked that more attention be focused on producing independent evidence that can inform the activities of both localized open development policy-makers, and actors at the state or regional levels.

The Openness and Quality in Asian Distance Education program similarly provided policy guidance on the establishment of open education programming, however in this case their advice was directed at both a university and a government ministry. Specifically, a policy report entitled "Open Distance Education Policy Framework and Good Practice Guidelines for the Kingdom of Cambodia" was submitted to the Cambodian government, and "Open the Portals: Introducing Open Educational Resources (OER) at University of Madras (UNOM) and Affiliated Institutions" was produced for that institution. Again, in these cases, recommendations are oriented towards the establishment of programming in an emerging area. The ROER4D project, which is the successor to this initiative, is intended to produce evidence about the specific impacts of open pedagogical processes and content on learning, with the objective of enabling policy-makers to fine-tune their management of open educational programming.

The situation with OBM has been different. Here projects have targeted the factors conditioning innovation and productivity within digital environments. For example, Open Business Models Phase II targeted the technological context for open development, rather than regulating its specific practices. The project demonstrated the importance of LAN-Houses (cybercafés that feature local area networks for gaming and other bandwidth intensive collaborative activities) for facilitating local cultural production, particularly in poor and rural areas. In particular, LAN-Houses, apart from being small businesses themselves, are important incubators for local cultural industries or digitally-based businesses within local communities. Similarly, Phase III of the Open Business Models project turned its attention to copyright collection societies, which collect royalties for licensed works on the behalf of the individuals who own them. The project was premised on the need to update these incentive systems to reflect cultural production within a digital era. It focused on the need to update policy frameworks that balance the rights of

artists and the rights of consumers, given the emergence of click-based advertising revenue in online content distribution, as well as flat-rate content distribution services, such as Netflix.

Similarly, the Open African Innovation Research project focused on structuring the discussion around openness for development, in ways that ensure it reflects local or regional conditions and needs. This work might be described as shifting the policy paradigm for OBM, both by introducing new considerations into policy debate, and also by changing the locus and nature of the policy-making process. The project studied the question of how to potentiate IP systems to facilitate innovation in Africa. In this case, the project (which was organized into regional hubs as described above) undertook a series of culturally and historically informed foresight exercises to imagine what the future of IP regulation in Africa might look like. Emerging, as they did, out of a network of regionally-based scholars, these exercises aimed to build up a new cadre of policy informants and policy-makers who can influence IP discussions in Africa 'from within.' Meanwhile by pursuing a historically and culturally informed, future facing exercise, participants were encouraged to imagine IP policy from within the African context, rather than in reference to international debates. In combination, these two features of the project served to challenge the paradigm for IP policy in the region, which has tended to adapt to international trends rather than responding from the basis of local needs.

Figure 2.7: Open AIR Publication IP Policy and Policy-Making in Africa
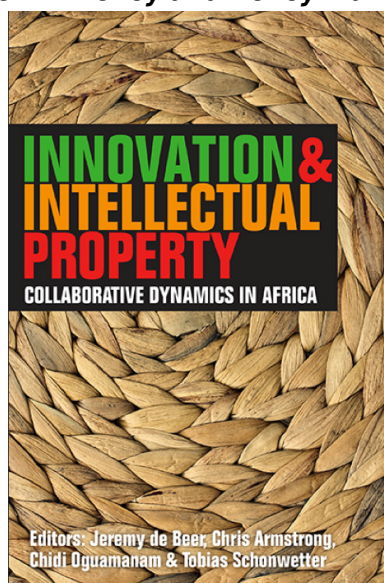
The results of this process included the book *Innovation & Intellectual Property, Collaborative Dynamics in Africa* (UCT Press, 2014) (figure 2.7), as well as a series of posters summarizing new policy approaches and challenges for IP policy-makers in Africa (figure 2.8). In particular, the project found that Africa features unique modalities of innovation and creativity, and visions of socio-economic development that require alternative IP policies, including collaborative approaches to IP. As the book concludes:

Long before it became fashionable to extol the virtues of collaborative, open approaches to IP, these were factor endowments inherent in the African innovation and creation experience. … African innovation policy-makers and actors will need to move away from dominant preconceptions of IP as involving mainly patent, copyright and trademark protections. Informal and flexible protections such as trade secrets seem much better suited to the informal sector… (de Beer et al., 2014, p. 389)

The book offers specific recommendations to IP policy makers: to examine the future needs of the content when setting IP policy, to broaden conceptions of IP, and to take time in making decisions about IP policy (since when it comes to facilitating development, having no IP policy is better than having the wrong IP policy).

Figure 2.8: Posters Based on Open AIR's Foresight Exercises
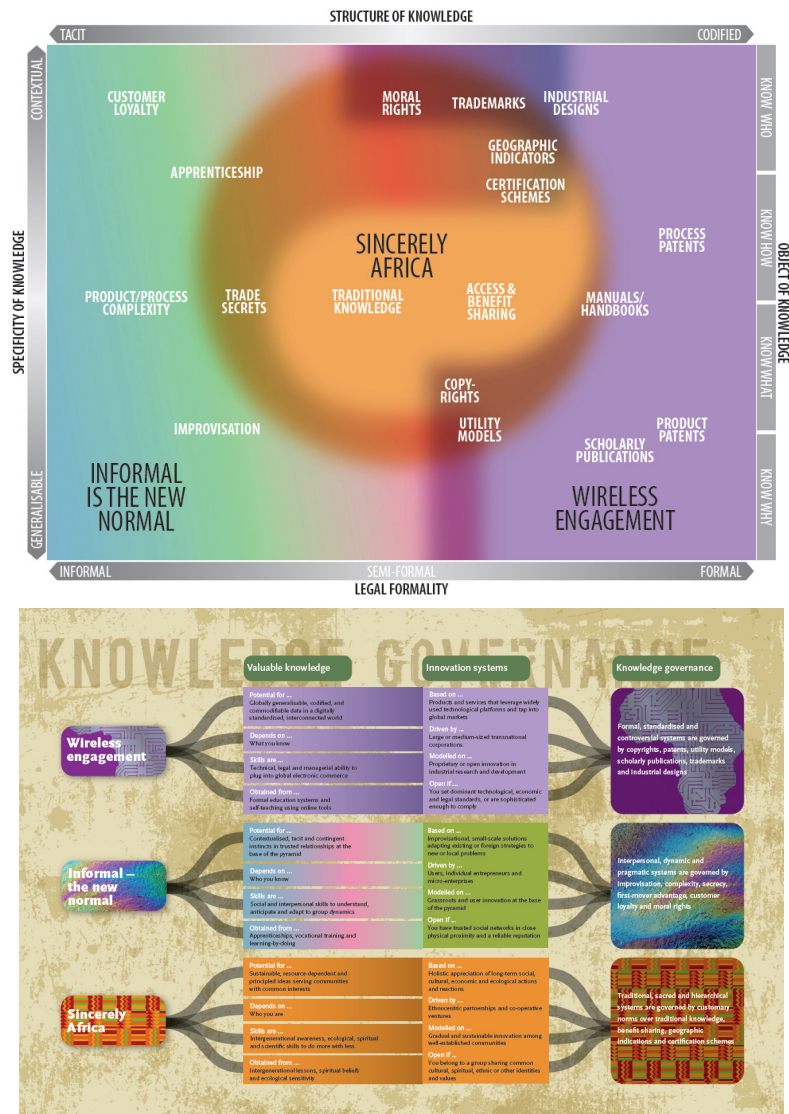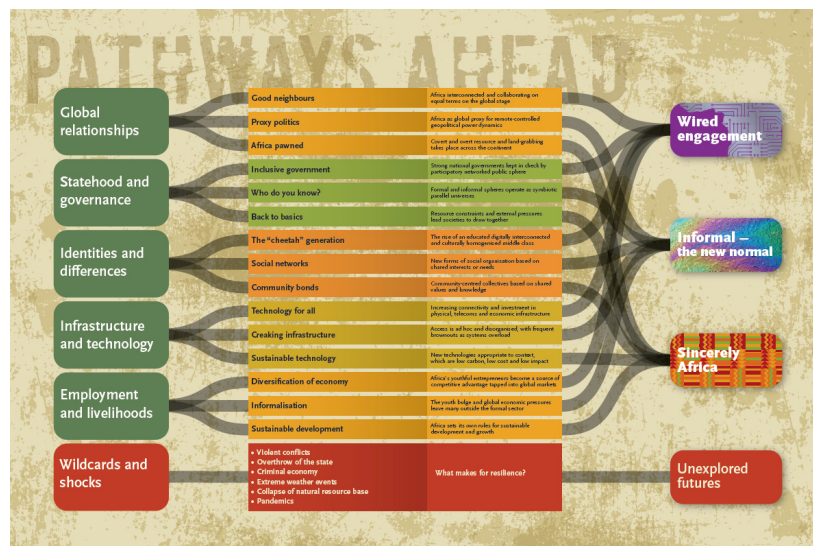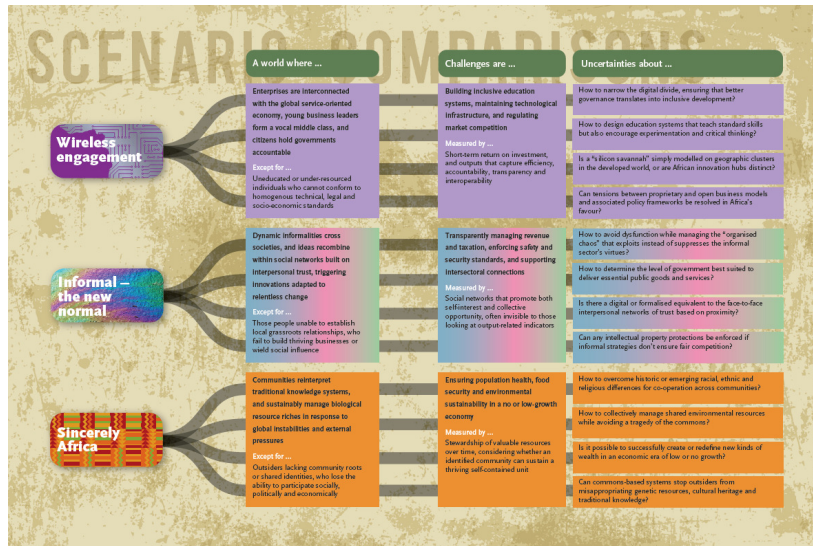
2.4 I&N Open Development Outcomes

The I&N Prospectus identified three outcome areas for the Open Development research area: Network Building and Innovation, Research Recognition, and Policy & Practices (p. 14). In this section we review outcomes in each of these areas. Rather than focusing on research results (establishment of networks, production of applications and evidence, establishment of good practices, identification of impacts or discovery of policy recommendations) this section focuses on research outcomes – the impacts that result from research results.

Networked creation of new applications and evidence

I&N's Openness outcome area was, according to the I&N Prospectus, expected to produce networks in each of the four thematic areas to facilitate the production of new applications and evidence about the impacts of OERs, OGD, OS, and OBM. This was a significant outcome area given that networks were identified as I&N's principal programming modality. However, not much detail is provided as to how networks are intended to facilitate innovation. In this section, I&N's networking outcomes are organized into three areas: 1) creating networked environments for innovation, 2) leveraging networks to drive innovation, and 3) scaling 'up' and scaling 'in.'

a) Creating networked environments for innovation

I&N has successfully built on past projects and new relationships to develop networks in each of its four thematic areas. Earlier projects, particularly those established before the current prospectus, tended to form regionally-based networks. Indeed the Open Data for Public Policy in Latin America and the Caribbean project literally started by surveying the region to find out who was doing what in the field of open government data. From this work, they were able to create regional connections, and eventually convene a high level regional meeting on this theme. In other cases, prior projects were reoriented towards work in this emerging area. In total, regional OBM networks were set up in each of Africa and Latin America, a regional OER network was established is Asia, regional OS networks were created in each of Latin America and Africa, and a regional OGD project was convened in Latin America.

Recently, I&N has built on these regional networks to establish *globally* networked projects in three of the thematic areas: OER, OS and OGD. The evolution from regionally-based to global projects is significant because it demonstrates the ability of the networks to leverage existing knowledge and relationships to drive forward emerging research agendas. Specifically, this shift forms part of the evolution of I&N's research agenda, away from facilitating the creation of open development initiatives, and towards comparative research about the mechanisms driving outcomes.

Over time, these networks have become increasingly sophisticated in their use of online tools to facilitate collaboration among researchers. For example, the ROER4D program has convened over 15 online web seminars among its globally distributed projects, and has also held frequent meetings with other research teams such as DECI-2. Some additional networking outcomes include:

- The Open AIR project used a regular newsletter, social media content, and regional meetings to build trust among collaborators, and a strong foundation for knowledge sharing.
- The Arab Knowledge Society project supported Wikimania, an annual conference for wiki editors, and set up a facebook page called MENAwiki to drive collaboration among editors from that region.
- From Data to Development has established a Zotero group to share references related to open government data.

- The Open Data for Public Policy in Latin America and the Caribbean project held the first "Regional Conference on Open Data for Latin America and the Caribbean" in Uruguay in June 2013 bringing together key players working on this issue in the region, which promoted the establishment of a community of open government data policy-makers in the region.

Network building has also been a significant locus of capacity building in I&N supported projects. Earlier projects put particular emphasis on building basic literacy around openness. For example, the Open Government Data in LAC program gave workshops in 7 countries to expose government officials to this emerging area of concern. Similarly, the Arab Knowledge Society project provided workshops to editors from the MENA region to enhance their participation in the Wikipedia space. This type of work is fundamental to creating networks of experts in a particular thematic area. A particularly interesting example of capacity building within a research network are the young researcher mentorship opportunities offered by the Open AIR project. This included a fully funded post-graduate fellowship for scholars from the African continent in the Intellectual Property Law and Policy Unit at the University of Cape Town. During focus group discussions with the Open AIR project, this program was highlighted as particularly important to the development of the network, and has clearly become a source of membership in the network over the longer term. In addition, the program also launches a specialized course in the developmental dimensions of intellectual property, also at the University of Cape Town. This course reportedly uses research produced by the project in its teaching.

The networked research experience is highly valued by I&N's recipients, and is cited as one of the greatest values that they take away from participating in IDRC-sponsored projects. In our interviewing and focus group work for this project, PIs and sub-project recipients alike highlighted how important it was to them to be in contact with fellow researchers working in their field. There is hard evidence to back up this finding as well. In 2014, the project From Data to Development conducted a midterm process evaluation with their large group of 17 sub-projects located in 14 countries. They reported an overwhelmingly positive experience from participating in the ODDC network.

However, there are some particular challenges worth mentioning when it comes to building networks. One is balancing the use of open calls for research proposals with the need to build strong teams that can share results. In focus group meeting with some of the research networks it was apparent that some were much more cohesive than others; additional thought can be put into strategies that ensure sharing and productive networking among sub-projects within research networks, whether this comes in the form of face-to-face meetings, or the creative use of networked technologies. Another challenge revolves around balancing research networking with policy networking. There seems to be an assumption that policy leaders can be identified within research networks, but aiming for this may risk putting research collaborations and policy collaborations at cross-purposes with each other.

b) Leveraging networks to drive innovation

It is one thing to establish networks, but quite another to leverage them for innovation or knowledge production. Several of I&N's projects have leveraged networks to create open content as well as open platforms to share this content, and networks have also been leveraged in creative ways to drive the production of new innovations and new ideas.

One of the best ways of leveraging networks to drive innovation is precisely by making data open, something which all of the open networking projects have pursued to a lesser or greater degree. All projects have set up web pages or blogs where they openly publish project materials. However some projects have gone much further, producing open content that drives forward practice and/or research about that practice. For example, the OER projects have both contributed to the production of open courseware for general education, higher education and technical training. And the Asian Distance Education project also set up an online portal for the distribution of open educational resources (http://www.oerasia.org). Several projects have also created training modules, briefing documents or specifications of best practices that are openly available online for the use of practitioners.

As mentioned in the research results section above, networks have been creative in their ability to leverage open platforms to produce new applications and evidence about the impact of open processes in developing contexts, as in the case of the Arab Knowledge Society and Open Publishing in Latin American projects. Projects have contributed to innovations in the platforms used to disseminate open data, as in the case of the Open Scholarly Publishing in Latin America project, or made open data sets available, as in the case of the Arab Knowledge Society project. In the former case, an API was created that would link together academic search engines. The resulting information can be used to improve the quality of search engines, and also facilitate research on open publishing. In the latter case, several geometrics datasets were produced, and some of these have been embedded into Tracemedia's "Mapping Wikipedia" tool. These are freely available from http://wikiproject.oii.ox.ac.uk/data upon request. Openly published research data can be leveraged by both project participants and by researchers doing future studies.

c) Scaling 'up' and Scaling 'in'

A final measure of networked innovation is that of leveraging networks to catalyze the benefits of knowledge or innovations. A 2008 Brooking's Institute report observes that "development interventions—projects, programs, policies—are all too often like small pebbles thrown into a big pond: they are limited in scale, short-lived, and therefore without lasting impact" (Hartmann & Linn, 2008, p. 2). The report goes on to recommend "expanding, adapting, and sustaining successful projects, programs, or policies over time for greater development impact" (ibid.).

The question of how best to achieve scaling is unresolved, but networking is often identified as a potential contributor, if only because it facilitates knowledge dissemination between differing local contexts. However more careful thought can be done about the relationship between

networks and scaling. For example, the term scaling 'up' is suggestive of a hierarchical approach, in which local techniques are adopted nationally, then regionally, then globally. However we might also talk about the need to scale novel ideas or new technologies 'in' to local communities through networked processes of adoption and appropriation. What is more, it is often unclear in discussions of networking and scaling whether the networks are meant to serve as a means of dissemination, a tool for adaptation, a structure for capacity building, or a policy community.

Taking all of this into consideration, I&N's open development projects have not done a lot of actual 'scaling up' in their work. Instead they have tended to pursue a series of other avenues designed to promote social change processes thought to be of worth. These include 1) raising awareness and offering basic training, as in the case of the Open Data for Public Policy in LAC project, 2) pursuing interventions 'at scale' and then working to scale them 'in' to local communities, as in the case of the Asian Distance Education project; 3) pursuing interventions that legitimate and institutionalize social change processes that have spontaneously scaled, as in the case of the Open Business Models in Latin America project, or 4) identifying the mechanisms that work to drive the scaling of open development initiatives.

This last point is particularly important for our purposes. The Brookings Institute report identifies several essential elements for the achievement of scaling up, which correspond to a surprising degree with IDRC agendas and the key findings of open development projects. These include the need for strong leadership, the identification of political constituencies, conducive policy environments, institutional support, the right incentive structures, and strong monitoring and evaluation. These findings overlap heavily with the findings of, for example, the SCAP project and the Open AIR project. And these themes came up repeatedly in interviews with PIs conducted as part of this evaluation. For example, in conversation, one of the PIs from the Open Scholarly Publishing in Latin American project pointed out that the innovations produced by their project faced a crucial limitation: most universities in the region provide inadequate support for the production of quality research. This undermined both the incentive to pursue open publishing, and also the demand for locally produced knowledge.

As none of I&N's open development networks are specifically designed for the purpose of scaling up, it is somewhat unfair to evaluate them against this criteria. However it is interesting to note that their activities often do contribute to this end either directly or indirectly. This can happen through something as simple as the open dissemination of information in briefing documents, toolkits, workshops, and the like. Having said this, that there is clearly more to scaling up than is immediately apparent. Perhaps it is more appropriate to focus on the goal promoting the uptake of worthwhile social change processes, rather than attempting only to amplify or replicate particular impacts. Clearly, on this score, I&N's research networks are quite effective in identifying channels to promote uptake, and putting them into action.

As I&N continues to advance its research agenda, it is considering the development of cross-thematic research networks in order to identify change mechanisms common to OER, OS and OGD. The place of scaling in these kinds of project bears further examination: is the goal to

broaden and deepen the field of knowledge production about open development, or is the goal to augment social change processes and catalyze development impacts? How do these two goals relate to each other, and how best can networks be leveraged to facilitate them?

Identification of best practices and research on impacts

When it comes to research recognition, the I&N Prospectus defines success in terms of the citation, use and recognition of open development works by a global community of peers, the media and policy-makers. As described in the introduction to this report, Open Development is a new and emerging field, so we first look at I&N's efforts to establish the field, create awareness, and attract the interest from key people. We then look at uptake of research findings by peers, the media and policy-makers.

a) Creation of the field

As is explained in the introduction to this report, I&N has been actively involved in establishing Open Development as a field of development research and practice. This is not to say that research on open networked processes is completely new, or that no one was looking at topics like internet facilitated government transparency or openly produced educational resources before the I&N program came along. However, I&N has gone a long way towards identifying key debates, establishing a set of theoretical and methodological preoccupations, convening networks of scholars, and creating platforms for knowledge dissemination. These efforts have concentrated attention on open development as a specific focus for theory, policy and practice.

In 2008, Smith and a team of colleagues produced a working paper titled "Open ICT4D", which hypothesized that openness can enable development through the expansion of human capabilities (Smith et al, 2008). This paper served as the foundation for a 2009 call for papers, and 2010 meeting about open development held in Ottawa. Several of the papers presented at this conference appeared in a special edition of the journal *Information Technology and International Development* on open development, as well as in *Open Development: Networked Innovations in International Development* (Smith & Reilly, 2013). In addition, I&N team members Matthew Smith and Laurent Elder offered an explanation of how 'open' enabling environments can support the creation and diffusion of knowledge among development protagonists, which in turn can help drive local innovations (Smith & Elder, 2010).

There are several indications that these works have garnered recognition among academics and academically-oriented practitioners. For example, in September 2012 the Open Knowledge Festival in Helsinki, Sweden created an online platform where people could write about 'What Open Development means to me.' The 2014 meeting of the working group on the Social Implications of Computers in Developing Countries of the International Federation of Information Professing (IFIP) included a call for papers for a session on open development, and the subsequent 2015 meeting dedicated itself entirely to this theme, focusing on 'Openness in ICT4D: Critical Reflections on Future Directions.' This meeting will be held in Sri Lanka in May 2015. Most recently I&N was invited to give a special panel session on open development at

the International Association of Media and Communications Researchers (IAMCR) Annual Conference in Montreal, also in May 2015.

High profile individuals in the field have also taken up the question of open development. Yochai Benkler, the famous theorist of peer-to-peer production and open social processes, penned the foreword to Smith and Reilly's volume on open development. Michael Gurstein, the editor of the *Journal of Community Informatics*, wrote an editorial about open development, which, while critical, serves to generate debate on the topic.[1] Robin Mansell, one of the world's top experts on international policy for the information society, has participated in I&N's open development activities and produced the foreword for the book *Enabling Openness: The future of the information society in Latin America and the Caribbean (*Girard and Perini, 2013). And Richard Heeks, one of the world's most recognized names in ICT4D research, has also taken up this theme in his writing.[2]

Figure 2.9: Key I&N Publications on Open Development

Another measure of success is I&N's ability to convene significant actors working on open development, both in research partnerships, and also through calls of papers within research networks. I&N's partners in this area read as a who's who list of key international and regional organizations. These include Open Knowledge, the Oxford Internet Institute, the Berkman Centre at Harvard University, ECLAC, W3C, the World Bank's Open Data Initiative, and the World Wide Web Foundation. And projects have established partnerships and working relationships with organizations such the Wikimedia Foundation, the World Intellectual Property Organization (WIPO) and the World Wide Web Foundation.

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[1] Available here: https://gurstein.wordpress.com/2010/12/01/the-idrc-and-%E2%80%9Copen-development%E2%80%9D-ict4d-by-and-for-the-new-middle-class/

[2] See: http://www.seed.manchester.ac.uk/subjects/idpm/research/publications/wp/di/di-wp59/

Finally, a measure of the development of a field is whether it is pushing into new areas, not previously explored. This is clearly taking place within I&N's open development networks. The program has supported pioneering development work and research on open educational resources in Asia, open scholarly publishing in Africa, and collaborative online knowledge production in the Middle East. A perfect example of the cutting edge nature of the work of I&N's partners is OBM3 which is looking at the business models behind the Latin American music industry, with a particular focus on collection agencies. Research on collection agencies is a novelty in the world, and has never been done in Latin America. Framing this research in terms of new business models for cultural production is both highly engaging, and also has the potential to produce fundamental shifts in how governments perceive of their role in regulating cultural industries.

b) Cited, used and recognized by peers, the media and policy-makers

It is one thing to create an overarching framework for discussion, but quite another for the projects within the field to produce knowledge that is taken up by peers, the media and policy-makers. Uptake is notoriously difficult to measure. Mere dissemination is not uptake, for example, and even informing peers, practitioners or decision-makers does not guarantee that ideas will be adopted. It is also very difficult to measure uptake across language and cultural barriers. Nonetheless, we were able to identify many indicators of interest in I&N-funded research, as well as indications that these ideas are being taken seriously by change makers.

Figure 2.10: Sir Tim Berners-Lee's thoughts about Open Government Data, from in a Guest Post for Wired Magazine, UK

> The benefit of open data is different but also very important in developing countries. For example, Ghana's government in collaboration with the Web Foundation, is well on its way to creating a portal for the release of open, accessible public data. The **Ghana Open Data Initiative (GODI)** just held Ghana's first **data bootcamp**, bringing together journalists and developers to find, extract and analyse public data to tell better informed news stories.
>
> These developments are encouraging, but the simple message to governments around the world must be consistent and forceful: **raw data, now!** Opening up data is fundamentally about more efficient use of resources and improving service delivery for citizens. The effects of that are far reaching: innovation, transparency, accountability, better governance and economic growth.
>
> I'm interested to see the results of the **Open Data Research network**, which is bringing together researchers from the global south to explore the emerging impacts of open data in developing countries, and to better understand how it is impacting upon decision making and implementation. The network is being led by the **International Development Research Centre (IDRC),** and the **World Wide Web Foundation**, an organisation I founded to keep the Web free (as in freedom) and open, and to help to bring it within the reach of all.

Source: Tim Berners-Lee (2012) Sir Tim Berners-Lee: Raw data, now! Wired.co.uk.
http://www.wired.co.uk/news/archive/2012-11/09/raw-data

One indicator of update is coverage in the media. Not every project has seen media exposure, but some projects have seen extensive publicity through this channel. In particular, the Arab Media project was reported on in some 30 high profile newspaper articles in various languages, including in the Guardian, Gizmodo, Huffington Post, BBC, Wired, Times of Israel, NBC, and the Economist, among others. And from Data to Development received a high profile boost from an editorial in Wired Magazine written by Sir Tim Berners-Lee, inventor of the internet (figure 2.10). In the article, he discusses the importance of promoting open data in developing countries, and singles out IDRC's support of research on open government data as an important example of work in this area. Media exposure also resulted from major achievements, such as the policy changes spearheaded by the Asian Distance Education project, and the Open Business Models 2 project (discussed below).

A second measure of uptake is whether decision makers take on the knowledge produced by projects. Here again there are many credible examples of how I&N-sponsored research is influencing development debates. The SCAP project reports, for example, that UNESCO recently asked to include Neylon, Willmers and King's 2014 publication "Rethinking Impact: Applying Altmetrics to Southern African Research"[3] in a new UNESCO-CODESRIA-AJOL volume entitled "Open Access Indicators and Scholarly Communication in Africa."[4] And Michael Anderson, Director General for Policy and Global Issues at the Department for International Development (DFID), and UK Envoy to a High-Level Panel on the Post-2015 Development Agenda, cited the main findings from the Arab Knowledge Society project at DFID's Open Up! Conference in the fall of 2012.

Of particular note here, the Open AIR project has briefed many key international organizations on intellectual property issues in Africa, including the World Intellectual Property Organization (WIPO), the global Access to Knowledge (A2K) movement, the International Centre for Trade and Sustainable Development (ICTSD), the New Partnership for Africa's Development (NEPAD), the UN Economic Commission for Africa (UNECA), the African Regional Intellectual Property Organisation (ARIPO), South Africa's National Intellectual Property Management Office (NIPMO), and the South Africa's Department of Science and Technology (DST). In their final report they tell the story of their meetings with African union:

> A highlight of our research and policy engagement activities was an hour-long meeting at the end of 2014 with Dr. Mahama Ouedgraogo, Head of Science & Technology, African Union, and Mrs. Mahlet Teshome Kebede, Legal Officer, African Union, in Addis Ababa. Among other things, they discussed with us the African Union's Science, Technology, and Innovation Strategy for Africa 2024 (STISA), considering how this pan-African policy framework can account for the collaborative dynamics of Africa's innovation. When asked, "what capacity do we need for the future," we presented our work on Knowledge and Innovation in Africa: Scenarios for the Future. This meeting laid the groundwork for future partnerships and engagement on issues ranging from the proposed Pan-African

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[3] http://open.uct.ac.za/handle/11427/2285
[4] http://biblioteca.clacso.edu.ar/clacso/se/20140917054406/OpenAccess.pdf

Intellectual Property Organization (PAIPO), the commercialization of science and technology, to validating the knowledge of informal sectors and indigenous communities. (Schonwetter & de Beer, forthcoming)

This same project also circulated copies of their publications to key decision-makers in international organizations, and received a letter of thanks from WIPO Director-General Francis Gurry who said that "These publications will be a leading reference source for better understanding innovation and the role of intellectual property in Africa" (figure 2.11).

Figure 2.11: Letter of Thanks from WIPO Director-General
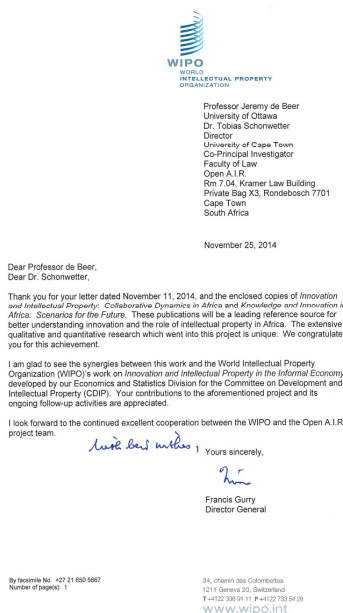
Thirdly, we can look at whether the knowledge produced in projects has impacted the work of practitioners in the field. Again, this is difficult to measure, and it can take time before workshops and training initiatives bear fruit. However there are several pieces of credible evidence suggesting real impact from I&N-supported projects. For example, the SCAP project helped the University of Namibia establish a university repository. During research for this evaluation we discovered that the University has since established a policy on open scholarly publishing.

The Asian Distance Education project successfully promoted the adoption of OERs across all of the educational institutions participating in that project. During our evaluation process, one participant let us know that their university has "now implemented fully online learning mode, integrate the use of OER in our materials, and produce OER in our language." In addition, the Asian Distance Education project achieved several other policy results. Its Mongolian case study piloted the use of open distance learning among nurses in rural and remote communities. The methods developed in this project were incorporated into the training program of the Health Sciences University of Mongolia. A regional survey of practices and challenges with OERs among academic institutions in Asia influenced the development of OER policy guidelines for

the Wawasan Open University. And an examination of reusable learning objects in open education initiatives resulted in a set of policy recommendations for the University of Madras.

Finally, our evaluation's survey results from participants in Open Government Data in LAC indicated that the project helped establish an open data initiative in the city of Montevideo; sparked the publication of local tourism data in Jamaica, as well as the development of APIs to support the development of new tourism apps; and introduced open data into the education sector in the Dominican Republic, which prepared local professionals to engage with the World Bank on a project in this field.

A final form of recognition sometimes comes in the form of awards. The Virtual University of Pakistan won the 2012 Open Courseware Consortium Outstanding New Site Award (figure 2.12). This was a central platform for the Asian Distance Education project. And the same conference also recognized the work of one of ROER4D's advisors, Fred Mulder. Mr. Mulder won a Leaderhip award for his work in promoting Open Educational Resources as an important instrument for Lifelong Open and Flexible (LOF) learning and for his leadership in establishing OER global networks, especially the Global OER Graduate Network (GO-GN).

Figure 2.12: Open Education Consortium ACE Award

2012 ACE Winners: Site Categories

The 2012 Outstanding New Site Award for OpenCourseWare Excellence, awarded to a site launched in the previous calendar year, has been given to the Virtual University of Pakistan OpenCourseWare site. The site includes 138 undergraduate and graduate courses and 6,000 hours of video.
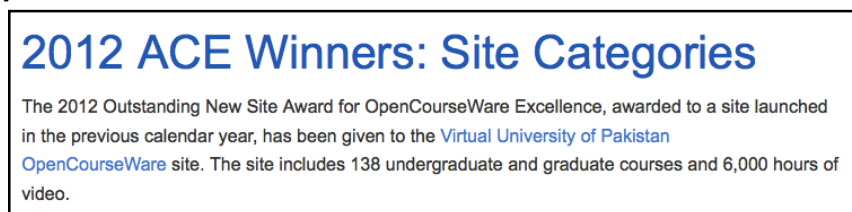
Influencing Open Development Policy

Affecting open policies and practices is defined in the I&N Prospectus as "Policy-makers and practitioners involved in OGD, OER, OS and OBM use project results to inform their funding and implementation" (p. 14). Recognition by policy-makers was discussed in the previous section, so here we focus on two related issues: research that led directly to policy reforms, and advocacy work that facilitates policy reforms through leadership and policy influence.

Policy development and implementation is widely recognized to be complex processes that requires long term engagement in policy communities that are subject to difficult-to-predict windows of opportunity. With this in mind, it is not always possible for research projects to achieve policy change during their tenure, or even at all. And even where projects do manage to influence policy in the long run, the contributions of specific research projects may not become obvious until long after the fact. Despite this, I&N supported open development projects have achieved significant policy wins, and have also penetrated policy communities, pushed on policy paradigms, and influenced policy agendas.

a) Research that led directly to specific policy reforms

I&N has had two significant and noteworthy successes with policy reform, both of which have created the conditions for open development work to proceed. As mentioned above, the Asian Distance Education project had a very important role to play in shaping policy frameworks in several of the countries in which it was operating. The most significant example of this resulted from the project's case study work in Cambodia. The project partnered with Mr. Doung Vuth from the Ministry of Education, Youth and Sports to explore distance education teaching and learning strategies among out-of-school youth in a fishing village in Kep Province, Cambodia. Grade 7 distance education curricula were prepared for 10 subjects, which were delivered to a group of 20 youths over the course of a year.

Figure 2.13: Thank You Letter to IDRC from the Minister of Education, Youth and Sport

Based on the success of this initiative, local students, parents and authorities expressed a desire to continue and expand the program. As a result, an IDRC-supported "Policy Dialogue on Open Distance Learning" was held in Phnom Penh in March 2012. This resulted in a draft policy framework for the Ministry of Education, Youth and Sport (MOEYS), which was subsequently adopted. In a thank you letter (figure 2.13), the Minster of Education, Youth and Sport of Cambodia, I. M. Sethy, expressed his appreciation for IDRC's help with the project, which, he notes, enabled the technical foundation for open distance learning in that country.

A second, significant example of policy influence comes from the Open Business Models 2 project. Through its research, the project identified LAN Houses as important points of internet access among Brazilians, especially in poor areas. In particular, LAN Houses have significant potential to support citizenship-building activities, promote the public interest, and to support the

promotion of local businesses and cultural production. With this in mind, the project delivered a white paper to key Congress Members, suggesting that the state should regulate rather than repress or tax LAN Houses. The project also worked with individual Congress members to provide technical support, organize events and foster debate on this issue as it was brought before the government.

This work resulted in the creation and approval of a national law regulating LAN Houses, Cyber Cafes and pay-per-use access point in Brazil. The resulting bill designated LAN Houses places of special interest, which would make them eligible for tax exemptions and create the possibility of partnerships with the state. In total, this work facilitated the formalization of LAN Houses, which would allow for their sustainability through official recognition, and access to public resources. This is an important step towards ensuring the sustainability of public Internet access points, and also the creation of a supportive environment for the promotion of digital cultural industries in Brazil.

A final example comes from the Open AIR project's South African participants. In this case, South African team members, Drs. Tobias Schonwetter and Caroline Ncube were invited to provide evidence-based feedback to the South African Government during 2013 consultations on its Draft National Intellectual Property Policy. Team members report that their submission informed debates around the new policy, and led to changes in its drafting.

As has been noted elsewhere in this chapter, I&N's success with policy reform has contributed to the creation of enabling conditions for open development initiatives. Again, this is very important work for several reasons. I&N supported research shows, for example, that the success of open development initiatives depends heavily on supportive technological, policy, and institutional contexts. What is more, the fact that policy-makers are interested in these issues, and are taking them up in their work, demonstrates the significance of open development to planning and administration in underdeveloped contexts.

As the I&N program has advanced in its work it has gradually shifted the goal posts where policy reform is concerned. In particular, it seeks to produce increasingly fine-tuned policy-relevant research—research that can identify specific policy measures to optimize the impacts of open development initiatives, while also minimizing any potential risk or harm. This kind of work can build on earlier policy successes, but also represents a qualitative departure from earlier policy achievements.

b) Advocacy work to drive open development policy reform

The I&N program also supports policy advocacy in two concrete ways: through the identification and promotion of leaders within particular policy fields, and through situating those people in positions where they can have significant policy influence. As noted above, it is not always possible to achieve concrete policy changes during the tenure of a project. However, it is very feasible to situate people within policy communities, drive debate about the parameters of the existing policy paradigm, and influence specific policy agendas. While difficult to demonstrate

within a five-year policy-cycle, this work can prove invaluable to the realization of policy change over the longer-term. This can be particularly true in an emerging area of interest, such as open development, where policy-makers are facing significant new opportunities and challenges.

We identified several examples in which I&N project participants leveraged their participation in IDRC-supported research to take on leadership positions within their field. For example, Cameron Neylong, and Advisory member of SCAP, was appointed Director of the Advocacy for the Public Library of Science (PLoS). Michelle WIllmers of that same project became head of the University Repository of the University of Cape Town as a result of her work with IDRC. Fernando dos Santos, who headed up Open AIR's work in Mozambique, became Director General of ARIPO through his work on that project. And Dr. D. Davaalkham of the Health Sciences University of Mongolia was appointed to a National Immunization Technical Advisory Group as a result of her work for the Asian Distance Education project. The Group oversees management of training for healthcare workers in this field, and Dr. Davaalkham was brought on board to advise on the use of distance education for this work. These 'promotions' are highly significant from a policy advocacy point of view. The hope is that individuals will incorporate the lessons they have learned through IDRC-funded initiatives into the work they do in these new positions. Meanwhile, I&N can draw on these relationships to facilitate advocacy or policy work in future initiatives.

Meanwhile, I&N projects also contribute to and engage in policy work in a variety of ways, from facilitating the establishment of policy actors, to engaging in significant policy debates. For example, as a result of I&N's collaboration with the Web Foundation on the Open Government Data project, it was able to position that Canadian government as co-chair of a high level international working group convened by the Open Government Partnership (OGP). The OGP is a multilateral initiative that aims to secure concrete commitments from governments to promote transparency, empower citizens, fight corruption, and harness new technologies to strengthen governance. In another case, several participants in the Open AIR initiative have been involved in the establishment of a Pan-African Intellectual Property Organization (PAIPO) under the auspices of the African Union. This purpose of this organization is to develop a coordinated Africa-wide approach to intellectual property, and so is of particular interest to the Open AIR initiative given its focus on facilitating appropriate IP policy for that region. And a final example is the participation of the Open Government Data in LAC project in the Regional Ministerial Conference on E-Government in Latin America and the Caribbean in November 2012. In this case, the project organizers were able to present their work on open governance to a high-level group of policy makers, which allowed them to position open development as a significant agenda for governments in the region.

2.5 Conclusions & Lessons

In our overall assessment, I&N has been able to meet the objectives and expected outcomes that it set for itself in its prospectus. The program has supported the creation of networked environments for innovation that are able to identify and promote desirable social change processes; it has fostered a field of study that produces research of interest and utility to peer

groups, the media and policy-makers; and it has influenced policy both directly and indirectly through the promotion of policy leaders and engagement with policy communities. This has been amply demonstrated by the assessment presented in this chapter.

In the remainder of this chapter we explore some of the overall lessons learned through our summative assessment of I&N's open development programming. We look at how the program's research agenda has matured over time, provide commentary on how I&N might navigate future outcome measures related to the 'scaling up' of development research, present some successes and challenges around research support activities, and finally discuss how this summative evaluation sets the stage for formative work presented in the rest of this report.

a) Shifting the Goal Posts

In addition to meeting the objectives set out in its Prospectus, the I&N program has also 'shifted the goal posts' over time, particularly in OER, OS and OGD programming. We can see this clearly if we examine the work of the program against IDRC's three main outcome measures: research, capacity and policy. Figure 2.14 below breaks three outcome measures into different moments of a research trajectory. Foundational research was necessary in early open development projects as the program worked with its partners to establish programming, identify principle actors in each thematic area, provide basic training to practitioners, define key terms, and establish basic policy conditions necessary for the functioning of open programming. Slightly later projects were able to build on these foundations to address contextual phenomena, such as the factors that drive openness, the technical, policy and institutional contexts for openness work, and networked relationships between practitioners working on open development issues. More recent efforts to set up systemic research, finally, aim to leverage networked research capacity to produce independent evidence about the relationship between openness and development in ways that can fundamentally influence the terms of policy discussions.

Figure 2.14: Shifting the Goalposts

	Foundational Research	**Contextual Research**	**Systemic Research**
Research	Definitional: What is openness?	Contextual: What factors drive or limit openness?	Systemic: How does openness impact development?
Capacity	Openness literacy in specific projects	Relational and equilibrating work between and across projects	Leveraging networked research capacity to produce cross-cutting results
Policy	Identification and establishment of best practices within specific programs	Contextual change: addressing the policy, technology and institutional context for openness work	Shifting in policy paradigm: shifting the terms of the conversation

Of course any schematic of this kind is liable to mask a world of complexity 'on the ground.' But when taken as a whole, the body of work produced by I&N over the course of 5 years, particularly in OGD, OS and OER, demonstrates this trajectory. Indeed, setting aside OBM projects (which, as described in the introduction to this chapter, take a different approach) a rough estimate of project priorities demonstrates this trajectory very nicely, as is demonstrated in table 2.4 below.

Table 2.4: I&N's Increasingly Sophisticated Research Objectives Over Time

Projects From Newest to Oldest	Research	Capacity	Policy	TIME
Catalyzing Open and Collaborative Science for Global Development				
Research into Open Educational Resources for Development				
From Data to Development: open government data in developing countries				
Quality, Reach and Impact of Open Scholarly Publishing in Latin America				
Open Data for Public Policy in Latin America and the Caribbean				
Arab Knowledge Society: Who represents The Arab World Online?				
Scholarly Communication in Africa Program				
Openness and Quality in Asian Distance Education				

All together, I&N's work is driving forward a maturing research agenda around open development. As a result, the operationalization of outcome categories within and through projects is progressing over time. In particular, we see that earlier projects made progress towards identifying the qualities of the openness facilitated by networked technologies, as well as the factors that either facilitate or constrain quality openness. More recent projects are increasingly oriented towards drawing out crosscutting lessons from open development initiatives that may serve to shift the terms of policy debate.

What this demonstrates is that I&N's openness initiatives have taken seriously the importance of producing impactful research across a specific range of outcomes categories. Of particular note, I&N's projects all encompass policy objectives of one kind or another, however these objectives have experienced a qualitative shift over time. We can expect that early policy wins

related to the identification and establishment of best practices and supportive environments for open development will eventually lead to larger discussions about changing the nature of governance, learning, research and innovation in developing country contexts given digitally networked technologies.

b) Navigating Emerging IDRC Outcome Measures

As we did our summative evaluation of I&N's project work we looked at whether existing projects met IDRC's emerging (but unconfirmed) outcome categories. These new categories are: creating solutions, cultivating leadership, and building strategic networks. The purpose of this examination was to provide I&N with some ideas about how it might adjust its work to accommodate emerging evaluative measures. Since these measures have not yet been fleshed out, we speculate that IDRC's emerging framework will emphasize 1) leveraging connections established through leadership building initiatives, and 2) leveraging strategic alliances created through network building, to 3) scale up solutions identified through research initiatives.

We note right away that several of I&N's projects, particularly its more recent projects, are already engaged in leadership and network building activities. So I&N may well be ahead of the curve in terms of meeting these new evaluative objectives. However, we also note that leveraging leaders and networked connections to 'scale up' research results will call for careful consideration of how new projects are organized and implemented. This new program of work will incentivize identification of different kinds of partners, and/or new kinds of networked research modalities that cater to the identification and promotion of best practices.

And as was noted in the discussion above, the meaning or objective of 'scaling up' is not entirely clear, so careful consideration is required as to how this objective will be met going forward. It may make more sense to think of this work in terms of identifying and promoting desirable social change processes through a variety of different mechanisms (whether through scaling up, scaling in, legitimating existing processes 'at scale,' etc.). What is more, certain aspects of the 'scaling' discourse need to be navigated with care. There is nothing wrong with seeking to increase the impacts of development research interventions, however, this should not be done at the cost of creating overly instrumentalized frameworks for research. Also, as was noted earlier, it is important to carefully reflect on the relationship between networking for research, policy, capacity building and innovation. In particular, it is important to ensure that a focus on strategic alliances or leadership building is pursued with a view towards leveraging or even enhancing important work in the areas of knowledge creation, innovation or capacity building. In other words, it is important to ensure that these very different agendas do not work at cross-purposes to each other.

c) Successes and Challenges in Research Support

To end this summative evaluation, it is important, finally, to reflect on the relationships that allowed this research, and its resulting impacts, to happen. In what follows we report on the

feedback we received from Principal Investigators (IPs) and I&N Program Officers (POs) about research support activities.

I&N POs are widely respected and valued for their collaboration in project development and implementation. In areas where I&N can engage existing partners, it works with them to develop proposals, but in other cases where new areas of interest are being development, I&N has been more directive, taking a lead role in establishing projects and the networks and partners that administer them. All of the PIs that we spoke to described I&N POs as offering useful, critical and effective advice on setting up and managing their projects. In addition, POs provide constructive feedback, help partners think through program possibilities, and provide a sounding board for ideas. While PIs recognize that their research programs are necessarily guided by the mandate outlined in the I&N Prospectus, they noted that I&N staff provide suitable flexibility when needed.

Along with the strengths of its staff, PIs identified IDRC's international reputation as a key research support. In particular, they pointed out that IDRC is one of the few organizations in the world supporting open development research (instead of advocacy work or technical implementation). IDRC's specific focus on this area of research affords I&N partners access to experts, funding, and evidence from around the world.

IDRC's key project modality for open development—research networks organized around open calls for proposals—was described as an effective approach overall. PIs told us that this enables networking among a diversity of researchers. We observed, however, that some networks were more cohesive than others, suggesting that more can be done to support effective collaborations within large scale research networks. IDRC does already support this through the Developing Evaluation and Communication Capacity in Information Society Research (DECI-2) project. By providing capacity-building and mentorship to funding recipients, DECI-2 encourages the production of research for policy and practice change. This includes deepening and extending knowledge on open development, collaborating with other actors in this space, and funding international research projects that utilize the principles of open development in diverse ways.

In addition to networking within projects, PIs also offered feedback on networking among projects and with IDRC. One suggestion was to support networking across research projects engaged in openness activities. PIs reported lacking awareness of what was happening in their sister projects. I&N can address this by setting up mechanisms for cross-project interaction, such as online knowledge-sharing platforms that continue the in-person discussions that happen at meetings and conferences. In addition, better knowledge management within IDRC could help project partners access the data and information they require to support their research.

PIs reported that I&N should continue to develop its narrative around open development research. In particular, some PIs reported that, at times, I&N's evolving research agendas and evaluative criteria resulted in protracted negotiations that, at times, stood in the way of progress

within specific projects. In particular, several PIs called for greater clarity regarding the specific outcomes that open development programming aims to achieve. I&N *does have* a clear statement on its critical perspective for open development. Specifically, I&N aims to facilitate the production of credible and legitimate evidence-based research on the relationship between openness and development. This means that the focus is on understanding whether and how openness impacts learning, governance, innovation or research, whether positive or negative, with the goal of limiting negative impacts and augmenting positive impacts. It seems, however, that at times this agenda runs up against stumbling blocks at the moment of interpretation and implementation. In particular, it is not always clear to PIs how this agenda should dovetail with I&N outcome measures (network building, research recognition and policy influence) at the moment of program implementation.

This may be explained by the need for further development of theoretical frameworks and methodological approaches appropriate to open development research. The field of Open Development, as discussed above, is still emerging, and as a result, there continues to be room for growth around key definitions, research agendas, and appropriate approaches to producing evidence. For example, interviewees reported that the attribution chain between openness and development outcomes is so complex that it is often difficult to demonstrate links in a rigorous and credible way. These are precisely some of the issues that we take up in the more formative aspects of our evaluation, in the chapters that follow.

3.0 Quality of Openness: Summative Projection

3.1 Introduction

The summative evaluation presented in chapter 2 demonstrated that I&N has met the objectives that it set for itself in its prospectus. In addition to this summative work, the terms of reference for this evaluation requested formative work that could inform the team's understanding of 'quality' openness outcomes, and provide guidance on future I&N initiatives. Specifically we were asked to:

- Establish a common understanding of what is meant by "quality of openness" or "quality openness" by both the I&N team and its research partners. In particular, to identify outcomes consistent with 'improved quality of openness.'
- Suggest principles or lessons that can be applied to projects that are trying to produce 'quality of openness' outcomes.

In this chapter, we set the stage for formative work presented in chapter 4 by examining frameworks for thinking about the effects of openness in development. In particular, we discuss the idea of "quality of openness" in this chapter, and reflect on how this can be operationalized in research. Chapter 4 then looks at how these ideas are addressed in specific I&N projects.

The ideas presented in this chapter draw on:

- Structured critical analysis of the research questions, design and methodologies used in I&N projects.
- Mapping the evolution of open development as a concept, and I&N's contributions to this field.
- Literature review of rigorous peer reviewed research demonstrating the link between open processes and social change.
- A comparison of I&N's research on openness with that of the larger field.

We also visited I&N in August, 2014 to share our emerging thinking with the team, and to work on developing new approaches to researching open development. During interviews, we discussed these emerging ideas with the principal investigators from our 10 projects to get their feedback. And based on all of this work, we developed a working model for researching open development, which is presented towards the end of this chapter.

3.2 Anticipating the Problem

Open development is based on the assumption that the historic introduction of networked ICTs has the potential to enable much greater openness in flows of information, enabling more transparent, collaborative and participatory social processes. It recognizes, however, that the openness that ICTs enable is not always positive, or of good quality, and that it can be limited by social, cultural, institution, political, economic and other factors. With this in mind, I&N wants

to contribute to knowledge, capacity, alliances, practices and policy that will enhance the quality of the openness potentiated by ICTs. And in particular, research can shed light on how to push this openness in directions that will contribute to the achievement of development objectives.

When it comes to researching open development, then, it becomes important to differentiate 'quality' openness from 'inferior' openness. Quality or inferiority need to be understood vis-à-vis their ability to contribute to development outcomes such as increased inclusion, greater distribution of economic benefits, greater accountability and transparency of governments, and the like. With this in mind, open development might address questions such as:

- Is openness always the best thing for achieving development objectives? When is it useful and when is it not useful?
- Are some types of openness initiatives better than others in terms of achieving development outcomes? Can openness initiatives lead to negative outcomes in terms of achieving development objectives?
- How should openness initiatives be organized, implemented, delivered, etc., in order to ensure positive development outcomes (and avoid negative ones)?
- Are some contexts more conducive to beneficial development outcomes from openness? What sorts of policies, technical environments, expertise, social networks, etc., shape positive contexts of openness initiatives? How do we move towards beneficial contexts for openness?
- Who are the beneficiaries of openness projects and what benefits do they gain? What communities benefit most from openness initiatives? Can/do openness initiatives create new knowledge and/or power asymmetries? Under what circumstances? How can this be avoided?

I&N's work in this area has progressed over time. Our structured critical analysis of the research questions, design and methodologies used in I&N's openness projects found that earlier research tended to focus on establishing openness practices and conducting baseline research about those practices. This work often focused on the characteristics of openly shared content – the descriptive '*qualities of openness*' - as expressed through things like open educational resources, open government data, or open publications. These characteristics might include things like digitization, accessibility, free cost, etc. Studies also looked at the conditions supporting these characteristics. We examine these factors in detail in chapter 4.

Later projects have hypothesized and tested the benefits of supporting digitally enabled open social processes, such as cost reductions and efficiencies to enhanced participation, stronger innovation, localization of knowledge, and the like. They have also looked at the political,

> **Qualities of Openness**: the characteristics of open phenomena and associated processes; the criteria of openness
>
> **Quality Openness**: when the relationship between open phenomena and associated processes leads to desirable social change

technological and social factors that support or limit open phenomena. This research has sought to locate '*quality openness*' through correlative or causal work that seeks to demonstrate links between open social processes and positive social change. The processes or mechanisms by which people engage open content have been less studied, but they are emerging as an area of concern for the program. Both the qualities of these mechanisms and their bearing on the realization of quality development outcomes can be examined.

Despite demonstrable evolution of the openness research agenda, I&N POs expressed uncertainty about open development during interviews. Many of them felt that a common, focused definition of 'openness' is lacking. They felt that this resulted in fragmentation across projects and thematic areas. POs agree that a common framework for thinking about openness *could*:

- **Generate specific and relevant questions** to guide research/policy/practice outcomes.
- **Provide a useful framework** that I&N and partners use to network and share knowledge.
- **Allow for comparisons** across themes/regions/etc.
- **Help staff measure and evaluate 'openness'** and what it can achieve.

But, they questioned whether it is conceptually possible to arrive at a common understanding of openness. For example, they argued that I&N's openness programming takes place across four thematic areas with very different underlying assumptions and objectives. For example, Open Government is about making institutions more transparent, while Open Education is about making resources available to teachers and students. These distinctions raise questions about whether a common understanding of openness is possible. If this is the case, then larger crosscutting analyses would be difficult to achieve.

On the other hand, while I&N has gone a long way towards establishing open development initiatives, the benefits of open phenomena remain unproven. As a result, there is a risk that new policies or programs will be implemented without adequate evidence of their development impacts, or adequate provisions to maximize benefits or mitigate harms. This would suggest that I&N research should indeed move beyond studying the qualities of openness within specific localized projects, and focus its energies on crosscutting studies that identify the factors driving quality openness.

This type of work has been a major objective of I&N PO Matthew Smith, who has been working for some time on the problem of how to model research that will achieve this objective. For example, at the December 2013 meeting of the SIRCA II program in South Africa, Smith presented his thoughts about how to organize research on openness. He emphasized that the research needs to demonstrate "how openness makes a difference" and that the goal of I&N is to identify and facilitate 'functional openness' which is defined as openness that serves a clear and beneficial purpose. This means, according to Smith, that key questions facing the field include:

- What is it about open that makes a difference?
- What does openness enable that makes a difference?
- What causal social processes does openness enable?
- What do people do around open content that brings change?

Smith hypothesizes that functional openness will enable transformative social processes that can have real impacts on development. In his 2013 presentation, his suggested that these processes might include things like content creation, use and reuse, adaptation, collaborative production, and the like (see figure 3.1).

Figure 3.1: What Open Content Facilitates
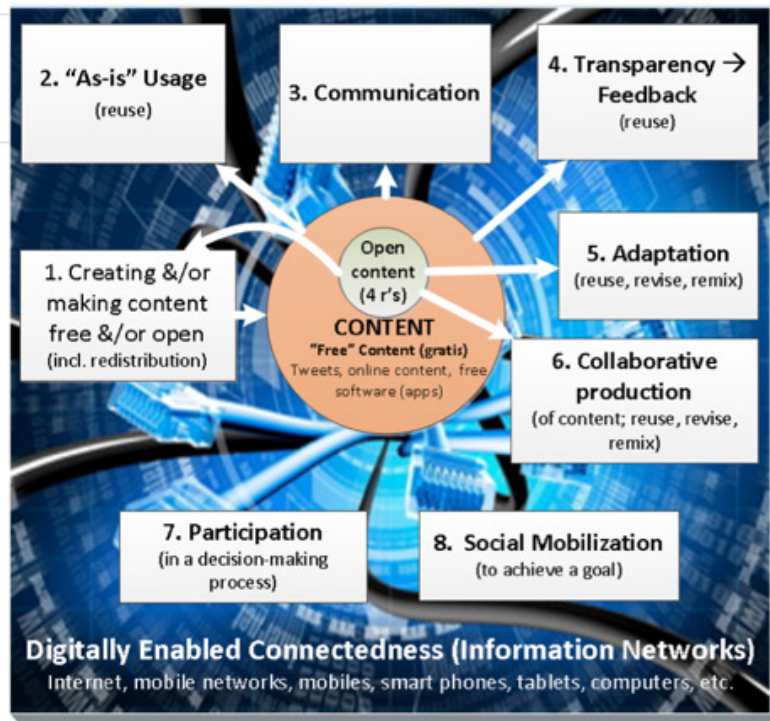
Source: Smith 2013

Smith's thinking has continued to evolve over time. In a May 2014 presentation at the SIRCA III meeting in Seattle, Smith again emphasized the role of social processes in giving meaning to open content (Smith 2014a; See also Smith and Calderon, 2014). In particular, he argued, push and pull mechanisms contribute to the dynamism of open content. Push mechanisms might include sharing and transparency, while pull mechanisms include use, reuse, revision, remixing, crowd sourcing and peer production. These push and pull mechanisms depend on the existence of 'open capabilities' which Smith defines as: "The opportunity, freedom and ability of individuals/groups/institutions to engage in open activities that help them achieve something they value and have reason to value," and intrinsic: "The value of having the freedoms to engage in open activities (self-directedness, participation)" (p. 17).

Smith organizes these various mechanisms into the diagram presented in figure 3.2. In total, what Smith offers is a social model of open content in which the processes through which people engage open content are either *synonymous with* or *generative of* development benefits. An example of the former case is when music production through remixing causes the disintermediation of profits within the industry, resulting is a greater distribution of benefits to cultural workers. An example of the later case is when open government data reveals information that can be used to address systemic corruption, which could results in a more equitable distribution of the wealth or opportunity available in an economy, as well as more efficient use of public resources.

Figure 3.2: A Social Model of Open Content
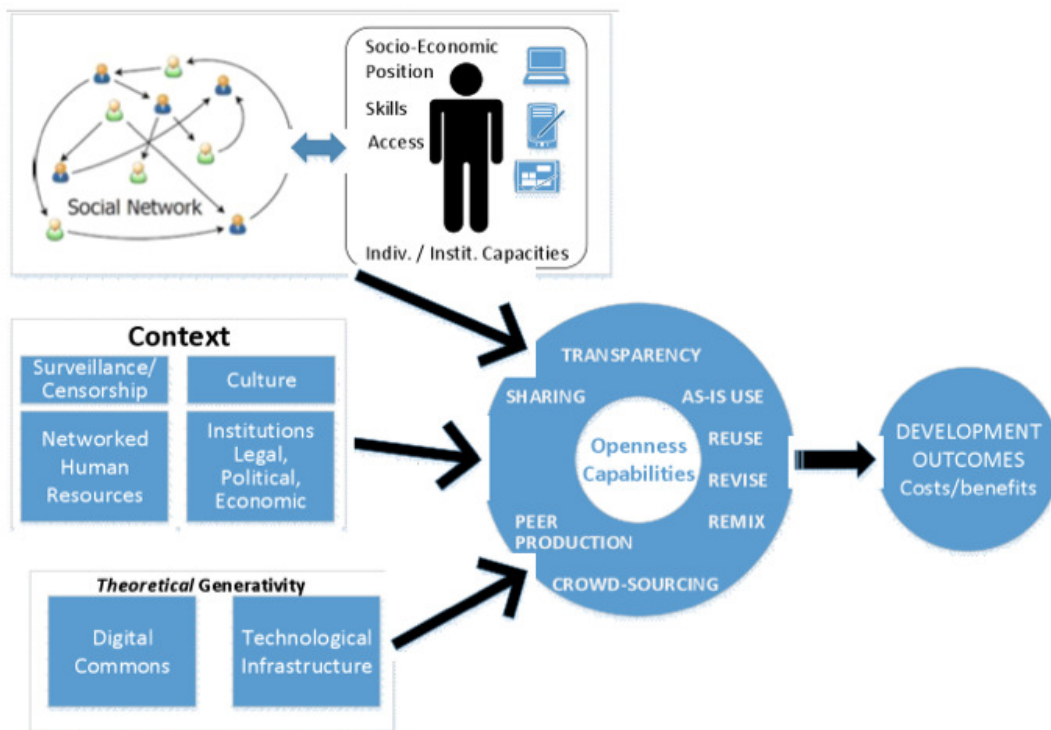
Source: Smith 2014a

Not all development outcomes are as straight forward to model, however. It is not always clear whether the processes through which people engage open content are synonymous with or generative of development benefits. For example, we do not know whether greater participation in the production of educational materials or scientific research leads to the production of better content. And it may indeed lead to the production of less accurate, more politicized, or hyper-generalized content that undermines the achievement of, say, better learning outcomes.

In addition, interviews with I&N project officers revealed additional factors that should be taken into consideration in the evaluation of development outcomes. In particular, power dynamics are at the heart of openness, and therefore it is important to ask who has access, who is participating, and who is collaborating, and what this implies for the realization of development outcomes. If this point is not explicitly recognized, then open development projects might be

accused of 'open washing.'   Also, it is important to remain aware of the extent to which the introduction of open development perpetuate may perpetuate the status quo. For example, overly technical or elite-oriented solutions reflect and perpetuate existing power asymmetries. I&N does try to avoid these kind of projects, but the influence of technocratic or solutions-oriented elements of projects needs to be analyzed in terms of their impacts on development outcomes.

With this in mind, it becomes important to think carefully about how to model the link between open content, open processes and development outcomes, and to think through the kinds of research that would result in solid and applicable knowledge about these concerns.

3.3 Situating I&N's Work against the Wider Field

In order to begin developing this agenda, we conducted a literature review to find out how other (non-IDRC-funded) researchers were tackling the problem of linking openness to outcomes. The terms of this literature review were very strict; only studies seeking to make a link between openness (of content or processes) and social changes could be included.

We learned a great deal from this literature review. Most profoundly, we learned that while there is a great deal of literature dealing with openness, there is very *little* work out there seeking to rigorously demonstrate the connection between openness and social change. *This finding validates I&N's research agenda*.

We also learned that the emergent body of research linking openness to outcomes tends to pursue *correlative* analysis, and that this correlative analysis is shaped by very particular sets of assumptions:

- Work on open governance typically seeks to demonstrate whether open data can be linked to greater trust in government and greater civic engagement (Chu & Chang, 2014; Kassen, 2013; Rashid, 2009). This work draws on a polity model of government-citizen interactions.
- Works on open publishing measure impacts on things like accessibility and use, driven by the assumption that this will facilitate knowledge uptake in either future research, or policy applications (Espanha & Quintanilha, 2011; Riesch et al., 2013). This is, of course, based on a very particular model of how knowledge gets produced.
- Work on open innovation emerges out of the tradition of regional innovations systems research, and tests whether open processes of collaboration drive greater innovation within productive clusters (Chun-Hua & Lu, 2009; JoungIn et al., 2013; Kratke & Brandt, 2009).
- And finally, in the field of e-health, drawing on the power-networks model from organizational studies, researchers are looking at whether open health records change the power relations between health practitioners and patients (Constantinides & Barrett, 2006; Georgieva-Andonovska, 2014; Molin, 2011).

There are a number of observations that we can make about these studies. First, the questions asked were very different from the questions asked in I&N's projects, as summarized in table 3.1. This is not to say that I&N is somehow *behind* in its work, but rather than its contributions are qualitatively different, as will be explored on continuation.

The topics pursued by these studies are also different. In particular, we did not find any correlative works in the field of open education, but we did find some in the field of e-health. This raises the larger question of what topics I&N ought to be engaging in. For example, given the recent Ebola outbreak in Africa, it would be interesting to contemplate the role of open processes in health issues. In addition, one PO suggested that I&N's work should address the 'shadow' side of open development, in addition to 'mainstream' initiatives. This might include the illegal spaces that can be very much a part of open development.

Table 3.1: IDRC Research Compared to Literature Review

	IDRC Work	Research Clusters
Open Governance	Relationship of open government data to policy concerns. (Institutional model.)	Does open data promote civic engagement? A polity model.
Open Business Models / Entrepreneurship / Creative Industries	How to promote an effective and inclusive open economy?	Does open data drive innovation? Regional innovation systems model.
Open Science (Open Publishing)	What are the conditions under which open approaches -> research -> development?	Does open data lead to more inclusive research or wider distribution of results? Public engagement model.
Social Services *We did not find causal studies in education, but we did in health, a field that I&N does not address.	OER: How do teachers take up OER? How to drive teacher or policy uptake & impacts? Inclusion or access focused.	Health: How do open health records change power relations? Organizational change (power networks) model.

Then there is the question of research design. Correlative studies are, by design, oriented towards parsimonious results, and this means that they tend to work with clearly defined causal and dependent variables that are circumscribed by highly specified models of social change. We might say that correlative analyses hide their shortcomings behind the models that they draw upon. In contrast I&N's projects have tended to pursue more exploratory or applied investigations.

Should I&N pursue more correlative research, it would need to seriously contemplate the trade-offs inherent in that work. In correlative research, what constitutes 'quality openness' will ultimately be determined by the research paradigms that surround inquiry. For example, when a creative industries framework is applied to the disintermediation of the music industry, then automatically the outcomes of openness will be thought of in terms of the redistribution of profits

from creative production, and perhaps also increases in the size of the creative marketplace. In other words, openness should lead to a larger creative economy that creates greater revenues for individual artists. But if a creative industries framework is set aside, then what counts as a "quality" outcome of openness could be totally different, such as, for example, expanded access to spaces for creative expression, even though they don't produce a profit, or enhanced earning potential. So what counts as a 'quality outcome' is heavily biased by the theoretical framework that informs the research.

In this way, correlative analysis produce highly *conditioned* results. That is to say, the ability of openness to impact outcomes will depend not just on the factors that shape openness (the context or capacities portrayed in figure 3.2), but also the ways in which the study is contemplated. This would shift I&N's work away from questions like: What does openness look like in developing contexts? Does openness lead to change? How does openness differ from enclosure? Instead, I&N would be asking itself: Under what conditions does openness lead to positive change?

Another limitation of correlative analysis is that openness is in reality very difficult to pin down as a causal variable. I&N's studies recognize that openness is more than just a question of making data or information widely, easily and freely available. Open content is itself part of a socio-technical complex, shaped not only on specific technologies and information systems, but also policies, human capacities, relations of power, and even geography. For example, researchers working on open education define open educational *resources* as those which are unrestrictedly digitally available, free of charge, and which *also* embody ongoing collaborative processes of production. In other words, educational resources aren't open because a government publishes them openly; they are open when they involve social processes that allow them to evolve continuously in and through pedagogical processes.

However, providing a fuller 'socio-technical' understanding of 'the qualities of the openness that ICTs enable'—the qualities of open content—still does not move us beyond identifying (and indeed constructing!) a causal variable without knowing whether and how it creates positive social change. For example, there is a difference between the types of peer review that contribute to the production of open educational resources, and the kinds of social processes that might be enabled by open education resources, such as production of contextualized knowledge. Peer review does not have a direct development impact, but contextualization might. So research needs to go further than just studying causal variables, and this requires moving beyond the remit of these socio-technical ensembles. And this means trying to strike a balance between that correlative or causal impulse, and the complexity of the interaction between open content and the processes that sustain it.

3.4 Modeling the Problem

After visiting the I&N team in August, 2014 to share our emerging thinking with the team, we began to explore approaches to addressing this problem. One of the key things discussed at these meetings was the need for theoretically informed research that demonstrates the

usefulness of open content and digitally enabled social processes in supporting applied development processes.

Figure 3.3: Open, Digital Change Mechanisms
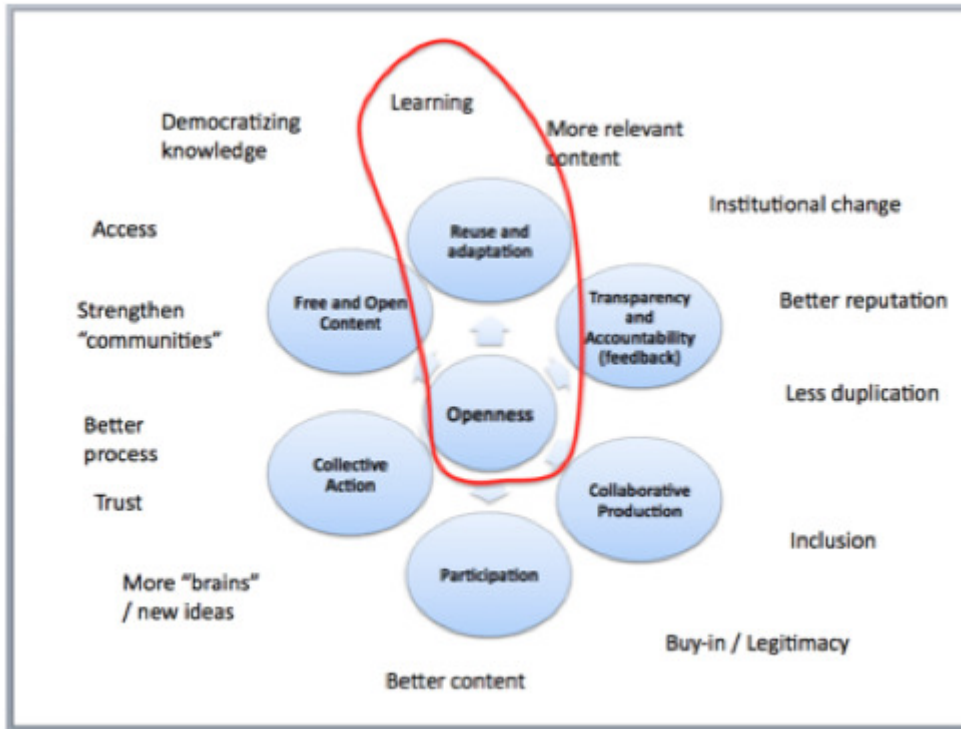
Source: Perini & Smith 2014

What becomes important, then, is the question, *How* do open phenomena create social change? What are the mechanisms as work? In the view of Perini and Smith (2014) (figure 3.3) openness enables new kinds of activities (indicated by the blue 'petals' of this diagram) which in turn enable different kinds of development outcomes. We don't actually know what these mechanisms are. Smith is particularly interested in processes that are themselves digital and open, and hypothesizes that they could include things like remixing, crowdsourcing, or peer production (Smith, 2014b). But a range of other processes are possible—curation of information sets, contextualization of knowledge, public engagements, acts of resistance—and they need not necessarily be open, networked, digital or participatory. In addition, it is also possible that these mechanisms will be specific to particular settings, and to particular applications of openness. It is also important to know *When* (under what conditions) do these mechanisms function to create social change? Do certain conditions—technological, political, social, cultural—need to be in place? Finally, crucially, how, and when, are the resulting social changes *positive*?

Based on this discussion, we proposed that quality openness would be openness that leads to development results under particular conditions (figure 3.4). The factors conditioning quality openness outcomes might include the nature of the openness (including the ICT environment),

openness process themselves (reuse and adaptation in this example), and the context in which these relationships happen (the setting, the policy environment, culture, history, etc.).

Figure 3.4: Our model of Openness Research
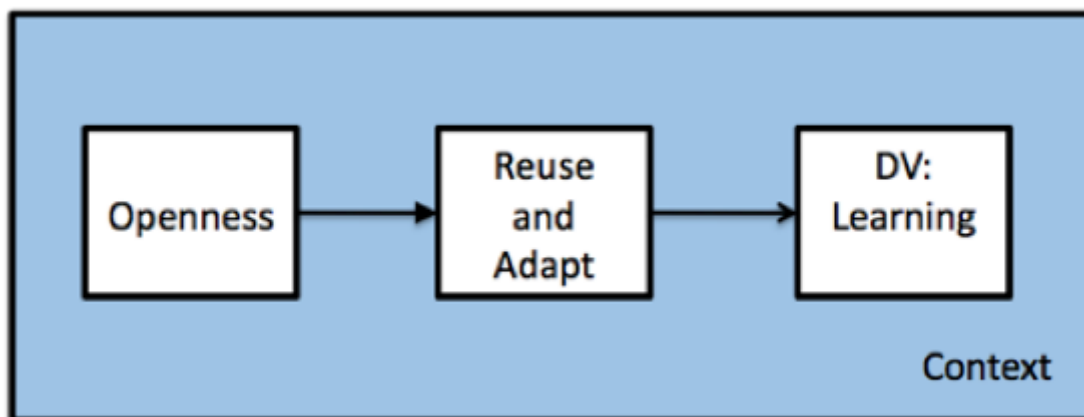
Possible points of discussion include the extent to which these relationships need to be studied thematically (governance, education, publishing/science, business models), and the extent to which context interacts with processes to shape outcomes (i.e. outcomes depend on specific local contexts, and the processes that gave rise to them, and the interactions between local contexts and processes).

3.5 Feedback from Interviewees

So in total, by August 2014, our understanding of "quality of openness" had expanded to include the following aspects:

- The qualities of open content
- The contributions of the social processes interacting with that open content
- The quality of the development outcome (whether negative or positive)
- The mechanisms linking a socio-technical complex to a development outcome
- The relationship between that outcome and the socio-technical complex that gives rise to it (the quality of the content will in part be measured by the quality of the outcome)

We circulated these ideas to current and past I&N PIs and then interviewed them to gather their feedback. In general, the PIs felt that defining a common framework can help guide everyone's work, and that IDRC can play a role in this process. However, they also provided a great deal of useful feedback about this framework, much of which was shaped by the reality of doing research 'on the ground' in developing country contexts.

First and foremost, PIs pointed out that locating development impacts is difficult work. In order to assess impacts, they have to be there, but we often don't know if people are using open

content. In addition, people on the ground don't tend to see open content as 'open' so it can be very difficult to separate open effects from all the other activities that people engage in.

In addition, in line with our earlier discussion about socio-technical complexes, they pointed out that openness is a very fluid concept, meaning that it is highly situational rather than binary (open-versus-closed). The openness of content will interact with the uses it is given by members of the community, and also, content and processes will only be 'open' to the extent that people experience them as such. In this sense, openness will be very specific to particular organizations and communities, and while projects may have commonalities, they will also be addressing different perceptions, goals, objectives and ways of seeing the world.

Having said this, interviewees agreed that social change is a necessary unifying component in openness work. The goal of the work is to get people to engage in some form of action. This raised concerns for interviewees, who pointed the potential negative impacts of tools "created in the West," as well as the potential for open data and free flows of information to undermine the privacy rights of citizens. Meanwhile, despite the fact that access to digital technologies has definitely increased over the past decade, PIs worried about people's uptake of open processes and open content.

PIs also reflected on the conditions shaping open outcomes, arguing that open social phenomena need to be considered alongside other variables that can impact outcomes. How can open data lead to impacts if the right technologies or policies are not in place? For example, how can open government data facilitate the emergence of digital mobile computing industries if telecommunications policy fails to support expansion of accessibility to smart phones? With this in mind, it was argued, the quality openness would result from *contextualized* openness.

Other PIs suggested alternative approaches. In one case, for example, it was suggested that the research should start with the desired change, and study the various factors contributing to that change. In other words, outcomes can be placed at the centre of the model, and researchers can ask in what ways openness contributes. Indeed, given that openness can actually have negative outcomes, it is better to start from an objective (such as innovation) and search for the right combination of policies and activities that will contribute to the desired end.

This goes hand-in-hand with two other observations. First, that openness functions as a negative right: X is open from Y restrictions so that Z can happen. In this formulation, the objective is Z, and removing restrictions is one way to ensure that Z is allowed to take place. Restrictions might include debates surrounding open phenomena, so it is often more important to target the discussion surrounding open content, or practices such as remixing, than the practices themselves, or even supporting factors like policy or infrastructure.

We asked PIs whether they felt that our model could form the basis for comparative research. It is important to emphasize that some PIs felt openness cannot be researched comparatively and

pushed back against the idea. They argued that every project thinks differently about openness and pointed to:

- The incompatibility of the processes that openness encompasses.
- The contextual or situated nature of openness.
- A lack of an overall 'theory of change' guiding the work, a set of key questions, or key research instruments.

Some felt that research should focus instead on case studies, to look for contextual depth rather than comparative breadth. For example, in focusing on a single issue (the IP rights regime and the ways that it shapes innovation), the Open AIR project is contributing to the emergence of an innovation regime tailored to the African region.

Others were more open to discussing the idea, and suggested some possible useful approaches. One suggestion was to use a 'two-step' methodology. In a first step, correlative research can be used to identify cases where openness has an impact and where it does not. A second phase of case-based research can then examine the factors that might explain these differences. Another respondent suggested that openness should be held constant so that its implementation within different contexts can be examined. In this way it becomes possible to examine how and why it is making more difference in some places than in others, and the locally contingent factors or variables that are responsible for these variations.

3.6 The final model

Taking all of this history, analysis and feedback into consideration, we developed a working model that we then applied to three case studies. Both the model and our case analysis are presented in chapter 4.

There are some important things to note about our approach. First, we understand openness to be itself a socio-technical complex, made up of a digital supporting infrastructure, social processes surrounding content, and also the content itself. Second, this creates a separation between the processes involved in creating open content, and the change mechanisms that are facilitated by open content. Here there is room for discussion. People who take social shaping or systems theories seriously might argue that open content, digitally facilitated social processes, and development outcomes collapse into each other in complex processes of social shift. However, this kind of approach makes it very difficult to tease out opportunities for positive social intervention, or opportunities to remove problematic barriers to positive social change.

In addition, in creating this separation we raise a discussion about the extent to which change mechanisms are themselves, or need to be, digital, open, participatory, etc. Smith argues that "it is only when you specify the meaning of openness that you can start to achieve things. You need to break it down to get clarity" (phone interview). In other words, when you begin to identify the things that openness makes possible, like sharing, participation, transparency or

engagement, then the benefits of openness become much easier to identify. This in turn makes it possible trace out the linkages between open social phenomena and social change, as well as to compare the contributions of openness to, say, sharing, across fields of specialization (governance, education, publishing, etc.) But can we expect to find a set of change mechanisms common to open phenomena, or will those mechanisms be specific to particular open phenomena or particular social settings? Also, do those change mechanisms need to be 'online' or is it possible that they will actually be the 'offline' upshots of 'online' activities? These are questions yet to be resolved.

When we circulated the draft version of this report to PIs for comment, two individuals commented that they felt the approach being advocated in this report was overly 'causal' in nature. In particular, they worried that a focus on establishing causal linkages devalued alternative research designs, and also research that is non-causal in nature. These are important points for reflection and discussion. It is absolutely true that insights into the relationship between open social processes and social change can be produced through non-causal research. Research can focus on the factors contributing to instances of positive social change, as mentioned above, for example. And yet, regardless of whether one starts from independent variables or dependent variables, in either case a vision of social change is at work, and that vision shapes our understanding of how openness and development are connected. Furthermore, all of the elements of such a model bear analysis, so it is not the case that a focus on causal linkages devalues research that is non-causal in nature. You can't do causal research without first empirically establishing variables, for example, so non-causal research is, in fact, essential.

Finally, an implicit worry about 'magic bullet' research lurks in these commentaries. Ultimately, as has been stated several times in this report, I&N's objective is to produce research that "enables greater understanding of how information networks positively and negatively affect developing countries' citizens, especially citizens belonging to marginalized communities" (I&N Prospectus, p. 9). This kind of research is necessary to producing sophisticated policy guidance that can magnify the benefits and minimize the risks of open social phenomena. But the goal here is not to discover the magic bullet of openness causality. Rather, the goal is to understand the mechanisms at work in social processes enabled by openness, how they are similar or different between thematic areas and development contexts, and to draw out their relationship to social change processes.

In other words, the idea is to begin to spell out the 'theory of change' at work in open processes, such that earlier I&N research can be leveraged in ways that push the boundaries of he overall open development research agenda. The work we present in chapter 4 begins to consider exactly this concern.

4.0 Validating and Contextualizing the Model: Formative Evaluation

4.1 Introduction

In this chapter we operationalize our working model of openness and apply it to three of I&N's current projects. The aim of this exercise is to 'stretch' our model to uncover its benefits and limitations. It is important to note that we are not evaluating these cases in terms of their success or failure, but rather leveraging them to test our working model. To this end we conduct an inductive analysis of case study data to draw out how researchers are articulating the different elements of our model. Our findings are situated alongside feedback gathered from interviews with principal investigators and I&N project officers. The formative work presented in this chapter helps us raise questions about how future research on open development might be organized.

4.2 Operationalizing the Model

The four elements of our model are graphically represented in figure 4.1. As was discussed in the conclusions to chapter 3, we understand openness to be a socio-technical complex made up of interrelated infrastructures, processes, and content. We separate out the elements of this complex from the mechanisms it gives rise to or the impacts that it results in. People who take social shaping or systems theories seriously might argue that open content, digitally facilitated social processes, and development outcomes collapse into each other in multifaceted processes of social shift. But this makes it difficult to identify specific operationalized elements that might support positive social intervention, or barriers to positive social change.

Figure 4.1: Our model of Quality of Openness
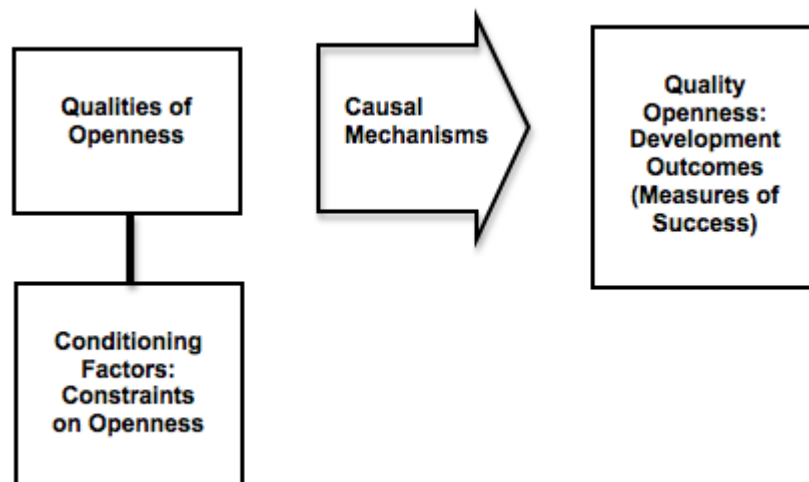
First, we look at the **qualities of openness**. These are the criteria that each project attaches to a phenomena in order for it to be considered 'open.' Our analysis of these qualities of openness helps us see how they are represented and explained by different projects and in different

thematic areas. As described in previous chapters, early open development research focused on identifying these qualities, with the goal of elucidating what 'openness' is in the context of development initiatives.

Second, we consider the **conditioning factors** that facilitate or limit qualities of openness. A key finding of early open development research is that the qualities of openness are highly contextualized; that is, they are embedded in different technical, political, economic, social, cultural and institutional environments.

Third, we look at **development outcomes** that indicate when openness initiatives are of utility or quality. These development outcomes provide concrete examples of good (or bad) articulations of openness, such as cost savings, improved efficiencies, or increased learning. They provide normative measures by specifying the goals that open development is trying to achieve (or the outcomes they are trying to avoid).

Finally, we consider the **mechanisms of change** at work in each project. These mechanisms are understood to bring about development outcomes. They provide the correlative or causal links between qualities of openness and (quality) development outcomes, all of which are shaped by conditioning factors. These mechanisms help us understand how strategic applications of openness can help development actors achieve particular outcomes. Our analysis of the case studies found that most projects are in the nascent stages of this research focus. This is to be expected: in line with broader trends, after establishing the definitions, conditioning factors and normative goals of openness, some researchers are now moving to explore mechanisms of change. Previous and ongoing research on other elements of the model provides a strong evidence base for work on the change mechanisms made possible by open phenomena.

4.3 Method and Case Studies

Our case studies are drawn from a representative sample of 14 open development projects in OS, OER and OGD. Our selection of these case studies follows a particular logic. We chose not to select an OBM case; as discussed in chapter 2, this line of research is substantively different that the other three. We also chose to focus on recent projects. We did this to reflect the shift in research agendas noted above: from descriptive to more analytical work. We found that earlier projects have made strong progress towards identifying the qualities of openness facilitated by networked technologies, the conditioning factors that either support or constrain quality openness, and development outcomes. More recent projects are engaged in pulling out actionable lessons from these open development initiatives.

Each of the projects we examined is led by a primary investigator who manages a group of sub-projects from different geographic regions. Our case studies consist of a representative sample of these sub-projects. The three projects we examine in detail are:

- ROER4D: Research in OERs for Development

- From Data to Development: exploring the emerging impact of open government data in developing countries
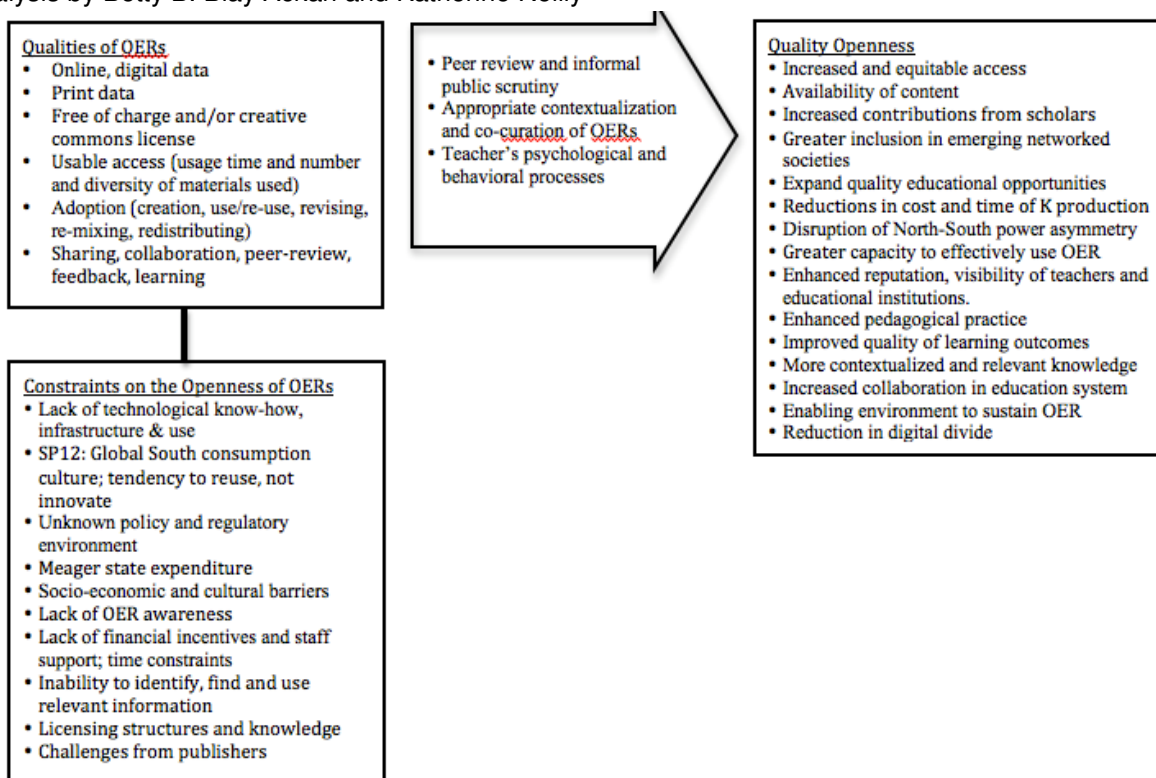- Quality, Reach and Impact of Open Scholarly Publishing in Latin America

To build a data set around this sample, we approached the primary investigators and asked them to supply documents for analysis. These documents included: original CFPs, project proposals, interim reports, updates, results, and meeting notes. We treated these documents as data sets and used content analysis produce our case study materials. First, we examined the three case studies, and identified variables that correspond to the four elements of the model described above. Second, we parsed out the similarities and differences among sub-projects in different thematic areas. We did this to test for comparisons by identifying commonalities, differences, and points of debate. Our findings are presented in the discussion section of this chapter. Our conclusion reflects on how they resonate with our working model. Before we delve into these specifics, we provide a brief description of the three case studies.

Case Study 1: Open Educational Resources - *Research on Open Educational Resources for Development (ROER4D)*

This project is primarily funded by IDRC, although the Department for International Development in Britain also contributes, and the Open Society Foundation has funded one study. The project involves two universities: the University of Cape Town administers research

Figure 4.2: Research into Open Educational Resources for Develoment (ROER4D)
Analysis by Betty B. Blay Ackah and Katherine Reilly

Qualities of QERs
- Online, digital data
- Print data
- Free of charge and/or creative commons license
- Usable access (usage time and number and diversity of materials used)
- Adoption (creation, use/re-use, revising, re-mixing, redistributing)
- Sharing, collaboration, peer-review, feedback, learning

- Peer review and informal public scrutiny
- Appropriate contextualization and co-curation of QERs
- Teacher's psychological and behavioral processes

Quality Openness
- Increased and equitable access
- Availability of content
- Increased contributions from scholars
- Greater inclusion in emerging networked societies
- Expand quality educational opportunities
- Reductions in cost and time of K production
- Disruption of North-South power asymmetry
- Greater capacity to effectively use OER
- Enhanced reputation, visibility of teachers and educational institutions.
- Enhanced pedagogical practice
- Improved quality of learning outcomes
- More contextualized and relevant knowledge
- Increased collaboration in education system
- Enabling environment to sustain OER
- Reduction in digital divide

Constraints on the Openness of OERs
- Lack of technological know-how, infrastructure & use
- SP12: Global South consumption culture; tendency to reuse, not innovate
- Unknown policy and regulatory environment
- Meager state expenditure
- Socio-economic and cultural barriers
- Lack of OER awareness
- Lack of financial incentives and staff support; time constraints
- Inability to identify, find and use relevant information
- Licensing structures and knowledge
- Challenges from publishers

on Open Educational Resource (OER) adoption and use, and the Wawasan Open University at Penang, Malaysia, administers OER impact studies. The PI for this project is Cheryl Hodgkinson-Williams from the University of Cape Town. In this case, projects were not far enough advanced so that we could work from project reports, so we relied on a report which details the results of a December 2013 Workshop that brought together the leaders of 12 sub-projects (ROER4D, 2014). The purpose of this workshop was to build the capacity of the researchers in the network, and also to strive for harmonization between the various projects within the network.

The project involves research aimed at increasing understanding of the use and impact of OERs in several countries from three developing regions (South America, Sub-Saharan Africa and South / South East Asia). It is guided by the following question: *In what ways, and under what circumstances, can the adoption of OER impact upon the increasing demand for relevant, easily accessible, socially acceptable, high-quality and affordable education in the Global South?* It aims to develop a strong evidence base to inform OER policy by focusing on the relationships between OER use and access to education (Hodgkinson-Williams, 2013). Our analysis of the variables mobilized by this project is presented in figure 4.2.

Case Study 2: Open Government - *From Data to Development: exploring the emerging impact of open government data in developing countries.*

Managed by a partnership between IDRC and the World Wide Web Foundation, this project explores how governments are engaging with open data to promote innovation, development and democratic change. It is focused on the relationships between an open phenomena (in this case open data) and positive development outcomes, with the goal of generating evidence to support policy decisions. It takes a critical perspective on whether outcomes indeed occur and if so, under what circumstances (IDRC & The Web Foundation, 2012). In this case we focused on four sub-projects recommended by PIs Tim Davies and Jose Alonso:

- Will Open Data Initiatives Make Local Governments in the Philippines More Transparent?
  http://opendataresearch.org/project/2013/step
- The Use of Open Data in the Governance of South African Higher Education
  http://opendataresearch.org/project/2013/uct
- Open Data, Public Budget and its Relations to People's Rights in Brazil
  http://opendataresearch.org/project/2013/inesc
- Open Government Data for Regulation of Energy Resource Industries in India
  http://opendataresearch.org/project/2013/teri

Through the Open Government Partnership (http://www.opengovpartnership.org), governments from more than 50 countries have made commitments to promote transparency, empower citizens, fight corruption, and harness new technologies to strengthen governance. Yet reliable evidence on the outcomes and impact of these open data initiatives remains scarce. Little is understood about how social and political contexts, open licenses, technical platforms and

standards, and the dynamics of data use in different fields affect the outcomes that can be realized from wider sharing of data (Davies, Perini & Alonso, 2013, p.3). From Data to Development contributes to improving knowledge on these themes. Our summary of the data-set from this project is presented in figure 4.3.

Figure 4.3: Quality and Impact of Open Data in Governance
Analysis by Heather Gies

Qualities of Openness (QoO)
• Online, digital form
• Complete
• Primary
• Timely, up to date
• Accessible
• Machine-Processable
• Non-discriminatory, free of charge
• Non-proprietary, License Free
• Easy to find information
• Sustainable publication of the dataset

The 4 subprojects overall focused more on assessing qualities of openness, not on measurable impacts (except Brazil case study).

Quality Openness
• Structural or professional changes in government or in providers of data (in a technical, not a political sense)
• Citizen empowerment, increased social control
• Decision making informed by data
• Movement mobilization (Brazil case study)

Constraints on QoO
• Fear of misinterpretation by users among data providers
• Lack of awareness of data availability
• Lack of capacity among citizens to access data
• Lack of a culture of openness among providers
• Incomplete policies
• Burden of responsibility on user

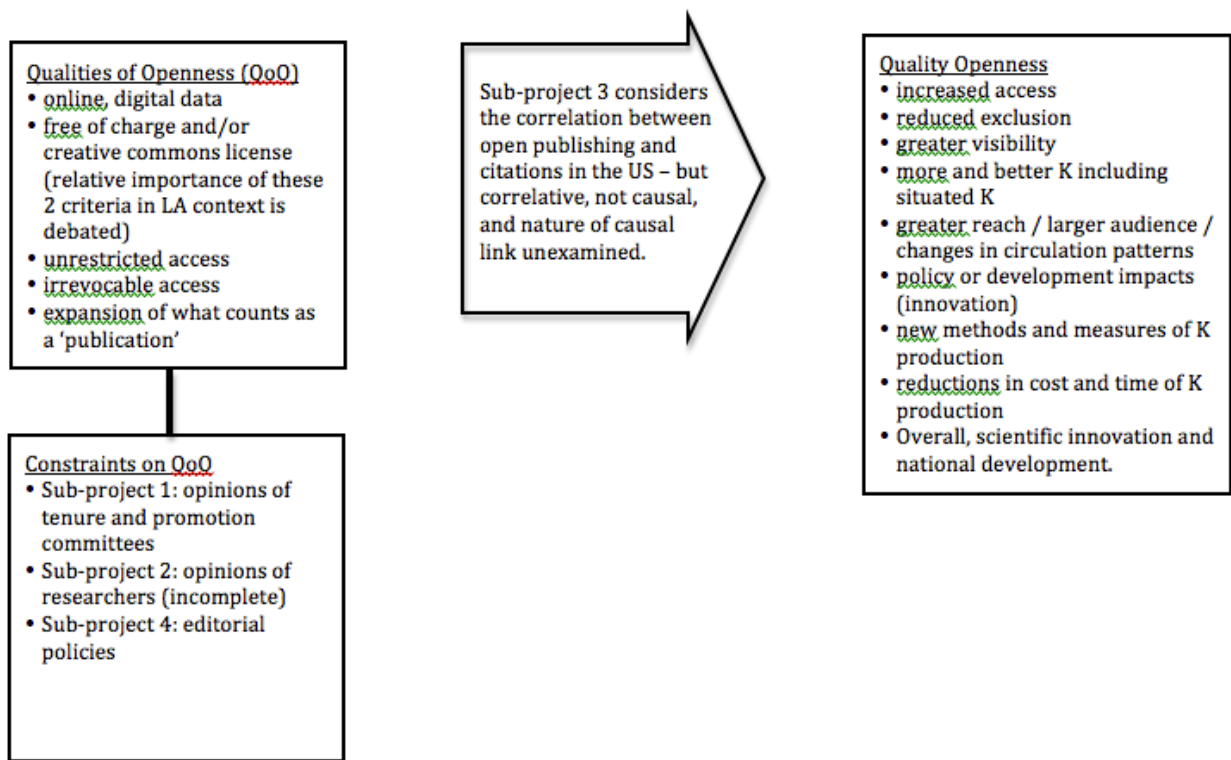Case Study 3: Quality, Reach and Impact of Open Scholarly Publishing in Latin America

This project is a partnership between IDRC and the Latin American Faculty of Social Sciences (FLASCO), under the guidance of Juan Pablo Alperin and Gustavo Fischman. It explores how open access to scholarly research contributes to the greater circulation of knowledge in Latin America. Specifically, the project strives to understand the quality, impact and reach of open access publishing in Latin America, with the aim of proposing improvements. Our analysis focused on the four sub-projects sponsored by this network:

1) Open access and academic evaluation: Knowledge and opinions of tenure and promotion committees with regards to open access publications
2) Access, Use and Publication of Scientific Journals by Researchers in the Social Sciences in Latin America
3) Evaluating the Impact of Latin American science within the Academia and Beyond
4) Institutional and editorial policies that favor open access in academic journals in Latin America and the Caribbean

While past research has tracked the prevalence of open access in Latin America, the causes of this trend and its impacts have not been studied (Information & Networks, 2012). To address these gaps, this project seeks to critically interrogate suggestions that open access will inherently benefit researchers by increasing the circulation and impact of their work. It also considers how open access can benefit society through greater technology transfer, circulation of knowledge, and an informed populace. It aims to contribute research that will help build evidence with regards to these claims, while also taking into consideration criticisms of open access, such as perceptions of poor overall scholarly quality.

Figure 4.4: Quality, Reach and Impact of Open Scholarly Publishing in Latin America
Analysis by Belen Febres Cordero and Katherine Reilly

Qualities of Openness (QoO)
- online, digital data
- free of charge and/or creative commons license (relative importance of these 2 criteria in LA context is debated)
- unrestricted access
- irrevocable access
- expansion of what counts as a 'publication'

Constraints on QoO
- Sub-project 1: opinions of tenure and promotion committees
- Sub-project 2: opinions of researchers (incomplete)
- Sub-project 4: editorial policies

Sub-project 3 considers the correlation between open publishing and citations in the US – but correlative, not causal, and nature of causal link unexamined.

Quality Openness
- increased access
- reduced exclusion
- greater visibility
- more and better K including situated K
- greater reach / larger audience / changes in circulation patterns
- policy or development impacts (innovation)
- new methods and measures of K production
- reductions in cost and time of K production
- Overall, scientific innovation and national development.

4.4 Assessing the Case Studies

In this section we discuss our analysis of the three case studies. As described above, this work operationalized our model across three different thematic areas to see what elements (if any) they have in common, and to map any commonalities, differences, and points of debate. Smith (2014b) notes that 'openness' is an umbrella term, with different sets of connotations linked to applied fields such as Open Education, Open Government, and so on. He argues that a flexible definition of openness is necessary, given these distinctions among fields. As discussed below, our findings support this observation. However, while Smith (2014b) argues that this proliferation of definitions of openness is problematic, since it threatens to be conditioned by normative beliefs or lose itself in vagueness, we suggest that our model provides a structured

way to address this tension. It provides researchers with a heuristic device that they can use to study elements of openness both inside and across thematic areas. To illustrate this we employ several tables as explanatory devices to accompany our written analysis. We recognize that our model is necessarily reductionist, and note that while it may not directly map onto the reality of the projects under analysis, suggest that it can be a useful tool for researchers of open development.

<u>Qualities of Openness</u>

As discussed in chapter 3, Qualities of Openness consist of two phenomena: the content, data and resources (hereafter "resources") available through information networks; and the processes that people use to engage with them.

1. Qualities associated with the use of data, resources or content ("resources"); and
2. Qualities inherent to that phenomena (such as the ability to remix data).

We examined these two forms of qualities of openness through two orders of characteristics. Common first-order characteristics suggest that comparative research is possible at that level of analysis. Key distinctions emerged when we examined second-order characteristics. The terminologies that the sub-projects used to describe specific articulations of these second-order characteristics, and the reasons that they are seen as important, differ among thematic areas. This illustrates how certain characteristics are grounded in distinct communities of practice - a finding that can inform the construction of research hypotheses.

Characteristics of Open Resources

Our findings with regards to the first-order and second-order characteristics of open resources are summarized in table 4.1. Note that all projects examined included several common first-order characteristics, including accessibility, online data in digital form, and affordability. But as we move down the list of first-order characteristics, notice how they begin to differentiate across thematic areas into second-order characteristics.

Table 4.1: Characteristics of Access to Open Resources

	Open Government	**Open Education**	**Open Science**
Accessible	Yes	Yes	Yes
Digital	Yes	Yes, plus print	Yes
Affordable	Yes	Yes	Yes
License	License-free, non-discriminatory, non-proprietary	Creative Commons	Creative Commons, some debate as to whether that is actually free

Ability to locate resource	Easy-to-find		Unrestricted access
Time	Timely, up-to-date Published on a sustainable basis		Irrevocable access
Sharable	Between citizens and governments	Among practitioners (educators)	Among practitioners (researchers) and others (public)

For example, all three case studies highlighted the need for some kind of legal protection or license to support openness. However, the type of license differs across thematic areas. In Open Government, data is license-free, non-discriminatory or non-proprietary. In Open Science and Open Education, it is licensed with Creative Commons (the forms of which are further differentiated in Open Science). In another example, all three areas identified the ability of users to locate open resources as important, but in Open Government this was expressed as "easy-to-find", while in Open Science it was described as "unrestricted access". All projects shared a common first-order characteristic of sharability. But the specific actors involved in this sharing process differ across thematic areas, reflecting distinctions among second-order characteristics.

These distinctions between first-order and second-order characteristics are replicated in the constitution of open resources, suggesting that our two-step model of analysis also applies to this phenomenon. These findings are summarized in table 4.2.

Table 4.2: Constitution of Open Resources

	Open Government	**Open Education**	**Open Science**
Ability to re-shape resource	Machine-processable	Re-use, revise, remix, re-distribute	
Format of resource	Complete, primary	Diverse	Expanded definition to support reputation (new forms of scientific publication)

Similar to the analysis above, the constitution of open resources reflected both first-order similarities and second-order differences. This provides a basis that researchers can use to construct thematically appropriate, testable hypotheses. For example, consider the ability of users to re-shape open resources. Open Government stresses that data be "machine-processable". This may be because while open government data is often made publicly available, it is not always easy for third parties to make sense of or effectively use it. In contrast, Open Education identified a strong focus on the ability of educators to appropriate OERs, as expressed in terms like "creation", "re-use", "revise", "remix" and "re-distribute". This focus is so strong that researchers in this area do not consider OERs open unless they are remixable (interview, Hodgkinson-Williams). Finally, in Open Science, second-order characteristics tended

to focus on the outputs that arise from the use of open resources. These projects seek to expand what counts as a scientific publication, with the goal of encouraging its widespread distribution and use, such as through efforts to increase incentives for academics to publish open access research. For example, projects aim to increase its reputation in the academy and link it to benefits like tenure and promotion. A core goal of Open Science is to create conditions that support knowledge production. These examples demonstrate how our model can support researchers in developing field-specific hypotheses.

<u>Conditioning Factors</u>

Our two-stage analysis also applies to the conditioning factors that support or constrain openness initiatives. This finding supports Smith (2014b), who points out the need for contextual flexibility in studies of the conditions shaping openness. For example, he describes how a project that mapped contributions made to Wikipedia reflects broader contextual inequalities. Specifically, he identifies Internet access, policies that govern Wikipedia contributions, and cultural norms as conditioning factors affecting information sharing and collaboration:

> "[T]his unequal distribution is highly correlated with Internet access. However, factoring in levels of internet access they [researchers] also found that the level of contribution is also determined, among other things, in part by the set of guidelines about how knowledge can be created and represented in Wikipedia. For example, the policies that govern Wikipedia make it much more difficult to create a new entry than it is to simply edit an existing entry...Furthermore, even engaging in Wikipedia is biased towards cultures that are more open to information sharing and collaboration" (Smith, 2014b, p.3).

In a different paper, Smith and Calderon (2014) describe 'push' mechanisms (associated with providers of open resources) and 'pull' mechanisms (associated with users). These push and pull mechanisms are shaped by conditioning factors that support or limit the abilities of actors to utilize open resources for development purposes. They draw an example from Benkler (2013), who highlights a distinction between the ability of actors to engage in commons-based peer production and firm-hosted peer production as shaped by the characteristics of the infrastructure or platform used to host and coordinate peer production. Smith and Calderon go on to define three of these conditioning factors: social and political contexts; individual and institutional capacities; and technological infrastructures.

We identified two orders of conditioning factors influencing 'push' and 'pull' mechanisms. Conditions associated with push factors are summarized in table 4.3.

Table 4.3: Comparing Push Factors

	Open Government	**Open Education**	**Open Science**
Usage	Fear among data providers that users	Teachers' fear of material rejection	Opinions of tenure and promotion

	will misinterpret data/resources	or criticism	committees
Preparedness or Acceptance	Lack of a culture of openness inside data providers	Lack of access (useful insights on OERs published in closed journals) Lack of support for OERs among publishing houses	
Policies and Regulations	Incomplete policies	Unknown policy and regulatory environment	
Institutional policies		Lack of knowledge of adequate licensing	Editorial policies

One common first-order 'push' conditioning factor was expressed in concerns about the end-users of open resources. But these concerns are represented differently across thematic areas. In Open Government, the second-order characteristic of this condition was a fear among data providers that users (such as third parties or the public) would misinterpret the resources. In Open Education, second-order concerns orbit around teachers' fears of rejection or criticism of their content. Finally, in Open Science, second-order characteristics involved tenure and promotion committees, and specifically whether or not they accept the publication of open resources in tenure and promotion decisions.

Another first-order conditional factor focused on the actors pushing open resources to end-users. Open Government frames this concern as a lack of a culture of openness among data providers. In Open Education, it links to financial incentives: publishing houses and closed journals restrict the ability of researchers and practitioners to access OERs. While these second-order factors are not specified in our analysis of Open Science, it is probable that specific concerns also exist there. Finally, all three cases noted that policies and regulations that can support or constrain push activities. Open Government describes 'incomplete policies'; while Open Education refers to an 'unknown policy and regulatory environment'.

Pull Factors

First- and second-order conditioning factors are also evident in pull factors, as summarized in table 4.4**.** One common factor related to the attitudes of users of open resources. Open Government notes that the attitudes of data users can limit uptake, while Open Science focuses on the opinions of researchers, particularly with regards to the quality of open resources. This links to the field's focus on reputation, as discussed earlier. In Open Education, researchers noted the socio-economic and cultural barriers to acceptance of OERs.

Table 4.4: Comparing Pull Factors

	Open Government	**Open Education**	**Open Science**
Awareness	Lack of awareness of data availability	Lack of OER awareness, Findability of resources/data	
Capacity	Lack of capacity among citizens to access data	Know-how, Infrastructure, Financial incentives, Staff support	
Attitudes of users	Burden of responsibility on users	Socio-economic and cultural barriers to acceptance of OERs	Opinions of researchers

Quality Openness (Development Outcomes)

The third element we examined was development outcomes. Once again, our model held up to scrutiny, after we adjusted it to incorporate the two-step analysis of common first-order characteristics and differentiated second-order characteristics. This analysis is summarized in table 4.5**.**

Table 4.5: Comparing Development Outcomes

	Open Government	**Open Education**	**Open Science**
Increased Access	Yes	Yes: physical and material, equitable	Yes
Inclusion		Greater inclusion in emerging information societies, expanding quality educational opportunities	Reducing exclusion
Efficiency		Reduction in the cost and time of knowledge production, Greater capacity to effectively use OERs	Reduction in the cost and time of knowledge production

Engagement	Citizen empowerment, social control (critical)	Enhanced pedagogical practices, Improved quality of learning outcomes, Understanding teachers' motivations to better use OER	New methods and measures for knowledge production
Increased Distribution		Increased collaborations among users, Increased contributions from scholars	Greater reach, larger audiences, changes in circulation patterns
Informed decision-making	Informed by data (evidence-based policy-making)	Applying knowledge to wider contexts, More and better knowledge, Situated knowledge	More and better knowledge, Situated knowledge
Policy outcomes (enabling environments)	Structural and professional changes in government as a provider of data (technical rather than political)	Develop an enabling environment to sustain OERs	Policy and development impacts in the context of innovation
Political process outcomes / empowerment	Movement mobilization (Brazil)	Disrupting North-South power asymmetries	Claims to overall scientific innovation and national development

Increased access was a key first-order outcome across all three case studies, though it was expressed most specifically in Open Education, which talked about 'physical and material' access, as well as 'equitable' access. Linked to this outcome is inclusion, which was identified in both Open Education and Open Science. However, Open Education noted greater inclusion in emerging network societies and expanded quality educational opportunities, while Open Science focused on reducing exclusion.

Another differentiated second-order characteristic relates to action outcomes. In Open Government, this was framed as citizen empowerment, while in Open Education it included enhanced pedagogical practices, improved quality of learning outcomes, understanding motivations to use OERs, increased collaborations among users in the educational system, and increased contributions from scholars. In Open Science, the focus of action included greater

reach, larger audiences, and changes in circulation patterns, as well as new methods and measures for knowledge production.

Decision-making was another common first-order outcome. But Open Government stressed that decision-making can be informed by data (evidence-based policy) while Open Education included applying knowledge to wider contexts. Both Open Education and Open Science focused on how more and better knowledge, including situated knowledge, supports decision-making. Linked to this, policy outcomes appeared in all thematic areas, though expressed differently. Open Science recognized policy and development impacts in the context of innovation, while Open Education sought to develop an enabling environment to sustain OERs. Open Government policy items focused on structural and professional changes in government as a provider of data. Finally, we identified ideological outcomes: social movement mobilization in Open Government; disrupting North-South power asymmetries in Open Education; and broad claims to overall scientific innovation and national development in Open Science.

Mechanisms

The final element of our model focused on the mechanisms driving social change. This work revealed that in most cases, across two of the thematic areas (the exception is Open Education), researchers are not yet conducting in-depth studies of the mechanisms linking qualities of openness and development outcomes. While some researchers are starting to uncover mechanisms of change, most work associating open processes with development tends to be correlative, and therefore overlooks the links that work to structure the relationship between open processes and social change.

For example, within Open Government, all four sub-projects focus on assessing the qualities and development outcomes of openness, rather than examining the mechanisms driving social change. For example, Open Government work in Brazil, South Africa and India looked at links between use and impact, but with relatively null results (Davies, email discussion). This may be because use of open resources is still very nascent in this field. Without widespread uptake of open data, the conditions are not yet in place to study causality. This means that project researchers focus more on the limitations of data uptake and use (and thus on the qualities of open resources and associated conditioning factors, and their links to outcomes). The projects are therefore researching how to improve qualities of openness to achieve specific outcomes - but within each sub-project, the change mechanism that might point to how data resources can create positive outcomes has not yet been explored in detail. That said, a synthesis report that brings together findings across the Open Government projects does express two broad 'causal' approaches: 'domino effect' and 'ripple effect' mechanisms (Davies, 2014). As these Open Government projects move forward, researchers are starting to look into how they might disaggregate different aspects of openness in order to explore how they may be causally connected to certain specific kinds of outcomes (Davies, email discussion).

Similarly, at this point in time Open Science projects do not overtly focus on mechanisms of causation. While one sub-project (number 3) did establish a correlation between open

publishing in Latin America and numbers of citations in North America, it did not establish any causal link between them. Rather, the focus of this project is on correlation (specifically the impact of open access publications on citation impact factors, and changing the reputation of Open Science to support its adaptation in the academy). The Primary Investigator of this project is not necessarily moving in the direction of research focused on causality, and instead is examining work that looks at both openness and development without necessarily establishing causal links between them. For example, one project examines knowledge production for scientific innovation, which aims to establish an environment to more effectively share open resources.

The outlier in this analysis is Open Education, which does overtly focus on causality, including on certain specified mechanisms that lead to development outcomes. For example, sub-projects 5 and 6 found that appropriate contextualization, curation and co-creation of OERs lead to effective adaptation and learning. Other potential change mechanisms mentioned in Open Education research included peer-review, public scrutiny, easy of adaptation and awareness. Although still under development, at time of writing researchers in this area are trying to isolate the 'theory of change' at play in each of their projects. They are endeavouring to understand the key mechanisms underpinning the adoption of OERs by various stakeholders - including how they differ from one another. They plan to use the work of sociologist Margaret Archer as a theoretical lens to explain the interplay between structure, culture and agency evident in the adoption of OERs at a macro level.

4.5 Conclusions

In this chapter we operationalized our model of open development and applied it to existing I&N supported projects. Our findings once again demonstrate that these projects are meeting I&N's goal of producing "greater understanding of the context, dimensions, variations, implications, and quality of digital openness, particularly in the thematic areas of creative industries, learning, governance, and science" (I&N Prospectus, p. 10). These projects are differentiating 'quality' openness from 'inferior' openness, identifying outcomes of open development initiatives, and highlighting the conditioning factors shaping these processes. Through this exercise we adjusted our model to better reflect the intricacies of open development research both inside and across thematic areas. This supports Smith (2014b), who notes that: "Breaking down openness into its constituent parts, and connecting them to their value added, provides a useful starting point for both research and learning" (p.6). Our model conceptually separated different elements of the open development process and provided a tool that can yield insights as to how researchers might form testable hypotheses around different elements of open development.

Specifically, our two-stage analysis of the characteristics of the different elements of our model shows how projects both share commonalities and express differences across thematic areas. This finding supports Smith (2014b), who stresses the need to move away from universal definitions of openness, and instead incorporate the flexibility necessary to appreciate and understand local variations. Our two-stage mode of analysis provides a methodological tool that researchers can use to do this. They can use this model to identify how elements of open

development are articulated in communities of practice. It may help illustrate the distinct underlying assumptions and projected outcomes that shape open development initiatives in different thematic areas. As Smith (2014b) suggests, "by making the different openness practices clear, it becomes possible to begin to draw lessons from across different domains of open activities" and therefore better determine "what works and for whom and in what circumstances" (p.6). Our inductive analysis of the case studies revealed that even in cases where thematic areas expressed similar first-order factors, development initiatives focus on different goals, objectives, and terminologies. This points to the need to situate research hypotheses that aim to test the efficacy of these activities with reference to specific thematic areas.

Earlier in this report we discussed how I&N's open development research is establishing a foundation for this kind of work. Our literature review on openness revealed that very little existing research seeks to demonstrate the causal connection between openness and social change. Our examination of the case studies found that much of the work we looked at is not yet aiming to demonstrate causal links between open content, related social processes, and development outcomes. However, it is starting to move in that direction, while also continuing to establish the foundational evidence that will enable future work in that area. IDRC is aware of this issue, and so are the PIs of the three case studies that we examined. Our analysis illustrates how their projects are conducting research that can push openness in directions that can contribute to development objectives and inform IDRC's emerging agenda for research and social change.

5.0 Discussion, Recommendations and Conclusions

5.1 Overall Findings

For this evaluation we were asked to conduct a summative and formative evaluation of the quality of openness outcomes of past and ongoing I&N projects. Our overall summative evaluative finding is that I&N has substantially met the outcome criteria set out in its prospectus in the areas of networked innovation, research recognition and policy and practice. In particular, we found that I&N is a major contributor in the field of Open Development, which is in turn advancing access to knowledge (A2K) in underprivileged contexts, and producing cutting edge research within the long-established field of knowledge for development (K4D). Its work is driving forward a maturing research agenda around open development. We showed how the operationalization of outcomes categories has shifted over time in order to ensure that later projects leverage and build on the findings of earlier projects. And we demonstrated how these ideas are being disseminated within an active research community, and being taken up by practitioners and policy-makers. IDRC plays a unique role in this space, providing research support services rather than technical or policy-related funding.

Our formative evaluation tackles the question of whether and how I&N research can demonstrate the relationship between openness and social change in developing contexts. Specifically, we were asked to establish a common understanding of what is meant by "quality of openness" or "quality openness" by both the I&N team and its research partners, and to identify project outcomes consistent with 'improved quality of openness.' This work responds to a preoccupation of the I&N unit, which seeks to produce evidence about the impacts of openness that stands apart from the pressures of implementing and/or promoting a particular program. This kind of evidence is essential to demonstrating the benefits of openness to policy-makers, and in particular, instructing them on how best to structure legal frameworks, policies and supporting environments in ways that facilitate the positive effects, and curtail the negative impacts, of open initiatives.

We found that "quality of openness" can be interpreted in two different ways: as the qualities of openness within openness initiatives, and as the quality of the outcomes from those initiatives. Our analysis demonstrates that I&N supported projects have produced ample evidence about best practices in openness initiatives, including careful consideration of what counts as 'open,' and the conditions under which openness can be attained. Open resources are defined as those which are accessible, digital, affordable, locatable, timely, sharable, and appropriately licensed. In addition, they need to be presented in a format that allows for their reuse and modification. This finding in turn indicates the type of policy, institutional and technical environments necessary to support the realization of openness initiatives.

Projects furthermore hypothesize that openness can produce increased access, inclusion, efficiency, engagement, increased distribution, informed decision making, policy outcomes around enabling environments, and changes to political processes (empowerment). However,

Figure 5.1: Highlights from this report

"I&N's work brings together direct interventions in open social processes, with insights from research, to produce advice that helps policy-makers catch up to changing opportunities and threats." (p.4)

"In conversation with various experts and practitioners working in this space, we learned that IDRC is unique in its funding of action and reflection around open social processes, development and social change." (p.4)

Summative:

"In our overall assessment, I&N has met the objectives set out in its prospectus. The program has supported the creation of networked environments for innovation that are able to identify and promote desirable social change processes; it has fostered a field of study that produces research of interest and utility to peer groups, the media and policy-makers; and it has influenced policy both directly, and also indirectly through the promotion of policy leaders and engagement with policy communities." (p. 40)

"Network building has been a significant locus of capacity building in I&N supported projects. […] The networked research experience is highly valued by I&N's recipients, and is cited as one of the greatest values that they take away from participating in IDRC-sponsored projects." (p. 29)

"One of the best ways of leveraging networks to drive innovation is precisely by making data open." "Networks have been creative in their ability to leverage open platforms to produce new applications and evidence about the impact of open processes in developing contexts." (p. 30)

"I&N has gone a long way towards identifying key debates, establishing a set of theoretical and methodological preoccupations, convening networks of scholars, and creating platforms for knowledge dissemination. These efforts have concentrated attention on open development as a specific focus for theory, policy and practice." (p. 32)

"I&N supported open development projects have achieved significant policy wins, and have also penetrated policy communities, pushed on policy paradigms, and influenced policy agendas." (p. 37)

"We identified several examples in which I&N project participants leveraged their participation in IDRC-supported research to take on leadership positions within their field. […] Meanwhile, I&N projects also contribute to and engage in policy work in a variety of ways, from facilitating the establishment of policy actors, to engaging in significant policy debates." (p.40)

"IDRC's key project modality for open development—research networks organized around open calls for proposals—was described as an effective approach overall. PIs told us that this enables networking among a diversity of researchers. We observed, however, that some networks were more cohesive than others, suggesting that more can be done to support effective collaborations within large scale research networks." (p. 44)

"I&N POs are widely respected and valued for their collaboration in project development and implementation. […] Along with the strengths of its staff, PIs identified IDRC's international reputation as a key research support. In particular, they pointed out that IDRC is one of the few organizations in the world supporting open development research (instead of advocacy work or technical implementation). IDRC's specific focus on this area of research affords I&N partners access to experts, funding, and evidence from around the world." (p. 44)

Formative:

"I&N's work is driving forward a maturing research agenda around open development. As a result, the operationalization of outcome categories within and through projects is progressing over time. In particular, we see that earlier projects made progress towards identifying the qualities of the openness facilitated by networked technologies, as well as the factors that either facilitate or constrain quality openness. More recent projects are increasingly oriented towards drawing out crosscutting lessons from open development initiatives that may serve to shift the terms of policy debate." (p. 42)

"Over time I&N has become increasingly preoccupied with producing evidence about the impacts of openness that stands apart from the pressures of implementing and/or promoting a particular program. This kind of evidence is essential to demonstrating the benefits of openness to policy-makers, and in particular, instructing them on how best to structure legal frameworks, policies and supporting environments in ways that facilitate the positive effects, and curtail the negative impacts, of open initiatives." (p. 23)

"While I&N has gone a long way towards establishing open development initiatives, the benefits of open phenomena remain unproven. This would suggest that I&N research should move beyond studying the qualities of openness within specific localized projects, and focus its energies on crosscutting studies that identify the factors driving quality openness." (p. 48)

"The goal here is not to discover the magic bullet of openness causality. Rather, the goal is to understand the mechanisms at work in social processes enabled by openness, how they are similar or different between thematic areas and development contexts, and to draw out their relationship to social change processes. In other words, the idea is to begin to spell out the 'theory of change' at work in open processes, such that earlier I&N research can be leveraged in ways that push the boundaries of he overall open development research agenda." (p. 58)

"Our examination of the case studies found that much of the work we looked at is not yet aiming to demonstrate causal links between open content, related social processes, and development outcomes. However, it is starting to move in that direction, while also continuing to establish the foundational evidence that will enable future work in that area. Our analysis illustrates how their projects are conducting research that can push openness in directions that can contribute to development objectives and inform IDRC's emerging agenda for research and social change." (p. 73)

while I&N has gone a long way towards establishing open development initiatives, and researching their characteristics, the benefits of open phenomena remain unproven. Research is moving in this direction, while also continuing to establish the foundational evidence that will enable future work in that area. Understanding the links between openness and wider processes of social change is important to providing policy, institutional and technical advice that speaks to the broader conditions for educational attainment, citizenship, decision-making, knowledge production, innovation or productivity in challenging contexts.

In particular, I&N is beginning to explore the mechanisms at work in linking open initiatives to human activities in ways that generate social innovations of significance to development. We looked at some of the different mechanisms that have been hypothesized by I&N-supported projects. These include push factors such as the data holders understanding of data usage, the preparedness or acceptance of user communities, institutional policies, and wider policies and regulations; as well as pull factors including the awareness, capacity and attitude of users. In other words, the quality openly networked social processes rely on not just quality openness, but also supportive environments that create linkages between open resources and the people who might leverage them to create improvements in their area of attention, whether that be governance, education or knowledge production. This finding suggests that I&N research should move beyond studying the qualities of openness within specific localized projects, and might focus its energies on crosscutting studies that identify the factors driving quality openness, and permit comparative analysis of these factors.

5.2 Discussion

In order to move I&N's agenda forward, it is our opinion that the program should strive to create greater clarity around the relationship between its programmatic and research objectives. In other words, it is important to clarify and create specific guidance around how the research trajectory articulates with programmatic mandates to engage in network building and innovation, promote research recognition, and to affect policy and programming. For example, if I&N's research does take up the challenge of identifying and studying the push and pull mechanisms linking openness to development, then it would be important to also identify the concrete ways in which this research might contribute to policy change. The objective here is _not_ to instrumentalize the research process, but rather to better communicate I&N's objectives to research partners, so as to facilitate the process of negotiating research partnerships, and also improve the process of managing research projects.

Doing so will put I&N in a much better position to articulate its narrative around open development, something that both POs and PIs noted required greater attention. Having a clear narrative provides partners with a means to both justify their work, and also promote open development. This in turn will help partners to be able to identify stakeholders, articulate networks, and also to identify opportunity for programmatic or policy intervention. In addition, clarity will also facilitate collaboration within the team, and coordination across projects. In this sense, it is not necessary for every project to address every aspect of the openness agenda, however, it _is_ important for each project to be clear on how they are contributing within an

overarching program of activities. The can enable different projects to leverage each others findings, and also different program officers to strategize around how best to articulate project activities.

In considering this narrative, there are certain 'big ticket' questions that I&N might wish to reflect on. These include the extent to which it is desirable or possible to engage in large, cross-cutting research projects on open development, the challenge of 'scaling up' research, and the need to balance intellectual freedom and local knowledge with the desire to advance an overarching research agenda, and to achieve programmatic goals. A productive way of engaging with these questions is to pose an overarching 'theory of change' that articulates I&N's view of the shifting research agenda around Open Development, develops a narrative around the relationship between research and programmatic goals, and provides scope for different types of research contributions, paying attention to the ways in which different areas of research or types of research contributions can be leveraged by each other. Having this information can in turn animate renewed discussions about programmatic goals, and how best to achieve them, including questions around leadership, creating strategic alliances and scaling up research results. These larger discussions are sure to be top of mind for I&N during the final years of its current prospectus, and as it thinks ahead to its future activities.

6.0 Appendices

6.1 Terms of Reference

1. Terms of Reference and Schedule

Pursuant to the "request for proposal" (RFP) #13140079, the Consultant shall conduct a summative and formative, utilization-focused evaluation of the "quality of openness" (QoO) outcomes in past and ongoing Information and Networks (I&N) supported research projects.

1.1 Objectives

The objectives of this evaluation are the following:
- To establish a common understanding of what is meant by "QoO" by the I&N team and its research partners. This improved understanding would ideally include a rubric which would help identify QoO outcomes.
- To extract principles or lessons about what works or not when attempting to achieve "QoO" outcomes.
- To evaluate the degree to which I&N projects are achieving "QoO" outcomes.
- Consolidate lessons to ensure that learning informs future I&N initiatives.

1.2 Intended Users and Uses

The primary intended users are the I&N program with two main uses (1) integrate lessons into current and future programming related to openness, and (2) as data for reporting to the externally funded Information and Networks in Asia and Sub-Saharan Africa (INASSA) program , as well as I&N's reporting processes. The secondary intended users are I&N partners, who can also incorporate lessons learned into their project activities.

1.3 Evaluation Questions

It is expected that there will be further development of the key evaluation questions. The following are potential key evaluation questions:
- How does the I&N team understand the quality of openness (QoO)? How do its research partners understand it?
- What does current research and literature on openness and development tell us about what makes openness qualitatively better?
- To what extent is I&N's openness programming achieving QoO outcomes?
- What are the various types of QoO outcomes?
- How do research partners determine 'quality' in a QoO outcome?
- What types of research questions tend to lead to QoO outcomes? Why? Which ones do not?
- What are the challenges/barriers to achieving QoO outcomes? What are the opportunities?

1.4 Evaluation Principles

The evaluation will be conducted by the evaluators and judged by the Centre's Evaluation Unit according to the following four internationally recognised standards:

Utility – Will serve the information needs of intended users.

Feasibility – Will be realistic, prudent, diplomatic and frugal.

Propriety – Will be conducted legally, ethically and with due regard for the welfare of those involved in the evaluation, as well as those affected by its results.

Accuracy – Will reveal and convey technically adequate information about the features that determine the worth or merit of the programme being evaluated.

In addition, the evaluators will conduct the evaluation in as participatory a manner as the primary intended users' desire.

1.5 Deliverables and Timelines

The assignment is for a maximum of 56 full-time working days over a period of 7 months from the date the contract is signed. The assignment is expected to be carried out between July 2014 and January 2015, as detailed in the table below.

Activities and Deliverables	Date
Evaluators submit workplans and evaluation framework	July 2014
Evaluators present draft findings Evaluators and I&N discuss findings and conclusions	August 2014
Evaluators submit draft evaluation reports	November 2014
Evaluators submit final evaluation reports	January 2015

The work under this contract must be performed by **January 31, 2015**. Section A9 sets out the Centre's expectations and will form the basis of its determination whether or not the deliverables are satisfactory.

6.2 Interview Scripts

PO Interview Script

1) What is your role in the I&N program?

2) How do you think about QoO? What is your explanation or definition?

3) Which of your projects fall under the 'QoO' umbrella?

4) What is your understanding of what the QoO program is trying to achieve?
   - Example of a major success in terms of QoO. What made this 'successful'?
   - Example of a difficult project in terms of QoO. What made this 'difficult'?

5) What do you see as I&N's major strengths in terms of facilitating research on QoO.

6) What do you perceive to be the main challenges.

7) Let's discuss the 'modality of setting up projects'. What's the modality of your QoO projects?

8) The Prospectus lays out various project modality tensions: directive/responsive; advocacy/research. What tensions to you perceive in your management of QoO projects? How do you address them?

9) What role (if any) do these tensions play in the success of QoO projects?

10) Let's discuss recipient capacity/needs/modalities. What are their main demands when it comes to QoO projects? What are their main limitations?

11) What role (if any) do the recipient characteristics play in the success of QoO projects?

12) What are your thoughts about the _form_ of knowledge in Open Development interventions? For example, is knowledge conceived as a transferable commodity and/or as a socially embedded practice? How does this understanding of knowledge affect the projects that IDRC chooses to fund?

13) In your view, what _role_ does knowledge management or knowledge translation play in Open Development interventions? How does this role affect the projects that IDRC chooses to fund?

14) Do you have any further questions or comments for us?

PI Interview Script (Older Projects)

Summative:
- We're doing outcome harvesting. Do you have any resources that you can share with us (final reports for example)
- If not, or if it was a while ago, we are interested in doing a small survey to gather outcomes from your project. We're particularly interested in seeing what kinds of longer-term outcomes / impacts your work had.
- We would need:
  - Your support for the survey
  - List of people to contact
  - Help with translation / appropriate language (as necessary)
- In return, we would be happy to share the results.

Formative:
In addition to summing up past project results, we're also trying to suggest how IDRC's openness research could advance in the future. In particular, IDRC wants to focus on quality of openness, and has asked us to produce suggestions about this. Based on extensive research over the summer, we produced XXX model.

- Does this model resonate with you? Why or why not?

- Would it apply to the work you did with IDRC? Why or why not?
- Would your research recipients have found this model useful? Why or why not?
- Based on your past work, what are the key condition factors for openness?
- What are the main outcomes (DVs) that should be focused on in openness research?
- What are the key vectors of openness in your area of research?

Closing:
- What is your understanding of IDRC's goals around openness research?
- How did your project contribute to these goals?
- What did you see as I&N's major strengths and challenges in terms of facilitating research on openness?
- Overall, based on your experience doing work on openness, what advice would have for future projects?

PI Interview Script (Newer Projects)

1) Tell us about your project:
- Main goals, research questions, methods, etc.
- Administrative Structure
- Capacity / needs / modalities – what are you main demands for QoO projects and what are your main limitations.

2) Your understanding of IDRC's goals around openness
- What is your understanding of IDRC's goals around openness research?
- How is your project contributing to these goals?
- What do you see as I&N's major strengths and challenges in terms of facilitating research on openness?
- What do you need from them / what (more) could they be doing to help you?

3) Our model
    IDRC wants to focus on quality of openness, and has asked us to produce suggestions about this. So not what is openness, or what kind of openness, or more openness, but quality openness. Based on extensive research over the summer, we produced a model that focuses on the factors that condition *quality* (or successful) openness outcomes.
    QoO as a particular area of investigation will seek to understand the factors determining the link between open processes and development outcomes. Under what conditions do open processes (such as collaboration, reuse and adaptation, open content, etc.) lead to positive change?
    The factors conditioning quality might include the nature of the openness (including the ICT environment), openness process themselves (Reuse and Adaptation in this case), and the context in which these relationships happen (including the setting (e.g. educational), the policy environment, culture, history, etc.).

QoO would not be asking: What does openness look like in developing contexts? Does openness lead to change? How does openness differ from enclosure?

4) Validation of our model?
- Does this model resonate with you? Why or why not?
- Would it apply to the work you are doing with IDRC? Why or why not?
- Would your research recipients find this model useful? Why or why not?
- What's missing from the model? What would you add? Change?
- What are the key conditioning factors for openness in your area of research?
- What are the key vectors of openness in your area of research?
- What are the main outcomes (DVs) that should be focused on in your field?

5) Outcome Harvesting
- We're doing outcome harvesting. Do you have any resources that you can share with us (reporting, metrics, etc.)
- Would it be worth doing a small survey to gather outcomes from your projects? Is yes, we would need:
  - Your support for the survey
  - List of people to contact
  - Help with translation / appropriate language (as necessary)
- In return, we would be happy to share the results.

6.3 Focus Group Script (Was conducted in Spanish for one group)

1) WELCOME
- Thanks for agreeing to be part of the focus group.
- Introduce myself

2) PURPOSE OF FOCUS GROUPS
We have been asked by IDRC to do a formative evaluation of *research* in the field of open development. This means that they are looking for our insights into how research could be improved, and what IDRC could be doing to improve it. I am NOT evaluating your work – rather I am evaluating IDRC's work. I spoke with [PI], and asked them how we could best include [your project] in this process. They suggested a focus group. A focus group is useful for our purposes because:
- It will allow us to think about what constitutes an outcome in your area of research. (So you get to tell IDRC what an outcome is from your point of view.)
- We can then gather information about the outcomes of your work and think about how IDRC can support the achievement of those outcomes.
- And this can be an input into the design of future projects.
- It can also help you think about how to focus your work, and how to justify it. What story do you tell when you explain why you are doing this kind of research.
We need your input and want you to share your honest and open thoughts with us, so here are some ground rules:

- We want everyone to participate. If I haven't heard from you in a while, I may call on you.
- There are no right or wrong answers – every one's opinions are important. Please speak up if you disagree with something someone is saying.
- Since I can't see you, if you need to say something, but aren't able to get a word in, please text me in Skype and I will put you in the cue.
- But if you find you can't get something out, or don't want to share it publicly there will be an exit survey that will allow you to share that information with me privately.
- Obviously we will be writing a report based on what we learn here. That report will maintain your anonymity.

Our aim is to finish in about 1.5 hours today. Then I will send you an exit survey to fill out in the last 30 minutes. So in total – 2 hours.

3) ICE BREAKER

We're going to go around the group – I will call out your name. I'd like you to tell me about what you work on – what's your research agenda or research identity? Then share with us your favorite music right now, and why. (I want to know you as a researcher, and not as an IDRC recipient.)

4) ENGAGE

a) What do you hope to achieve with your research about X? If you had unlimited resources and unlimited time, what would be the culimation of your life's work?
b) Ok – so obviously projects do not last a lifetime, nor do they have unlimited resources. What kinds of outcomes need to happen in the shorter term?

5) EXPLORE I

a) So then, tell me, what constitutes an outcome for this line of work within your cultural, historical, political context?
b) Let's dig a little deeper here. I'm going to mention a few potential areas of impact – please tell me if it is important or not, and why:
  - Policy milieu, processes of policy-making, change specific policies
  - Capacity building / leadership training / network building
  - New knowledge
  - New practices
  - Awareness
c) Are their other areas that we need to be thinking about?

6) EXPLORE II

a)   With all of this in mind, what have been the main outcomes of the project you just finished? Why did those outcomes matter?
b)   Are there any additional outcomes – perhaps secondary outcomes – that should be taken into consideration?
c)   Please tell me about any specific challenges that stood in the way of achieving key outcomes from this work.

7) EXIT
- Is there anything else you would like to add?
- Was this useful? How so?
- Exit survey – please fill it out! J
- I will circulate the narrative that results from this discussion.

6.4 Surveys

Outcome Harvesting Survey

Dear XXX,

As you may know, the XXX project, in which you participated, received its funding from Canada's International Development Research Centre (IDRC). I have been contracted by IDRC to conduct a survey of past projects in order to capture their impacts on development. I have been in touch with XXX who has enthusiastically agreed to support this survey, since learning about project outcomes is a useful way to identify possible future research and development priorities.

I hope that you can help us out by completing the small survey here: [Survey link]. It should only take about 15 minutes of your time.

If you have any questions, please do not hesitate to contact me.

Kind regards,

Katherine Reilly
Assistant Professor, School of Communication
Simon Fraser University

Thank you for agreeing to fill out our survey about the outcomes of IDRC projects focused on Open Development. The survey should take about 15 minutes to complete. If you have any questions, please do not hesitate to contact Katherine Reilly at kreilly@sfu.ca.

Name: [Field]

Please select the project you participated in:

-Scholarly Communication in Africa Programme (with Eve Gray and Michelle Willmers)
-Open Data for Public Policy in Latin America and the Caribbean (with Lisa Calsa and Jorge Patiño)
-Openness and Quality in Asian Distance Education Technology (with Naveed Malik and Raj Dhanarajan)

Please state the nature of your contributions to this project.

[Field]

IDRC marks a strong distinction between outputs and outcomes.   Outputs are products, while outcomes are the *impacts* of those products. For example, a research report is an output that may or may not have the outcome of influencing key policy-makers.   A workshop is an output that may have the outcome of generating new leadership around an issue. With this in mind, please answer the following questions:

How did your work on this project shape the policy milieu, influence processes of policymaking or change specific policies in your area of concern? Please describe.

[Field]

Did you do any capacity building or leadership training work in this project? If so, has it lead to any specific outcomes?   Please describe.

[Field]

Did the knowledge produced by your work result in any specific outcomes for research, development objectives or social change processes? Please provide specific examples.

[Field]

Did your project result in the uptake of any new practices? Please describe.

[Field]

Has your project generated greater awareness about the issues you were dealing with? Please provide specific examples and evidence.

[Field]

Overall, in your opinion, what was the main significance of your work and what impacts have been generated by the project?

[Field]

How can IDRC better support research on Open Development?

[Field]

Are there other comments you want to make regarding the outputs or outcomes of your work?

[Field]

<u>Focus Group Exit Survey (Also for people who missed their focus group)</u>

Thank you for participating in our group discussion today!

Focus groups are a great way to gather information, but sometimes individual voices can get lost in the process. Also, ideas may come to us after the conversation had ended. Please take a moment to scan the questions below and add any additional thoughts you might have.

Kind regards,

Katherine Reilly
Assistant Professor, School of Communication
Simon Fraser University

Name: _____

Please select your project:

-Open Business Models: New Compensation Mechanisms for Creativity and Inclusion
-African Innovation Research on Intellectual Property's Role in Open Development

1) How does your work on this project shape the policy milieu, influence processes of policymaking or change specific policies in your area of concern? Please describe.

2) Have there been any specific outcomes from capacity building or leadership training work that you did as part of this project?

3) Has the knowledge produced by your work resulted in any specific outcomes for research, development objectives or social change processes? Please provide specific examples.

4) Has your project resulted in the uptake of any new practices? Please describe.

5) Has your project generated greater awareness about the issues you were dealing with? Please provide specific examples and evidence.

6) Overall, in your opinion, what was the main significance of your work and what long-term impacts may be generated by the project?

7) Are there other comments you want to make regarding the outputs or outcomes of your work?

Estimados/as,

¡Muchas gracias por participar en la discusión grupal del día de hoy!

Las discusiones grupales, o focus groups, son una gran herramienta para recolectar información. Sin embargo, en ocasiones se corre el riesgo de que las voces u opiniones individuales se pierdan en el proceso, o de que vengan más ideas a nuestra cabeza cuando la conversación ya ha terminado. Por este motivo, les pido que por favor se tomen un momento para revisar las preguntas que se encuentran a continuación y para añadir cualquier idea adicional que puedan tener. Les agradezco de antemano por su respuesta.

Saludos cordiales,

Katherine Reilly
Profesora de la Escuela de Comunicación
Simon Fraser University

Nombre: _____

1) ¿Cómo este proyecto aporta en el ámbito de generación de políticas, influye en el proceso de formulación de políticas, o cambia políticas específicas en los temas en los que se enfoca? Por favor describa su respuesta.

2) ¿Ha habido resultados específicos del trabajo realizado en torno al fomento de capacidad o de formación y capacitación para el liderazgo que se llevó a cabo como parte de este proyecto? ¿Cuáles han sido estos resultados?

3) ¿Ha tenido el conocimiento producido por su trabajo resultados específicos en investigación, objetivos de desarrollo, o procesos de cambio social? Por favor proporcione ejemplos específicos.

4) ¿Su proyecto ha dado como resultado la adopción de nuevas prácticas? Por favor descríbalas.

5) ¿Ha generado su proyecto mayor conciencia acerca de los temas en los que se enfoca? Por favor proporcione evidencia y ejemplos específicos.

6) En general, ¿cuál considera usted que es el mayor aporte de su trabajo y qué impactos cree que generará su proyecto a largo plazo?

7) ¿Hay algún otro comentario que le gustaría hacer acerca de los productos y los resultados de su trabajo?

6.5 Respondents

	Population	Response	Notes
Project Officer Interviews	6	5	Matthew Smith not interviewed; 4 former POs not interviewed.
Principal Investigator Interviews	21	20	16 interviews conducted
Scholarly Publishing Focus Group	12	6	All exit surveys were by focus group participants.
African AIR Focus Group	18	12	All exit surveys were by focus group participants.
OBM Focus Group	9	6	All exit surveys were by focus group participants.
SCAP Survey	4	1	
Open Data Survey	8	3	
Asian Dist. Ed. Survey	12	6	
TOTAL	**90**	**59**	**66%**

7.0 Bibliography

Alperin, P. & Fischman, G. (2014). Quality in the Open Scholarly Communication of Latin America. 4th Technical Report, submitted to IDRC.

Benkler, Y. (2006). *The Wealth of Networks: How Social Production Transforms Markets and Freedom.* New Haven: Yale University Press.

Bennett, G. & Jessani, N. (2011). "Section 1: The Concept - Knowledge Translation and Management," in G. Bennett and N. Jessani, The Knowledge Translation Toolkit, Bridging the Know-Do Gap: A Resource for Researchers, pp.3-46.

Braybook, K., Nissila, J., & Vuorikivi, T. (2013). Exploring Open Development. In *The Open Book* (500th ed., pp. 45-51). London: The Finnish Institute in London.

Chu, Pin-Yu & Chang, Kai-Yuan. (2014). Open public sector information: Establishment of public-value oriented performance evaluation indicators. Proceedings of the European Conference on e-Government, 385-392.

Chun-Hua, B., & Lu, S. (September, 2009). Impacts of geographic clusters and network status on inovation performance: An empirical study on manufacturing industry in China. International Conference on Management and Service Science, Wuhan, China.

Constantinides, P., & Barrett, M. (2006). Large-scale ICT innovation, power, and organizational change: The case of a regional health information network. *The Journal of Applied Behavioral Science*, 42(1), 76-90.

Cyranek, G. (2014). Open development in Latin America: The participative way for implementing knowledge societies. http://www.academia.edu/7991937/Open_Development_in_Latin_America_The_particip ative_way_for_implementing_knowledge_societies

Davies, T. (2014). *Open Data in Developing Countries: Emerging Insights from Phase I*. Web Foundation (July 15, 2014). Retrieved January 23, 2015 from: http://opendataresearch.org/sites/default/files/publications/Phase%201%20- %20Synthesis%20-%20Full%20Report-print.pdf

Davies, T., Perini, F., & Alfonso, J. M. (2013). *Researching the emerging impacts of open data: ODDC conceptual framework*. ODDC Working Papers #1 (July 2013).

de Beer, J., Armstrong, C., Oguamanam, C., & Schonwetter, T. (2014). Current realities of collaborative intellectual property in Africa . In J. de Beer, C. Armstrong, C. Oguamanam & T. Schonwetter (Eds.), *Innovation & intellectual property collaborative dynamics in Africa* (pp. 373-408). Claremont, South Africa: University of Cape Town Press.

de Beer, J. & Bannerman, S. (2013). "Access to Knowledge as a New Paradigm for Research on ICTs and Intellectual Property," in *Connecting ICTs to Development: The IDRC experience* (pp. 49-57). Ed. by L. Elder, H. Emdon, R. Fuchs and B. Petrazzini. Anthem Press: London and New York.

Earl, Sarah, Fred Carden & Terry Smutylo (2001). Outcome Mapping: Building Learning and Reflection into Development Programs. Ottawa: IDRC.

Elder, L., Emdon, H., Fuchs, R., & Petrazzini, B. (Eds.) (2013). *Connecting ICTs to Develoment: The IDRC Experience*. New York: Anthem Press.

Espanha, R., & Quintanilha, T. L. (2011). Open access and multilingual approach to communication journals. *Online Journal of Communication & Media Technologies*, 1(4), 97-120.

Ferguson, J., Huysman, M. & Soekijad, M. (2010). "Knowledge management in practice: Pitfalls and potentials for development," *World Development,* 38(12): 1797-1810.

Flor, A. G. (2013). "ICT Praxis: Bridging Theory and Practice," in *Connecting ICTs to Development: The IDRC experience* (pp. 49-57). Ed. by L. Elder, H. Emdon, R. Fuchs and B. Petrazzini. Anthem Press: London and New York.

Georgieva-Andonovska, E. (2014). Using ICT to improve public service delivery - lessons from the Karnataka beneficiary verification system. BVS. Academic Conferences & Publishing International Ltd.

Gigler, B., & Bailur, S. (Eds.). (2014). *Closing the feedback loop: Can technology bridge the accountability gap?* Washington, DC: World Bank.

Girard, B. & F. Perini (Eds.), *Enabling openness: The future of the information society in Latin America and the Caribbean*. Montevideo, Uruguay; Ottawa, Canada: Fundación Comunica; International Development Research Centre.

Graham, M. & Hogan, B. (2013). Uneven Openness: Barriers to MENA representation on Wikipedia. Final Project Report submitted to IDRC.

Hartmann, A. & Linn J. (2008). Scaling up: A Framework and lessons for development effectiveness from literature and practice. Wolfensohn Institute for Development Working Paper 5, October. Washington, CD: Brookings Institute.

Hercheui, M. D., Nicholson, B. & Ameripour, A. (2012). Theorizing open development through an institutional lens: A study of Iranian online interactions. *ICT Critical Infrastructures and Society, 386*, 349-359.

Hodgkinson-Williams, C. (2013). *Research into Open Educational Resources for Development in Post-secondary Education in the Global South (ROER4D): Research Scoping Document*. Cape Town, South Africa: University of Cape Town. Retrieved January 23, 2015 from:
http://open.uct.ac.za/bitstream/handle/11427/8430/ROER4D%20Scoping%20Document%20-%20Dec%202013.docx?sequence=4

IDRC. (2006). Acacia Prospectus 2006-2011. https://idl-bnc.idrc.ca/dspace/handle/10625/45498

IDRC. (2006). ICT4D Americas Program Initiative: Description of the program for 2006-2011. http://idl-bnc.idrc.ca/dspace/handle/10625/46182

IDRC. (2011). Information and Networks Program Overview (2011-2016). Ottawa: Science and Innovation Program Area, International Development Research Centre. http://www.idrc.ca/EN/Documents/Information-Networks-Prospectus-2011-2016.pdf

IDRC. (2009). Innovating for Development: Strategic Framework 2010-2015. http://idrc.ca/EN/Documents/innovating-for-development-idrc-strategic-framework.pdf

IDRC. (2006). Pan Asia Networking Prospectus 2006-2011. http://idl-bnc.idrc.ca/dspace/handle/10625/45504

IDRC. (2012). *Quality, Reach, and Impact of Open Scholarly Publishing in Latin America (Project Summary)*. Retrieved January 23, 2015 from: http://www.idrc.ca/en/programs/science_and_innovation/information_and_networks/pages/ProjectDetails.aspx?ProjectNumber=106660

IDRC & The Web Foundation. (2012). *Exploring the Emerging Impacts of Open Data in the South: Open Call for Research Proposals*. Retrieved January 23, 2015 from: http://public.webfoundation.org/2012/07/ODR-CfP.html

JoungIn, C., Wook, B., Chu, L. & Bae, K. (2013). The impact of openness on innovation efficiency: Manufacturing and service industry. Portland International Conference on Management of Engineering and Technology: Technology Management in the IT-Driven Services, San Jose, California.

Kassen, M. (2013). A promising phenomenon of open data: A case study of the Chicago open data project. *Government Information Quarterly*, 30(4), 508-513.

Kratke, S. & Brandt, A. (2009). Knowledge networks as a regional development resource: A network analysis of the interlinks between scientific institutions and regional firms in the metropolitan region of Hanover, Germany. European Planning Studies, 17(1), 43-63.

Lessig, L. (2007). *Code and Other Laws of Cyberspace. Version 2.0.* New York: Basic Books.

Linders, D. (2013). Towards open development: Leveraging open data to improve the planning and coordination of international aid. *Government Information Quarterly, 30*(4), 426-434.

Linders, D. (2012). How can open development improve the effectiveness of aid?: Leveraging open data, open standards, and web 2.0 interactivity for better development outcomes. *Proceedings of the 13th Annual International Conference on Digital Government Research,* pp. 155-164.

Mansell, R. (2013). Introduction. In B. Girard, & F. Perini (Eds.), *Enabling openness: The future of the information society in Latin America and the Caribbean*. Montevideo, Uruguay; Ottawa, Canada: Fundación Comunica; International Development Research Centre.

Mansell, R. (2013). A summary of open development. *IV Ministerial Conference on the Information Society for Latin America and the Caribbean,* Montevideo, Uruguay.

McFarlane, C. (2006). "Knowledge, learning and development: a post-rationalist approach. *Progress in Development Studies*, 6(4): 287-305.

Molin, J. (2011). Open innovation: Transforming health systems through open and evidence-based health ICT innovation. *Communications & Strategies*, (83), 17-35.

Ng, M. (2013). Project Completion Report, 104917: Openness and Quality in Asian Distance Education. Ottawa: International Development Research Centre.

Patton, M. Q. (2008). *Utilization-Focused Evaluation: 4th Edition.* Thousand Oaks, CA: Sage.

Perini, F. & Smith, M.L. (2014). Rights Tensions in a Networked Society. Working Document, Ottawa: International Development Research Centre.

Rashid, N. (2009). E-government as a tool to promote transparency and openness: The case of Bangladesh. Proceedings of the International Conference on e-Government, 156-164.

Ramírez R. & Brodhead, D. (2013). *Utilization Focused Evaluation: A primer for evaluators.* Penang, Malaysia: Southbound.

Riesch, H., Potter, C., & Davies, L. (2013). Combining citizen science and public engagement: The open AirLaboratories programme. *JCOM: Journal of Science Communication*, 12(3), 1-19.

ROER4D. (2014). ROER4D Research Workshop Report. Cape Town, South Africa, 9-12 December 2013. Cape Town, South Africa: University of Cape Town.

Schonwetter, T. & de Beer, J. (2010). The 'Open A.I.R.' Project. Project proposal submitted to IDRC.

Schonwetter, T. & de Beer, J. (forthcoming). Open A.I.R. Final Technical Report. Not yet submitted to IDRC.

Sen, A. (1999). *Development as Freedom.* New York: Oxford University Press.

Skinner, Q. (2003). The Third Concept of Liberty. *Proceedings of the British Academy, 117*, 23-25. Retrieved October 4, 2014, from http://www.britac.ac.uk/templates/asset-relay.cfm?frmAssetFileID=61554.org/

Smith, M.L. (2013). "Towards Comparative Research on Openness." SIRCA II Workshop. Cape Town, December 11. Ottawa: International Development Research Centre.

Smith, M.L. (2014a). "Researching Open Development: Towards an Interdisciplinary Research Agenda." SIRCA III Workshop. Seattle, Washington, 2014. Ottawa: International Development Research Centre.

Smith, M.L. (2014b). Being Open in ICT4D. Proceedings of the 13th International Conference on Social Implications of Computers in Developing Countries, Negombo, Sri Lanka, May 2015. Social Science Research Network, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2526515

Smith, M. & Calderon, K. (2014). Towards comparative Open Development research. I&N Working Paper.

Smith, M., Elder, L. & Emdon, H. (2011). Open development: A new theory for ICT4D. *Information Technologies and International Development*, 7(1), iii-ix.

Smith, M. & Elder, L. (2010). Open ICT ecosystems transforming the developing world. *Information Technologies and International Development*, 6(1), 65-71.

Smith, M., Engler, N., Christian, G., Diga, K., Rashid, A. & Flynn-Dapaah, K. (2008). *Open ICT4D*. International Development Research Centre.

Smith, M. & Reilly, K. (Eds.). (2013). *Open development: Networked innovation in international development.* Cambridge, Massachusetts: the MIT Press.

Spence, R. & Smith, M. (2010). ICT, development, and poverty reduction: five emerging stories. *Information Technologies and International Development*, 6 (Special Edition), 11-17.

Stoffregen, J. D. (2013). Developing e-government: An open and collaborative approach. *EGovernment Review*, 11, 22-23.

Swan, A., Willmers, M. & King. T. (2014). Costs and Benefits of Open Access: A Guide for Managers in Southern African Higher Education. Scholarly Communication in Africa Program, Working Paper 2.

Trotter, H., Kell, C., Willmers, M., Gray, E. & King, T. (2014). *Seeking Impact and Visibility: Scholarly Communication in Southern Africa*. Cape Town: African Minds.

Van der Broek, T., Rijken, M. & van Oort, S. (2012). Towards open development data*. Open for Change*, 25.

Wardoyo, R. & Mahmud, N. (2013). Benefits and barriers of learning and using ICTs at Open University: A case study of Indonesian domestic workers in Singapore. Proceedings of the Sixth International Conference on Information and Communication Technologies and Develompent, New York, NY, USA, pp. 215-226.

Weller, M. (2013). The Battle for Open: A perspective. *Journal of Interactive Media in Education (JIME).* Retrieved September 25, 2014 from http://jime.open.ac.uk/article/view/2013-15/511

Zoellick, R. (2007). "An Inclusive & Sustainable Globalization" Remarks at the National Press Club, October 10, 2007. http://web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,,contentMDK:21504730~pagePK:34370~piPK:42770~theSitePK:4607,00.html