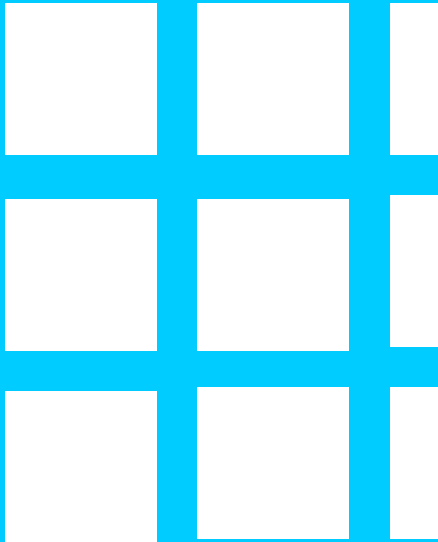




Intellectual Property Issues in ICT4D

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List of Acronyms

A2K	Access to Knowledge
BY-SA	Creative Commons' 'attribution – share alike' license
DALRO	South Africa's Dramatic, Artistic, and Literary Rights Organisation
DRM	digital rights management
EC	European Community
FLOSS	Free/Libre/Open Source Software
FOSS	Free and Open Source Software
GEM	Gender Evaluation Methodology
GNP	Gross National Product
GNU	General Public License
HIV	human immunodeficiency virus
HP	Hewlett-Packard
ICT4D	information and communication technology for development
ICTs	information and communication technologies
IDRC	International Development Research Centre
IFRRO	International Federation of Reproduction Rights Organisations
IP	intellectual property
IPR	intellectual property rights
IT	information technology
MIT	The Massachusetts Institute of Technology
NC	Creative Commons' 'non-commercial' license
NEPAD	New Partnership for African Development
OA	open access
OAI	Open Access Initiative
OAI-PMH	Open Access Initiative Protocol for Metadata Harvesting
PAN	PAN Asia Networking
PDF	Portable Document Format
RRO	reproduction rights organization / reprographic rights organization
TK	traditional knowledge
TM	traditional medicine
TEK	traditional environmental knowledge
TPM	technological protection measures
TRIPs	Agreement on Trade-Related Aspects of Intellectual Property Rights
UK	United Kingdom
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNHCR	United Nations High Commissioner for Refugees
US	United States
WCT	World Intellectual Property Organization Copyright Treaty
WIPO	World Intellectual Property Organization
WPPT	World Intellectual Property Organization Performers and Phonograms Treaty
WTO	World Trade Organization

1 Introduction

The term ‘intellectual property’ refers generally to a whole spectrum of law including copyright and neighbouring rights, patents, trademarks, industrial designs, and geographical indications. ‘Copyright’ refers specifically to the protection of original works such as literature, film, music, and visual art, while the term ‘patent’ refers to the protection of inventions, including products and processes. Copyright and patent law have been the forms of intellectual property most affected by the rise of information and communication technologies (ICTs), and the implementation of copyright in the digital realm has been particularly controversial. It is therefore on copyright and patent law that this review will focus, with the emphasis being on copyright.

Copyright	Original works (literature, film, music, visual art)
Patent	Inventions (machines, products, processes)
Trademark	Sign or symbol (business logos)
Industrial design	Aesthetic design (the design of a piece of furniture or other consumer product)
Geographical indication	Name or symbol on a product corresponding with the product’s geographical origin (Gruyère cheese)

Most introductions to and histories of patents and copyright tend to be ethnocentric and often teleological accounts that trace the origins of intellectual property to 17th and 18th century England. According to these accounts, patent and copyright systems developed to provide incentive or just reward to inventors and creators for their work, while also serving the larger public interest by encouraging the dissemination of works and inventions. These systems developed nationally before various international treaties were established in the 19th century to internationalize intellectual property protection among mainly Western countries. Such accounts and histories rarely discuss norms and philosophies regarding treatment of works and inventions in countries of the South or the historical and political relationship of Southern countries to the international intellectual property system developed by the West.

Intellectual property has long been an issue of concern to developing countries. As early as the 1960s, when many developing countries entered into the international

intellectual property system for the first time as independent nations, issues were raised by developing countries about both the challenges of implementing international intellectual property systems and the appropriateness of contemporary international intellectual property standards to developing countries.

The rise of ICTs in the 1980s and 1990s required intellectual property systems to adapt. The developed-world response to ICTs has broadly been to expand and increase the intellectual property protections offered in the digital realm. According to teleological accounts, this process of adaptation of existing legal systems represents the “modernization” of intellectual property law. Countries of the South have, in many cases, followed this trend, implementing many of the provisions in international treaties meant to deal with digital technologies. However, there is some dispute as to whether the expansion of intellectual property protection by developing countries is wise, and the question of what intellectual property policies are most appropriate to developing countries is highly contentious.

Many experts argue that that the implementation of intellectual property policies in developing countries encourages economic growth by providing incentives to authors and inventors for creativity and innovation, encouraging research and development, and providing security to those who invest in intellectual property products and related industries, including in the area of ICTs. However, some intellectual property policies may threaten to impede the benefits available to developing countries through ICTs. Some intellectual property policies in the digital realm can make digital content inaccessible to developing countries, hinder the adaptation of software to local needs, allow the overrideability of public interest provisions in copyright law, drain revenues from developing countries to developed countries, and allow the abuse of intellectual property rights in software and other technologies. Many argue that it is necessary to adjust or “balance” the intellectual property system so as to continue to benefit from the incentives it provides while avoiding many of the serious problems it can pose, especially to developing countries. Others, as I will discuss, argue that “tinkering” with the intellectual property system is not enough to alter its fundamental and systemic biases that benefit developed countries and leave developing countries in a position of disadvantage.

The International Development Research Centre (IDRC)’s Information and Communication Technology for Development (ICT4D) program branch, established in 1994, has been engaged with intellectual property issues in ICT4D for some time. Specifically, the branch’s *Acacia* and *PAN Asia Networking* program initiatives, focussing on ICT4D in Africa and Asia respectively, have funded projects related to intellectual property and development since 2002. (Note: ‘ICT4D’ refers both to a general concept – the use of information and communication technology in development – and to IDRC’s program branch, named ‘ICT4D’. Throughout this report, use of the term ‘ICT4D’ refers to the general concept rather than the program branch unless otherwise indicated.)

The *Acacia* and *PAN Asia* programs have identified a number of intellectual property issues that they wish to focus on in their programming – an ICT4D intellectual property niche. *PAN Asia* has chosen to focus on access to knowledge and the problems created when that access is restricted by intellectual property regulation and intellectual property-supported technologies. Policy areas identified for focus include digital rights management technologies, the role of intellectual property in potentially stifling software innovation and e-commerce; the relationship of intellectual property policy to the public domain; and emerging intellectual property business models.¹ *Acacia* has also cited new economic/business models, such as Creative Commons and Open Source, as an area of interest. *Acacia* aims to develop a research network focusing on the growth of peer-to-peer networks, Open Source and Creative Commons, the protection of indigenous knowledge, the application of intellectual property to software and databases, digital rights management, open access to academic publishing and digital libraries, and the impact of intellectual property policies on the public domain and innovation.² In these areas, IDRC's ICT4D branch has identified a niche in the field of intellectual property and development, focused on open access to knowledge.

Other program areas at IDRC have also been involved in intellectual property issues. The Environment and Natural Resources Management and the Innovation, Policy and Science program areas have been involved in issues of intellectual property in genetic and biological resources since the mid-nineties, as well as in issues related to traditional knowledge. The Social and Economic Policy program area has also been involved in issues related to intellectual property and trade since the mid-nineties. However, these program areas tend to leave ICT-related areas for IDRC's ICT4D program branch.³

In this report I will identify and review issues of intellectual property and development that relate specifically to ICTs. The issues I review will include those already identified as a part of ICT4D's niche, followed by some issues not currently part of the ICT4D niche.

¹ International Development Research Centre, *Pan Asia Networking Prospectus 2006-2011* (Ottawa: International Development Research Centre, 2006), 13, 15-16, http://www.idrc.ca/uploads/user-S/11700792731prospectus_final.pdf (accessed July 23, 2007).

² International Development Research Centre, *Acacia Prospectus 2006-2011* (Ottawa: International Development Research Centre, 2006), 14-15, http://www.idrc.ca/uploads/user-S/11830606381Acacia_Prospectus_2006-2011.doc (accessed July 23, 2007).

³ See, for example, International Development Research Centre, *Innovation, Technology and Society Program Initiative Prospectus 2006-2011* (Ottawa: International Development Research Centre, 2006), 17 (accessed July 23, 2007).

2 Open Access

1. Introduction and Intersection with ICT4D

A tremendous gap has been observed both between developed and developing countries' access to academic and scientific publication and between developed and developing countries' published research outputs. Chan, Kirsop and Arunachalam have referred to developing countries' lack of access to research literature as an "information famine", noting that:

researchers in these regions often have little or no access to the published research literature due to the high cost of journal subscriptions and inadequate and expensive distribution mechanisms. According to a recent survey conducted by the World Health Organization (WHO), in the 75 countries with an annual GNP per capita of less than US\$1,000, some 56 per cent of medical institutions had no subscriptions to journals over the previous five years; in countries with a GNP between US\$1,000 and US\$3,000, 34 per cent had no subscriptions and a further 34 per cent had an average of two subscriptions per year.⁴

King shows that there is also a tremendous discrepancy between developing and developed countries as represented in research literature:

The [United States, together with the EU, UK, Germany, Japan, France, Canada, Italy] produced about 84.5% of the top 1% most cited publications between 1993 and 2001. ... Moreover, although my analysis includes only 31 of the world's 193 countries, these produce 97.5% of the world's most cited papers.

The political implications of this last comparison are difficult to exaggerate. South Africa, at 29th place in my rank ordering, is the only African country

⁴ Barbara Kirsop and Subbiah Arunachalam, *Open Access Archiving: The Fast Track to Building Research Capacity in Developing Countries* (London: Science and Development Network, 2005), 2, http://www.scidev.net/open_access/files/Open%20Access%20Archiving.pdf (accessed July 3, 2007).

on the list. The Islamic countries are only represented by Iran at 30th, despite the high GDP of many of them and the prominence of some individuals, such as Nobel prizewinners Abdus Salam (physics, 1979) and Ahmed Zewail (chemistry, 1999).⁵

Barriers to publication in the developing world include the high costs of printing and distributing journals in the developing world, as well as difficulties having works accepted in the journals of developing countries due to prejudice. Some scholars from developing countries have found it easier to publish their work while working in the United States, but have found difficulty having their work published once they return home.⁶ This barrier presents a special problem for some academics whose universities place an emphasis on publication on foreign journals for job promotions.⁷

As a way of increasing the accessibility of academic literature to developing countries, the Commission on Intellectual Property Rights recommended expansion of free open-access initiatives for academic journals.⁸ Open access has also been proposed as a way of decreasing:

- the North to South knowledge gap: increasing access to developed country publications by developing countries;
- the South to North knowledge gap: increasing the ability of developing countries researchers to get their work published in ways that are accessible to developed countries; and
- the South to South knowledge gap: assisting developing countries in sharing their research with neighbouring countries facing similar problems.⁹

Open access was defined at a 2001 meeting convened by the Open Society Institute to launch the Budapest Open Access Initiative in 2001:

By "open access" to this literature, we mean its free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited.¹⁰

⁵ David A. King, "The Scientific Impact of Nations," *Nature* 430, no. 6997 (July 15, 2004), 314.

⁶ Christine Deschamps and others, "Round Table: Open Access Issues for Developing Countries," *Information Services and Use* 23, no. 2/3 (2003), 151.

⁷ Esharenana E. Adomi and Chinedum Mordi, "Publication in Foreign Journals and Promotion of Academics in Nigeria," *Learned Publishing* 16, no. 4 (2003), 259-263.

⁸ Commission on Intellectual Property Rights, *Integrating Intellectual Property Rights and Development Policy: Report of the Commission on Intellectual Property Rights* (London: Commission on Intellectual Property Rights, 2002), 102, http://www.iprcommission.org/graphic/documents/final_report.htm (accessed May 22, 2007).

⁹ Deschamps and others, *Round Table: Open Access Issues for Developing Countries*, 150-152

¹⁰ <http://www.soros.org/openaccess/read.shtml> (accessed July 5, 2007)

Open access takes two primary forms: open access journals and self archiving, where authors deposit their work in online archives made available by their academic institution or other organizations. Authors can archive not only published papers but also earlier versions of their published works.

One of the reasons open access is seen as beneficial to developing countries is its low cost and immediate benefit:

The academic communities in poorer countries can take advantage of servers anywhere in the world offering OAI [open access initiative] services, without the need to set up their own independent servers or maintain them. Establishing partners, either S/N [south-north] or S/S [south-south], can minimise infrastructure costs, share expertise and readily become part of the international interoperable effort.¹¹

Various studies suggest that the transition to open access is well worth the effort – that open access publications garner more citations than do offline articles.¹²

A number of studies have been carried out on the state of open access in developing countries. Gosch and Kumar Das give an overview of the state of open access publishing in India, where open access initiatives are relatively well-entrenched, in their article "Open Access and Institutional Repositories – A Developing Country Perspective: A Case Study of India."¹⁴ Fernandez also discusses the state of open access publishing in India in her article "Open Access Initiatives in India – an Evaluation."¹⁵ Wang and Su review the state of Open Access in China, where they say open access is still a relatively new concept, and DeBeer and Möller give an extensive discussion of the state of open access in South Africa in their masters theses.¹⁶

"Several scientific institutes in India ... practice OA [open access] publishing. The Indian Academy of Sciences publishes 11 journals and they are all freely accessible on the web (www.ias.ac.in/journals.html). The Indian National Science Academy has recently made available several of its publication online for free (www.insa.ac.in/html/home.asp). Medknow Publications (www.medknow.com), a small but fast growing publisher based in Mumbai, is providing electronic publishing services to a number of medical journals and partnering with Bioline International to make the fulltext of these journals available on an OA basis."¹³

¹¹ Leslie Chan and Barbara Kirsop, "E-LIS - Open Archiving Opportunities for Developing Countries : Towards Equitable Distribution of Global Knowledge," *Ariadne* 30 (2001), <http://eprints.rclis.org/archive/00002609/> (accessed May 16, 2007).

¹² See Kirsop and Arunachalam, *Open Access Archiving: The Fast Track to Building Research Capacity in Developing Countries*, 5

¹³ Leslie Chan and Sely Costa, "Participation in the Global Knowledge Commons: Challenges and Opportunities for Research Dissemination in Developing Countries," *New Library World* 106, no. 3/4 (2005), 141-163, https://tspace.library.utoronto.ca/bitstream/1807/4255/1/GlobalKnowledgeCommons_NLW.pdf (accessed July 5, 2007).

¹⁴ S. B. Ghosh and Anup Kumar Das, "Open Access and Institutional Repositories – a Developing Country Perspective: A Case Study of India" (World Library And Information Congress: 72nd IFLA General Conference And Council 20-24 August 2006, Seoul, Korea, IFLA, May-2006, <http://drtc.isibang.ac.in:8080/handle/1849/272>).

¹⁵ Leila Fernandez, "Open Access Initiatives in India - an Evaluation," *Partnership: The Canadian Journal of Library & Information Practice & Research* 1, no. 1 (2006), 1-22.

¹⁶ Xuemao Wang and Chang Su, "Open Access-Philosophy, Policy, and Practice: A Comparative Study," *Chinese Librarianship*, no. 23 (June, 2007), 10. This article is also available at http://www.ifla.org/IV/ifla72/papers/157-Wang_Su-en.pdf (accessed July 5, 2007); Allison Möller, "The Case for Open Access Publishing, with Special Reference to Open Access Journals and their Prospects in South Africa" (Master's thesis, Department of Library and Information Science, University of the Western Cape), <http://eprints.rclis.org/archive/00005815/01/MollerThesis.pdf> (accessed July 6, 2007). See also Chris Armstrong and Heather Ford,

The open access initiative has led to open access educational courses, commonly referred to as open courseware (OCW). Such initiatives include the Massachusetts Institute of Technology (MIT)'s Open Courseware, and similar initiatives at the United Kingdom Open University.¹⁷ The Indira Gandhi National Open University also provides a national digital repository of open courseware, and India's National Council of Educational Research and Training (NCERT) is working towards making school textbooks available freely on the Internet.¹⁸

There has been a special emphasis on the need to make publicly funded research available on an open access basis. Related recommendations have been made at high levels both to the United Kingdom House of Commons Committee on Science and Technology and to the United States House of Representatives Appropriations Committee.¹⁹ IDRC makes much of its research available in the open access IDRC Digital Library (<http://idl-bnc.idrc.ca/dspace/>).

There has also been a special emphasis on the need for common standards for open access databases so that such databases can be indexed by various search engines such as Google Scholar²⁰ and so that database metadata will be compatible with other applications, such as bibliographic software. This need has led to the Open Archive Initiative (OAI), which defines a common protocol (the OAI Protocol for Metadata Harvesting (OAI-PMH)) for open access archives.²¹

2. Regional Considerations

Some open access regimes have been put in place in both the African and Asia-Pacific regions, but use of open access appears to be more widespread in the Asia-Pacific region. According to the Registry of Open Access Repositories (www.roar.eprints.org) there are 110 registered open access archives in the Asia-Pacific region: 36 in Japan, 33 in Australia, 24 in India, 9 in China, 2 in Singapore, and 1 each in South Korea, Malaysia, Hong Kong, Taiwan, Pakistan, and the Philippines. There are 11 registered in Africa: 8 in South Africa, 2 in Egypt, and 1 in Namibia. By comparison, there are 215 registered in the United States, 102 in the United Kingdom, and 40 in Canada.²²

3. Gender Considerations

Rowlands, Nichals and Huntington have found that women's and men's attitudes and practices differ towards open access publishing. In a survey of authors from 97 countries that had published in a peer-reviewed journal within the past 18 months they showed that women were slightly less aware of open access publishing than men, were

"Africa and the Digital Information Commons: An Overview," *The South-African Journal of Information and Communication* 7 (Special Issue on Intellectual Property Rights and Creating an African Digital Information Commons, 2006), 4-21, <http://www.researchchictafrica.net/images/upload/004-21-SAJIC01.pdf> (accessed June 14, 2007).

¹⁷ Ghosh and Das, *Open Access and Institutional Repositories – a Developing Country Perspective: A Case Study of India*, 4

¹⁸ *ibid.*

¹⁹ Chan and Costa, *Participation in the Global Knowledge Commons: Challenges and Opportunities for Research Dissemination in Developing Countries*, 154

²⁰ Google Scholar, at www.scholar.google.com, is a search engine for academic books and articles.

²¹ Kirsop and Arunachalam, *Open Access Archiving: The Fast Track to Building Research Capacity in Developing Countries*, 3

²² <http://roar.eprints.org/index.php?action=browse> (accessed July 6, 2007)

less likely than men to make their research available on their home page or departmental web site, and that fewer women than men had made their work available in an institutional repository. They also showed that the price of the journal to the reader was more important to women than to men when deciding where to publish.²³ Their research could be well complimented by research investigating the reasons behind these differences.

4. Issues and Problems

There are numerous barriers to the adoption of the open access model in developing countries. These include its relative newness as a concept, concerns about publishers' willingness to allow authors to participate in such projects, limited financial resources, concerns about the sustainability of open access operations that depend on volunteer resources, Internet accessibility, concerns about potential unauthorized uses of material published online, and language concerns.²⁴

Many authors in developing countries are unaware of open access publishing. Some believe that posting a version of an article submitted to a journal is illegal or not allowed.²⁵ For some who are unaware of the open access concept and open access journals in general, open access is equated with "vanity publishing" and open access publications are therefore not highly regarded by university promotion committees.²⁶

Part of the reason open access journals are sometimes viewed as "vanity presses" is that some open access journals operate on an 'author pays' model. Under this model authors are charged 'page charges' which average about \$750 US per article.²⁷ Because developing country researchers often receive little or no research funding, many researchers opt to publish in journals that do not have page charges.²⁸ While publications sometimes offer to waive page charges upon the request of the author in situations of need, this can be an embarrassing request for some researchers to make.²⁹

Funding open access journals and archives is also a problem in developing countries. Papin-Ramcharan and Dawe contend that some authors have under-played the costs that can be entailed in setting up open access repositories, either failing to mention or glossing over the cost of server space, staff time, maintenance, and resources required to set up and maintain such initiatives. These costs, they say, are higher for smaller

²³ Ian Rowlands, Dave Nicholas and Paul Huntington, *Scholarly Communication in the Digital Environment: What do Authors Want? Findings of an International Survey of Author Opinion: Project Report* (London: Centre for Information Behaviour and the Evaluation of Research, [2004]), [http://www.publishers.org.uk/paweb/paweb.nsf/0/b93e724b16fbc7f880256ea9003b77ae/\\$FILE/ciber-pa-report.pdf](http://www.publishers.org.uk/paweb/paweb.nsf/0/b93e724b16fbc7f880256ea9003b77ae/$FILE/ciber-pa-report.pdf) (accessed July 6, 2007).

²⁴ Wang and Su, *Open Access-Philosophy, Policy, and Practice: A Comparative Study*, 16 and 19

²⁵ Edda Tandi Lwoga and Wanyenda Chilimo, "Open Access and Open Source: Considerations for Agricultural Academic Libraries in Promoting Collaboration and Sharing of Information and Knowledge," *Quarterly Bulletin of the International Association of Agricultural Information Specialists* 51, no. 3/4 (2006), 7. A draft version of this paper is available at <http://www.livelihoods.org/post/Docs/IAALD/007Lwoga.doc> (accessed July 5, 2007).

²⁶ Jennifer Papin-Ramcharan and Richard A. Dawe, "The Other Side of the Coin for Open Access Publishing - A Developing Country View," *International Journal of Libraries & Information Services* 56, no. 1 (March, 2006), 20.

²⁷ Donald W. King, "Should Commercial Publishers be Included in the Model for Open Access through Author Payment?" *D-Lib Magazine* 10, no. 6 (2004), <http://www.dlib.org/dlib/june04/king/06king.html> (accessed July 6, 2007).

²⁸ Papin-Ramcharan and Dawe, *The Other Side of the Coin for Open Access Publishing - A Developing Country View*, 19, 23

²⁹ *ibid.*, 24

institutions that are already under-resourced and who do not have as highly trained staff nor as robust infrastructure as larger institutions might.³⁰ These issues also affect the ongoing viability of open access projects.

Internet access is probably one of the largest barriers to the use of open access models in developing countries. This is especially true, note Papin-Ramcharan and Dawe, because the standard format for open access articles is PDF format, which requires a relatively fast Internet connection. Download speeds can be very slow for PDF files, especially during peak periods.³¹

According to Chan and Costa, many researchers in developing countries fear that their research, if published online, could be exploited by researchers in developing countries without compensation:

In developing countries, many researchers and administrators also express concern that the intellectual properties from poor countries will be exploited by the rich countries without proper compensation, further adding to the reluctance of developing countries to participate in the OA movement. This fear is perhaps justifiable given the history of exploitation of native knowledge by western science (Kaniki and Mphahlele, 2002). This apprehension also leads to a low participation in the culture of sharing, which is at the heart of the OA movement. There is a clear need for better understanding of the nature and benefits of OA for all researchers in order to raise the level of participation.³²

Finally, language barriers can limit the accessibility of open access archives and publications. Wang and Su note that this is a consideration in China, since many disciplines operate primarily in Chinese. There is demand, therefore, for Chinese language open access publications and repositories.³³

Some authors note that policy leadership is necessary on the part of governments and leading institutions in making open access visible and acceptable.³⁴ This policy leadership would encourage authors, who might otherwise be slow to participate, to take up the open access model. Chan and Costa note that high level leadership has begun to be exerted in both the United Kingdom and in the United States.³⁵ The viability of a multilateral treaty on open access to basic science and technology proposed by scholars is also under discussion.³⁶

³⁰ *ibid.*, 18, 21

³¹ *ibid.*, 21-22

³² Chan and Costa, *Participation in the Global Knowledge Commons: Challenges and Opportunities for Research Dissemination in Developing Countries*, 153

³³ Wang and Su, *Open Access-Philosophy, Policy, and Practice: A Comparative Study*, 13

³⁴ *ibid.*, 10

³⁵ Chan and Costa, *Participation in the Global Knowledge Commons: Challenges and Opportunities for Research Dissemination in Developing Countries*, 154-155

³⁶ John H. Barton and Keith E. Maskus, "Economic Perspectives on a Multilateral Agreement on Open Access to Basic Science and Technology," *SCRIPT-Ed* 1, no. 3 (Sept. 2004, 2004), 369-387, <http://www.law.ed.ac.uk/ahrc/script-ed/issue3/barton-maskus.pdf> (accessed May 16, 2007).

5. Recommended Reading

- Kirsop, Barbara and Subbiah Arunachalam. *Open Access Archiving: The Fast Track to Building Research Capacity in Developing Countries* Science and Development Network, 2005, http://www.scidev.net/open_access/files/Open%20Access%20Archiving.pdf (accessed July 3, 2007).
- Papin-Ramcharan, Jennifer and Richard A. Dawe. "The Other Side of the Coin for Open Access Publishing - A Developing Country View." *International Journal of Libraries & Information Services* 56, no. 1 (March, 2006): 16-27.

3 Creative Commons

1. Introduction and Intersection with ICT4D

Creative Commons licensing, like open access, has been proposed as a way of making content free for use in developing countries. Several projects funded by IDRC have promoted the use of Creative Commons licenses in developing countries. Most prominently, in 2005 IDRC funded a project called *Commons-sense: Copyright Alternatives, Education and Innovation in Africa* to study and raise awareness about the potential use of alternative licensing in educational materials in Africa.³⁷

Creative Commons is an American charitable organization with offices in San Francisco, Johannesburg, and Berlin. In 2002 Creative Commons launched a set of copyright licenses designed for use with websites, photos, music, literature, video and other works. These licenses, available without charge, can be used by copyright holders to license to the public certain free uses of their works.³⁸ Licenses are modular, allowing copyright holders to select and combine various conditions they wish to place on the use of their works. Possible conditions included:

- **“Attribution.** You let others copy, distribute, display, and perform your copyrighted work — and derivative works based upon it — but only if they give credit the way you request.”
- **“Noncommercial.** You let others copy, distribute, display, and perform your work — and derivative works based upon it — but for noncommercial purposes only.”
- **“No Derivative Works.** You let others copy, distribute, display, and perform only verbatim copies of your work, not derivative works based upon it.”
- **“Share Alike.** You allow others to distribute derivative works only under a license identical to the license that governs your work....(Note: A license cannot feature

³⁷ IDRC Project no. 102895, *Commons-sense: Copyright Alternatives, Education and Innovation in Africa* http://www.idrc.ca/en/ev-89280-201_102895-1-IDRC_ADM_INFO.html (accessed August 29, 2007)

³⁸ <http://wiki.creativecommons.org/History> (accessed August 7, 2007)

both the Share Alike and No Derivative Works options. The Share Alike requirement applies only to derivative works.)”³⁹

Machine-readable versions of the licenses are provided for use with digital works, allowing the licenses to be identified by search engines. A ‘Commons Deed’, or a plain-language version of the license, as well as a ‘lawyer-readable’ version, are also provided. Creative Commons licenses have been adapted to various jurisdictions internationally, including African and Asian countries such as South Africa, China, India, Malaysia, and Taiwan. Content licensed under Creative Commons licenses is sometimes referred to as ‘open content’.

Creative Commons licenses have been seen as a way of making content more accessible to users in developing countries. Towards this end, Creative Commons has also created a specialized ‘developing nations’ license that allows copyright holders to allow free uses of their work in developing nations while reserving rights in developed countries.⁴⁰ Gauguier and Douine believe that “by creating a public domain of creative works, creative commons offered developing countries significant raw material with which to build local content.”⁴¹ They argue that both the main Creative Commons licenses and the ‘developing nations’ licenses are “interesting initiatives to reduce the digital divide by facilitating free access to a huge stock of knowledge.”⁴²

Other organizations have also undertaken projects to make works available to developing countries and others. As mentioned above (p. 8), particular emphasis has been placed on making courseware freely available under open access initiatives. Such initiatives also make use of Creative Commons licensing to make the course materials freely available for others to use.

Many of IDRC’s *PAN Asia* and *Acacia* research outputs are now made available under Creative Commons licenses.

2. Regional Considerations

Creative Commons licenses were first created in developed countries and were primarily targeted for use in developed countries. Thus far, they have been ported to five Asian countries and to only one African country. There has been very little study of the use of such licenses in developing countries, their actual development impact, and their cultural fit in developing countries, although some projects aimed at filling this gap are likely to emerge in the near future, perhaps with funding from IDRC.

³⁹ <http://creativecommons.org/about/licenses/> (accessed August 7, 2007)

⁴⁰ <http://creativecommons.org/license/devnations> (accessed August 7, 2007)

⁴¹ Jean-Jacques Gauguier and Rémi Douine, “Local Software and Local Content Production Challenge in Developing Countries: What can be Learned from Open Source and Creative Commons Paradigms?” *Communications and Strategies* November, no. 58 (2005), 18, <http://www.crea.dauphine.fr/publication/CS%20-%20DOUINE%20-%20GAUGUIER%20-%20TUNIS%20-%20FINAL.pdf> (accessed August 1, 2007).

⁴² *ibid.*, 19

3. Gender Considerations

It appears that there has been no gender assessment of Creative Commons licensing. However, it would be useful to understand the gender dimensions of the use of, perceptions of, and usefulness of Creative Commons licenses.

4. Issues and Problems

Although some authors express optimism about the possible uses of Creative Commons licenses to reduce the digital divide, others have expressed reservations about Creative Commons and its strategy. Derek Keats, for example, objects to the use of the 'non-commercial' (NC) licensing clause in licensing educational content. He argues that this clause is used in 74% of online Creative Commons-licensed educational content, and that the use of this clause is unnecessarily restrictive. MIT OpenCourseWare, for example, is licensed under a non-commercial restriction. This, Keats observes, prevents others from enhancing the courseware for commercial use, even if such enhancements are also licensed under Creative Commons under terms that would make them freely available for use in the original course. (See inset.)

“One consequence of the NC [non-commercial] licence is that educational content that has a NC restriction cannot be enhanced by commercial organisations, which typically have more creative resources at their disposal than educational institutions. Let us imagine that I produce a useful drawing of a cell being infected by the human immunodeficiency virus (HIV), and a commercial training company, with many more resources than I have access to, decides to use my materials in a corporate training setting (a commercial use). In order to improve the materials, they create an interactive animation of the cell infection process. A BY-SA [attribution-share alike] licence on my original drawing would mean that the commercial firm’s enhancement must be made freely available, with the result that in my class I would have a much improved learning resource for my students. An NC [non-commercial] restriction would prevent this benefit from ever arising.”⁴³

Various problems have also been raised with the Creative Commons 'developing nations' licenses, which are now felt to be, for the large part, untenable.

There are questions around whether the license is intended for use by publishers or individual authors, what implications it might have for relationships between publishers and authors, whether materials created in developing countries under the license might leak back into developed countries, whether publishers could afford to give up the sales normally achieved in developing countries, and whether such licenses might undermine more traditional publishing models.⁴⁴

In a broader critique, Niva Elkin-Koren outlines a number of general problems with Creative Commons and their strategy. First, because Creative Commons has become a popular movement that calls for the general public, rather than a specialized audience of scholars or software programmers, to make use of its licenses, it attracts many

⁴³ Derek Keats, "Implications of the NonCommercial (NC) Restriction for Educational Content Licensed Under a Creative Commons (Cc) Licence," *The South-African Journal of Information and Communication* 7, no. Special Issue on Intellectual Property Rights and Creating an African Digital Information Commons (2006), 74, <http://www.researchictafrica.net/images/upload/074-81-SAJIC06.pdf> (accessed June 14, 2007).

⁴⁴ Frances Pinter, *Licensing and Development: Aide Memoire - London Meeting*, 2006).

distinct players with many different goals, each acting in self-interest. This diversity, along with the diversity of licenses offered by Creative Commons, means that the Creative Commons political project, and its definition of 'the commons' is unclear:

The lack of a clear definition of *the commons* reflects a profound disagreement regarding the meaning of the public domain. Does a commons include works in which copyright has expired or only works which have ended their productive life? Does it cover unprotected aspects of copyrighted works or also any type of exploitation of works which falls outside the scope of copyright? Is it free of any legal restraints or simply accessible free of charge?⁴⁵

As a result, "Creative Commons's ideology lacks a comprehensive vision of the information society and a clear definition of creativity and what makes it possible," Elkin-Koren argues.⁴⁶

Second, Elkin-Koren notes that Creative Commons is completely dependent on such legal concepts as property and contracts. She worries that this may further encourage the use of the commodity and exchange metaphors with regard to even the most personal works:

Once we realize that everything we write, draw, or play could be licensed we may start conceiving our own self-expressions as commodities. Our email correspondence, a picture we took of a newsworthy event, and commentary we posted online are all subject to exclusive rights. They all may be viewed as separate, identifiable pieces which are subject to exclusion. We may think of our writings as economic assets, and view our own expression as chips to be traded, rather than ideas to be shared.⁴⁷

Further, she argues that this line of thinking may increase the power of copyright:

By reducing the cost of licensing, Creative Commons makes licensing more accessible to individual users, thereby strengthening the hold of copyright in our everyday life. Now that individual authors are not only aware of the proprietary regime but are also armed with an efficient mechanism to execute their intellectual property rights, they may use it to set limits on the exploitation of their works.⁴⁸

To illustrate this potential, Elkin-Koren notes the tendency of users to utilize more restrictive Creative Commons licenses rather than those that allow completely unrestricted use.⁴⁹

⁴⁵ Niva Elkin-Koren, "Creative Commons: A Skeptical View of a Worthy Pursuit" In *The Future of the Public Domain*, eds. P. Bernt Hugenholtz and Lucie Guibault (The Hague: Kluwer Law International, 2006), 9, <http://ssrn.com/abstract=885466> (accessed June 7, 2007).

⁴⁶ *ibid.*, 8-10

⁴⁷ *ibid.*, 12

⁴⁸ *ibid.*, 13

⁴⁹ *ibid.*, 14

Third, Elkin-Koren notes that Creative Commons licenses are standard form contracts like any other, and that with the legal enforceability of Creative Commons licenses comes the legal enforceability of other more restrictive standard form contracts. (For a discussion of problems raised for developing countries by standard form contracts that restrict otherwise legal uses of works, see *Chapter 5, section 5.1, Contractual Overrideability and Click/Shrink-Wrap Agreements*.) The more general problem with standard-form contracts, Elkin-Koren argues, is that “those affected by the rights and duties are not represented in the transactions pertaining to their interests.”⁵⁰

Finally, although Creative Commons identifies default copyright as a problem that restricts the use of works, Elkin-Koren observes that it does not have any plan for actual copyright reform; rather, it simply offers licenses that seek, through private initiative, to lessen the restrictions imposed through default copyright law. In sum, and in short, Elkin-Koren argues that “in the long run, creating an alternative to copyright would require a copyright reform.”⁵¹

Berry and Moss outline a more radical approach. They reject Creative Commons’ reliance on lawyers and legal solutions, offering instead two “poetic licenses” that purport to step outside the legal system, rejecting all legal jurisdiction and the privatization of knowledge.⁵²

5. Recommended Reading

- Elkin-Koren, Niva. "Creative Commons: A Skeptical View of a Worthy Pursuit." In *The Future of the Public Domain*, edited by P. Bernt Hugenholtz and Lucie Guibault. The Hague: Kluwer Law International, 2006, Draft version available at: <http://ssrn.com/abstract=885466> (accessed June 7, 2007).

⁵⁰ *ibid.*, 16

⁵¹ *ibid.*, 21

⁵² David M. Berry and Giles Moss, "The Politics of the Libre Commons," *First Monday*, no. 9 (September, 2006), http://www.firstmonday.org/issues/issue11_9/berry/index.html (accessed August 1, 2007).

1. Introduction and Intersection with ICT4D

The distinction between proprietary software and free and open source software (FOSS) lies in the way the software and its source code are disseminated. Software's source code is written in high-level languages, such as C or C++, which resemble in many ways basic English and math. This source code is then compiled into machine code, which is made up of hexadecimal numbers and can be sensibly read by computers only. Proprietary software is distributed in machine code; the source code is kept secret. FOSS software developers, however, make the source code freely available for anyone to distribute, copy, and modify. This makes modifying a computer program, making a new version of it, or using bits of it in other programs, much easier.

In fact, the term 'free and open source software' encapsulates a number of different philosophies of software development and licensing. The first, 'free software', a movement led by Richard Stallman (1953 -), operates on the philosophy that the source code of software should be made freely available to be distributed, copied, and modified. As Christopher May notes, "The free software approach is a politicised critique of software ownership based on its utility; software should not be owned because like language, it is foundational to the society that uses it."⁵³ Stallman's General Public License (GPL) therefore requires all follow-on programs to also be licensed under a GPL license. This prevents any proprietary software from being constructed using GPL software. For this reason the license is sometimes called "viral".⁵⁴ The second, 'open source software', views open source as a superior mode of software production rather than a political philosophy. Open source software licenses still require that source code be made available, but do not necessarily include the "viral" clause that prevents the use of open source code in proprietary software. The Open Source Initiative (OSI) has established an open source definition (OSD) as a guideline for open source licenses; these guidelines do not require the "viral" clause as a part of open source licenses.

⁵³ Christopher May, "Escaping the TRIPs' Trap: The Political Economy of Free and Open Source Software in Africa," *Political Studies* 54, no. 1 (2006), 132 (accessed 15/05/2007).

⁵⁴ David S. Evans and Bernard J. Reddy, "Government Preferences for Promoting Open-Source Software: A Solution in Search of a Problem," *Michigan Telecommunications and Technology Law Review* 9, no. 2 (2003), 323, <http://www.mttlr.org/volnline/evans.pdf> (accessed June 7, 2007).

A number of writers also see FOSS as offering particular advantages to developing countries. Christopher May cites local adaptability, opportunities for developing knowledge and skills, and cost savings as the three most prominent advantages of FOSS to developing countries.⁵⁵ Others have also noted that FOSS can give developing countries greater security and independence from Western-based companies.⁵⁶

1.1. Software localization

Computing in non-Western languages poses a number of problems. The IDRC-funded PAN Localization project observed that

Chinese/Japanese/Korean languages are ideographic/pictographic languages, requiring complex input methods to type thousands of unique input symbols. Thai, Lao and Khmer are written without space between words, requiring very complicated line-breaking algorithms. Arabic script, especially Nastaleeq (used to write Urdu and Persian) is highly cursive and context dependent, where a single letter may have up to 25 different shapes depending on which other characters precede and follow it. Characters in Devanagari script (used for writing Hindi and Nepali) do not have a baseline but “hang” from a “clothes-line”. Tibetan, Dzongkha, Lao and Khmer may stack up characters over and under base characters up to five levels.⁵⁷

In sum, project leaders note, “The current technological framework, which was originally designed to cater to western languages and their needs, does not completely support many Asian languages. Similar observations could be made for many African languages. This framework needs to be developed and improved.”⁵⁸ Problems extend not only to the fonts and languages used in computer programs, but also to keyboard layouts, methods of ordering words and letters (equivalent to, in Western alphabets, alphabetization), date, time and number formats, currencies, and non-Western calendars.⁵⁹

The ability of developing countries to design ICTs according to local needs is as important as physical and financial access to ICTs. As Gauguier and Douine observe:

The inadequacy of human-to-machine interfaces both at an hardware and software level can constitute an impediment to access to ICTs. It constitutes a *design access* issue. In order to reduce the digital divide

⁵⁵ May, *Escaping the TRIPs' Trap: The Political Economy of Free and Open Source Software in Africa*, 123

⁵⁶ Sanjiva Weerawarana and Jivaka Weeratunga, *Open Source in Developing Countries* (Stockholm: Swedish International Development Authority, 2004), <http://www.schoolnetafrika.net/fileadmin/resources/opensource.pdf> (accessed August 22, 2007).

⁵⁷ PAN Localization, *PAN Localization Phase 1 (Feb. 2004 – Apr. 2007) Final Report* (Lahore, Pakistan: Center for Research in Urdu Language Processing, National University of Computer and Emerging Sciences, 2007), 7.

⁵⁸ *ibid.*, 7

⁵⁹ Sarmad Hussain, Nadir Durrani and Sana Gul, *Survey of Language Computing in Asia 2005* (Lahore, Pakistan: Center for Research in Urdu Language Processing, National University of Computer and Emerging Sciences, 2005), 3-8, <http://www.pan10n.net/english/outputs/Survey/Survey.pdf> (accessed August 21, 2007).

for a targeted population, policymakers need to support the production of tailored human-to-machine interfaces. ... In developing countries this issue is critical. Firstly, at a hardware level, western technology tools and devices cannot stand physical constraints of these countries (lack of electricity supply, heat, humidity....). Secondly, at a software level, the cognitive architecture and functionalities of western human-to-machine interfaces often do not satisfy the needs of users in developing countries.⁶⁰

The ability to produce locally relevant and accessible content is just as important:

The *content access* issue is related to the fact that a potential user of ICTs in a developing country may not find any interest in the content provided by information and communication technology. This can either be because this content is not in his/her language but also because this content is not relevant to his/her needs.⁶¹

In efforts to help bridge the digital divide, IDRC is involved in projects that promote the production and adaptation of software that operates in local languages, termed 'software localization' – often making use of open source software. Projects include *PAN Asia's* 'PAN Localization' projects and *Acacia's* 'Pan Africa Localization Project'.⁶²

There has been a concern that intellectual property might impede some localization efforts. Computer software came under the protection of copyright during the 1980s.⁶³ Under the *WIPO Copyright Treaty* and *TRIPs*, computer programs must be protected by national copyright legislation.⁶⁴ However, the Commission on Intellectual Property Rights has expressed concern that the protection of software source code might prevent products from being adapted to local needs. As such, it recommended that developing countries consider low-cost and open-source software in their software procurement processes.⁶⁵

The use of FOSS is often pointed to as a way of encouraging software localization. Alan Story argues that the accessibility of the source code in open source software “not only creates the potential for a “spin off” IT sector to grow in developing and least developed countries, but also allows users and developers to create their own software

⁶⁰ Gauguier and Douine, *Local Software and Local Content Production Challenge in Developing Countries: What can be Learned from Open Source and Creative Commons Paradigms?*, 107-127

⁶¹ *ibid.*

⁶² IDRC project no. 103669, *PAN Localization Phase II: Building Local Language Computing Capacity in Asia*, http://www.idrc.ca/en/ev-107488-201-1-DO_TOPIC.html (accessed August 24, 2007); IDRC project no. 102933, *PAN Africa Localization (Enhancing Capacities for Localization of Arabic & African Languages)*, http://www.idrc.ca/fr/ev-89281-201_102933-1-IDRC_ADM_INFO.html (accessed August 24, 2007); and IDRC project no. 103892, *Localization Blitz : Toward a Pan African Network of Localizers*.

⁶³ Alan Story, *Study on Intellectual Property Rights, the Internet, and Copyright*, 19, http://www.iprcommission.org/papers/pdfs/study_papers/sp5_story_study.pdf (accessed June 18, 2007).

⁶⁴ The TRIPs agreement provides transitional periods for developing and least-developed countries, while the WCT does not. *ibid.*, 19

⁶⁵ Commission on Intellectual Property Rights, *Integrating Intellectual Property Rights and Development Policy: Report of the Commission on Intellectual Property Rights*, 105

tailored to their own needs and their own national and regional languages.”⁶⁶ Miguel de Icaza arreers:

Countries with developing economies can now avoid depending on proprietary software: they can keep the money they spent on proprietary software to themselves, and use it to either develop themselves, or they can use that money to produce free software that will solve their problems (and hopefully other countries problems). ...Raw materials are extremely cheap (and in some cases it took nature a few million years to produce). For example, a barrel of petrol costs about \$25 these days, and a copy of Microsoft Office and Microsoft Windows 2000 costs around \$700. Which means that for each copy of Office+Windows 2000 the country is paying with 24 barrels of petrol. In general, I believe that we must become software producers (and also technology and innovation producers), and not just consumers. Becoming free software users is a good first step, the next step is to become software producers.⁶⁷

A number of localization resources have been made available for FOSS developers through the International Open Source Network (IOSN), which IDRC also funds. These include policy recommendations, overviews of FOSS localization projects, and technical information and resources.⁶⁸

1.2. Knowledge and Skills

Christopher May notes that FOSS

encourages the development of computer programming, maintenance and developmental skills within the local user community.... FOSS allows local engineers to develop skills related to their local needs. This can also allow a form of ongoing apprenticeship in programming communities, with more experienced programmers helping newer practitioners through email discussion lists and bulletin boards.⁶⁹

Ghosh agrees:

the most important reason for developers to participate in open source communities was to learn new skills — "for free". These skills are valuable, help developers get jobs and can help create and sustain small businesses. The skills referred to here are not those required to use free software, but those learnt from participation in free software communities. Such skills include programming (of course), but also skills rarely taught in formal computer science courses, such as copyright law and licenses (a

⁶⁶ Story, *Study on Intellectual Property Rights, the Internet, and Copyright*, 23

⁶⁷ Slashdot, "Miguel De Icaza Tells all!" <http://slashdot.org/interviews/00/04/03/2344211.shtml> (accessed June 19, 2007); cited in Story, *Study on Intellectual Property Rights, the Internet, and Copyright*, 25

⁶⁸ Anousak Souphavanh and Theppitak Karoonboonyanan, *Free/Open Source Software: Localization* (Bangkok: Asia-Pacific Development Information Programme, 2005), 67; <http://www.iosn.net/110n> (last checked 19 June 2007)

⁶⁹ May, *Escaping the TRIPs' Trap: The Political Economy of Free and Open Source Software in Africa*, 135

major topic of discussion in many free software projects). Teamwork and team management are also learnt — after all, the team management is required to coordinate the smooth collaboration of 1,500-plus people who rarely see each other is more intensive and far subtler than what is required to coordinate smaller teams employed in a single software company.⁷⁰

Ghosh likens FOSS communities to informal apprenticeships, where one of the main motivating factors for participation is “learning new skills” and “sharing skills”:

The FLOSS study showed that developers who provided "learning new skills" as their reason for joining the community often show "sharing skills" as an equally or more important reason for continuing their community participation. This is correlated with the duration of their participation in the community, and thus represents a shift from "apprentice" to "mentor" roles.⁷¹

Gaugier and Douine also argue that:

Firstly, FOSS has a positive impact on personal skills. At an individual level, it requires people to learn English and to improve their skills by using the IT devices of others. This increases the speed of IT diffusion within society as a whole. Furthermore, in the computer era, the availability and diffusion of source code allows everybody to learn programming languages in a learning-by doing process.⁷²

They further argue that the development of such skills “could stimulate a nascent local proprietary software sector” and that, in any case, “open source software and proprietary software industry often coexist and the FOSS’s contributors often work in the IT industry.”⁷³

Finally, Oksanen and Välimäki view FOSS as potentially “a non-controversial way to teach about the fundamental concepts of copyright” if emphasis was placed equally on the enforcement of copyright and the enforcement of FOSS licences.⁷⁴

1.3. Security and Independence

FOSS may be a way for developing countries to assert independence from developed countries’ software, important from both security and economic standpoints. According to Weerawarana and Weeratunga, “The imperative to adopt OSS in these countries

⁷⁰ Rishab Aiyer Ghosh, "Licence Fees and GDP Per Capita," *First Monday* 8, no. 12 (2004), http://www.firstmonday.org/issues/issue8_12/ghosh/ (accessed May 16, 2007).

⁷¹ *ibid*; *Free/Libre and Open Source Software: FLOSS Final Report* (Berlin: International Institute of Infonomics, University of Maastricht, The Netherlands, 2002), <http://www.flossproject.org/report/> (accessed August 27, 2007).

⁷² Gauguier and Douine, *Local Software and Local Content Production Challenge in Developing Countries: What can be Learned from Open Source and Creative Commons Paradigms?*, 10

⁷³ *ibid.*, 11

⁷⁴ Ville Oksanen and Mikko Välimäki, "Free Software and Copyright Enforcement: A Tool for Global Copyright Policy?" *Knowledge, Technology & Policy* 18, no. 4 (, 109).

particularly in the public sector is also motivated by a desire for independence, a drive for security and autonomy and a means to address intellectual property rights enforcement.⁷⁵ Kserti observes that:

Some governments, like those of China, thus perceive proprietary software's hidden protocols threats to national security because it is difficult to know what the software is doing or whether data is being shared inappropriately. Chinese government, for instance, thinks that Microsoft and the U.S. government spy on Chinese computer users through secret "back doors" in Microsoft products.⁷⁶

Independence is viewed as important not only from a national security standpoint, but also from an economic standpoint:

In terms of economic security, developing countries do not want to make themselves as "markets" for the multinational corporations' (MNCs) products. Some governments believe that Linux may reduce their dependence on developed countries. The Chinese government, for instance, perceives Linux as a leapfrogging technology that would allow them to overcome the inability to develop an independent operating system and to catch up in the global technology race.⁷⁷

1.4. Cost savings

One of the greatest drivers of FOSS adoption may simply be, however, cost savings. Costs for proprietary software in developing countries are extraordinarily high and must be balanced against other costs that may be more pressing. Weerawarana and Weeratunga argue that "developing countries in particular, with the resource constraints they face, view OSS as a means of reducing the cost of IT investment and increasing its productivity."⁷⁸

As Ghosh notes, it would cost the average African over 10 months to buy a copy of Windows XP, whereas it would cost the average American four days.⁷⁹ Although the labour costs that go along with owning any software – including FOSS – outweigh license costs in developed countries, meaning that eliminating licensing costs does not eliminate the total costs of ownership; in developing countries labour costs are typically much lower, and eliminating licensing costs can reduce the total cost of ownership by a much larger factor.⁸⁰

⁷⁵ Weerawarana and Weeratunga, *Open Source in Developing Countries*, 28

⁷⁶ N. Kserti, "Economics of Linux Adoption in Developing Countries," *IEEE Software* 21, no. 1 (2004), 74, Draft version available at <http://ssrn.com/abstract=847185> (accessed August 21, 2007).

⁷⁷ *ibid.*

⁷⁸ Weerawarana and Weeratunga, *Open Source in Developing Countries*, 28

⁷⁹ Ghosh, *Licence Fees and GDP Per Capita*

⁸⁰ *ibid.*

2. Regional Considerations

There appear to be few active contributors to open source projects in developing countries.⁸¹ However, among Asian countries, India, China and Taiwan appear to be the most involved in FOSS, followed by South Korea, Malaysia, Singapore and Thailand. Taiwan has developed a “National Open Source Plan” aimed at saving the equivalent of about 63 million dollars (CDN) in government expenditure through investment in open source software.⁸² Bangladesh, Pakistan, Sri Lanka, and Nepal appear to be somewhat less involved with FOSS.⁸³ Among African countries, South Africa is most involved in FOSS followed by Kenya, Namibia, and Nigeria. Some FOSS activities are also starting in Ethiopia, Ghana and Zambia.⁸⁴

Studies funded by IDRC have been conducted into software localization in Asia.⁸⁵ Asia-Pacific regional information on the adoption of FOSS policies is available through country reports on the International Open Source Network (IOSN) web site.⁸⁶ Country-specific information on FOSS in the African region is also available from bridges.org.⁸⁷

3. Gender Considerations

Assessing the information needs of local communities, taking into consideration gender-specific needs, is important in software localization processes. As Kelkar notes, localization of software is one way of meeting the needs of women who are outside the elite business and government circles in which software often circulates.⁸⁸ Women, Keniston observes:

are not only more likely to be illiterate than men, but less likely to know the official and/or national languages. It follows that localization to the vernacular, which women indeed know, would tend to favor women, whereas localization to national and official languages would tend to exclude women disproportionately in many societies.⁸⁹

Intellectual property policies that enable localization and local software production could therefore be especially important to women. Indeed, the second phase of *PAN Asia's* software localization project ‘PANI10n’ is placing special emphasis on the social and

⁸¹ Gauguier and Douine, *Local Software and Local Content Production Challenge in Developing Countries: What can be Learned from Open Source and Creative Commons Paradigms?*, 11

⁸² Niranjani Rajani, Juha Juha Rekola and Timo Mielonen, *Free as in Education: Significance of the Free/Libre and Open Source Software for Developing Countries* (Helsinki, Finland: Suomen OneWorld-portaaliyhdistys and KEPA, 2003), 54, http://www.itu.int/wsis/docs/background/themes/access/free_as_in_education_niranjani.pdf (accessed August 22, 2007).

⁸³ *ibid.*, 58

⁸⁴ *ibid.*, 58

⁸⁵ Hussain, Durrani and Gul, *Survey of Language Computing in Asia 2005*, 165

⁸⁶ <http://www.iosn.net/publications/country-reports> (accessed June 22, 2007)

⁸⁷ <http://www.globaliswatch.org/> (accessed June 22, 2007)

⁸⁸ Govind Kelkar, “Women in the Digital Era: Gender and Culture” (Chidambaram, India, Annamalai University and Software, December 10-12, 2004), <http://www.gendermainstreamingasia.org/img/womenindigital.PDF> (accessed June 22, 2007).

⁸⁹ Kenneth Keniston, *Software Localization: Notes on Technology and Culture*, 1997), 43, <http://web.mit.edu/kken/Public/PDF/Software%20Localization.pdf> (accessed June 22, 2007).

gender aspects of software localization using Gender Evaluation Methodology (GEM) to help integrate gender analysis throughout the project's life cycle.⁹⁰

4. Issues and Problems

4.1. Other costs and barriers

Although FOSS may reduce the costs of access to software, there are many other costs and problems that stand in the way of access to software, including the cost and availability of Internet connectivity, language barriers (development occurs primarily in English)⁹¹, corruption, lack of education in information technology, the costs of hardware, the reliability of electricity.⁹² Access to the Internet is particularly important because "open source development occurs primarily via email communication and shared repositories published on the Internet."⁹³

4.2. Export potential

It is possible that FOSS, if adopted by developing countries, but *not* by developed countries, could create a situation where developing countries were "ghettoized" and developing country software industries were unable to export to developed country markets.⁹⁴ Kserti suggests that companies exporting to developed countries come under pressure to use proprietary software:

Linux users are also encountering compatibility issues with business partners' standards. Trading relationship between firms is a function of the degree of 'fit' of their technologies or the 'technological distance'. Empirical evidence suggests that because of their lower bargaining powers, firms from developing countries are forced to comply with the technologies used by their trading partners in advanced countries.⁹⁵

However, these problems may be less crucial for governments, according to Kserti: "Compatibility issues associated with business partners' technologies have the least influence on governments in developing countries. This is mainly because governments have limited connection with the outside world and don't have to exchange information with customers that follow Microsoft standards."⁹⁶

4.3. Proprietary software vendors

Proprietary software producers like Microsoft may have, in some cases, impeded the growth of FOSS in developing countries. Weerwarana and Weeratunga argue, first, that the piracy of proprietary software "devalues the economic benefits of OSS products

⁹⁰ IDRC Project no. 103669, *PAN Localization Phase II: Building Local Language Computing Capacity in Asia*, http://www.idrc.ca/en/ev-107488-201-1-DO_TOPIC.html (accessed August 24, 2007)

⁹¹ Weerawarana and Weeratunga, *Open Source in Developing Countries*, 35

⁹² May, *Escaping the TRIPs' Trap: The Political Economy of Free and Open Source Software in Africa*, 131; Weerawarana and Weeratunga, *Open Source in Developing Countries*, 35

⁹³ *ibid.*, 35

⁹⁴ May, *Escaping the TRIPs' Trap: The Political Economy of Free and Open Source Software in Africa*, 137

⁹⁵ Kserti, *Economics of Linux Adoption in Developing Countries*, 74

⁹⁶ *ibid.*

by falsely reducing the price of proprietary software.”⁹⁷ Second, Microsoft has entered into various partnerships and grants with the United Nations Development Program (UNDP), the New Partnership for African Development (NEPAD), and the United Nations High Commissioner for Refugees (UNHCR). Such grants and partnerships are seen as a setback to promoters of FOSS, a loss in “the battle to shape Africans’ first contacts with the information society,” since the costs of switching to new software after adopting another can be very high.⁹⁸ Rajani and Mielonen also argue that corruption in some countries means that “FOSS, despite being extremely cost-effective and of competitive quality, is still kept out because companies with enough cash can buy off decision-makers.”⁹⁹

4.4. User-friendliness

Some argue that FOSS software is often less user-friendly than proprietary software, and less responsive to consumer needs. Kserti notes that “very little has been done to increase its user-friendliness and extend its reach outside highly technical and knowledgeable individuals and those in academic computing environments;” while Evans and Reddy argue that, with FOSS, “there is typically little analysis of consumer needs. Programmers may ask themselves “what would I like my software to do?” which may then be augmented by self-selected feedback,” but there is no formal survey of market or consumer needs.¹⁰⁰

4.5. Sufficient incentive and innovation

Some argue that the incentive and business models upon which FOSS is based are faulty. Evans and Reddy argue that there may be insufficient motivation for FOSS developers: “Non-pecuniary rewards can certainly provide some motivation, but they do not appear any more important in software development than in other fields. The limited pecuniary rewards available to open-source developers will tend to limit the supply of effort devoted to these activities.”¹⁰¹ Further, according to the same authors, FOSS projects tend to imitate proprietary software, rather than fostering the high levels of innovation through distributed networks that some claim. Real innovation, they argue, has taken place to a much greater extent in the realm of proprietary software:

The breadth and depth of currently available commercial software came, in general, from investments made in pursuit of profits. Many products have copied their competitors and improved their features. That is the nature of the competitive process. But the spreadsheets, word processors, presentation graphics, multimedia encyclopedias, video games, graphics arts, and other commercial products of today bear little or no resemblance to their forbearers (if any) 25 years ago. Clearly, much innovation in commercial software has occurred over those 25 years. Just as clearly, much (but certainly not all) of the focus of GPL

⁹⁷ Weerawarana and Weeratunga, *Open Source in Developing Countries*, 35

⁹⁸ May, *Escaping the TRIPs’ Trap: The Political Economy of Free and Open Source Software in Africa*, 139

⁹⁹ Rajani, Juha Rekola and Mielonen, *Free as in Education: Significance of the Free/Libre and Open Source Software for Developing Countries*, 71

¹⁰⁰ Kserti, *Economics of Linux Adoption in Developing Countries*, 74; Evans and Reddy, *Government Preferences for Promoting Open-Source Software: A Solution in Search of a Problem*, 341

¹⁰¹ *ibid.*, 357

software over the past two decades has been on creating “free” versions of proprietary software, as even a cursory glance at the projects hosted on SourceForge reveals.¹⁰²

4.6. Software patents

Some countries, like the United States and the United Kingdom, grant patents in software, while many developing countries, such as India, South Africa, Brazil, and Argentina do not.¹⁰³ There is, however, some pressure on these countries to grant patents in software.¹⁰⁴ The *TRIPs Agreement* allows, and may even require, the granting of software patents. Alan Story argues that:

A wide swath of countries in the South might also face a formal WTO sanction for not explicitly permitting the patenting of software. Yet, at least for the moment, the chances of such a case being made successfully seem slight and a victory on this matter by the United States (or another country) would likely spark a serious backlash.¹⁰⁵

Patents and copyright offer different types of protection. Gopinath and Ravishankar explain one of the most important differences:

It may take some considerable time and money to get a patent but it gives broader powers than, say, copyrights. For example, a patent is infringed even if the accused is not aware of the patent, whereas a court might accept ignorance as an excuse in the case of a copyright.¹⁰⁶

For just this reason, software patents present a particular danger to FOSS initiatives; a FOSS programmer or user could unknowingly infringe on a software patent in a FOSS program. It has been claimed, for example, that the Linux kernel may infringe almost 300 patents.¹⁰⁷ If pursued, this could mean that the FOSS developer or user would be required to pay damages or licensing fees to the patentee, or to cease use and distribution of the FOSS software.

¹⁰² *ibid.*, 363

¹⁰³ <http://boycottnovell.com/2007/01/22/software-patents-in-south-africa-microsofts-turn/> (last checked August 28, 2007); <http://www.fsfla.org/?q=fr/node/96> (last checked August 28, 2007)

¹⁰⁴ <http://www.fsfla.org/?q=fr/node/96> (last checked August 28, 2007)

¹⁰⁵ Alan Story, *Intellectual Property and Computer Software: A Battle of Competing use and Access Visions for Countries of the South* (Geneva: International Centre for Trade and Sustainable Development and United Nations Commission on Trade and Development, 2004), 25, http://www.iprsonline.org/unctadictsd/docs/CS_Story.pdf (accessed August 28, 2007).

¹⁰⁶ K. Gopinath and M. K. Ravishankar, "Intellectual Property Rights in Computer Software: Issues at Stake for Developing Countries," *Information Technology for Development* 7, no. 4 (1997), 3, Draft version available at: <http://citeseer.ist.psu.edu/cache/papers/cs/11316/http:zSzzSzdrone.csa.iisc.ernet.inzSz~gopizSzprzSzjit97.pdf/gopinath96intellectual.pdf> (accessed August 28, 2007).

¹⁰⁷ Mikko Välimäki, "A Practical Approach to the Problem of Open Source and Software Patents," *European Intellectual Property Review* 26 (2004), 5, Draft version available at http://www.valimaki.com/org/os_patents.pdf (accessed August 28, 2007).

Many FOSS licenses anticipate this possibility, and incorporate a ‘terminator clause’ to prevent patentees from placing non-FOSS compatible restrictions on the use of a FOSS program.¹⁰⁸ The terminator clause requires the FOSS rights holder to terminate distribution of the software if FOSS-incompatible restrictions are made by a third party via a patent license. Insurance companies also anticipate this possibility; some offer patent and intellectual property insurance to FOSS developers and users.¹⁰⁹ Others have responded by advocating for policy changes that would exempt open source projects from such liability.¹¹⁰

The FOSS community advocates strongly against software patents, arguing not only that they present a threat to FOSS software, but also that they inhibit innovation more generally. Software, they note, is developed incrementally, and patents may stop this incremental innovation in its tracks:

Due to incremental evolution of software (note, for example, successive revisions of DOS and Windows, and NT), there exists little opportunity for late entrants to develop competitive software if they have been thwarted in this evolutionary process. If software patents become the norm, this problem is likely to be aggravated much further. For example, a compiler is a basic piece of software that enables a programmer to express algorithms in a high-level language. However, a class of graph algorithms that accomplishes the crucial task of mapping program variables to registers in the machine (the problem of register allocation in a compiler) has been patented in the US. Hence, no compiler can be developed that uses this important and almost unavoidable step without arranging for a patent license. This problem might be tolerable if it were one of a few isolated cases. But any worthwhile software system would need to use a large number of patented techniques, thus making software production costly.¹¹¹

Besson and Hunt have observed that software patents are associated with *lower* levels of research and development in the United States. They also note that most software patents are held not by software publishers but by firms in “industries known for strategic patenting”:

Firms in these industries ...obtain patents to aid negotiations, to crosslicense, to block competitors, and to prevent suits (Levin et al. 1987, Cohen, Nelson, and Walsh 2000). Firms in some of these industries engage in strategic cross-licensing of whole portfolios (Grindley and Teece 1997, Hall and Ziedonis 2001). These industries have rapidly increased their rates of patenting in general (Hall 2003).

¹⁰⁸ *ibid.*, 2-3

¹⁰⁹ *ibid.*, 6

¹¹⁰ *ibid.*, 7-10

¹¹¹ Gopinath and Ravishankar, *Intellectual Property Rights in Computer Software: Issues at Stake for Developing Countries*, 12-13

Our results are consistent with the explanation that these industries acquired large numbers of software patents because they became a cost-effective means of building strategic portfolios.¹¹²

The need to avoid patent infringement may also impede innovation in some jurisdictions by requiring new developers to conduct patent searches before commencing a new project, so as to avoid patent infringements. This requirement presents an even greater problem for developing countries, since patent searches require time, resources, and access to the required systems.¹¹³

These difficulties have led one author to conclude:

If software patents cannot be abolished altogether as the League of Programming Freedom has demanded in the US, a more favourable IPR regime should be made available for developing countries (and not just for the least developed countries, as provided in TRIPs).¹¹⁴

Others argue that software patents are extremely important drivers of innovation, and necessary in developing countries if they are to remain competitive with other countries that do offer software patents.¹¹⁵

5. Recommended Reading

- Story, Alan. *Intellectual Property and Computer Software: A Battle of Competing use and Access Visions for Countries of the South*. UNCTAD-ICTSD Project on IPRs and Sustainable Development: Issue Paper no. 10. Geneva: International Centre for Trade and Sustainable Development and United Nations Commission on Trade and Development, 2004, http://www.ipronline.org/unctadictsd/docs/CS_Story.pdf (accessed August 28, 2007).
- Story, Alan. *Study on Intellectual Property Rights, the Internet, and Copyright*. Sections 2 and 4. Commission on Intellectual Property Rights Study Paper no. 5, http://www.iprcommission.org/papers/pdfs/study_papers/sp5_story_study.pdf (accessed June 18, 2007).
- Bessen, James E. and Robert M. Hunt. *An Empirical Look at Software Patents*. Philadelphia: FRB of Philadelphia Working Paper No. 03-17, 2004, <http://ssrn.com/abstract=461701> (accessed August 28, 2007).

¹¹² James E. Bessen and Robert M. Hunt, *An Empirical Look at Software Patents* (Philadelphia: FRB of Philadelphia Working Paper No. 03-17, 2004), 39, <http://ssrn.com/abstract=461701> (accessed August 28, 2007).

¹¹³ Gopinath and Ravishankar, *Intellectual Property Rights in Computer Software: Issues at Stake for Developing Countries*, 13

¹¹⁴ *ibid.*, 15

¹¹⁵ Patrick Ross. "The Brazilian Software Market and Patents." The Progress & Freedom Foundation Blog, April 12, 2006, <http://blog.pff.org/archives/2006/04/print/002805.html> (accessed August 28, 2007).

4 Copyright Limitations and Exceptions

1 Introduction

Copyright does not apply to everything. It does not apply to works that are in the public domain, for example, or to ideas in one's head. Copyright *limitations* set out copyright's boundaries – the limited area within which copyright operates. There are limitations on the types of works to which copyright applies, and on the length of time copyright lasts. A copyright, in many countries lasts for the life of the author plus 50 years, after which it expires; this is one of copyright's *limitations*.

Copyright *exceptions* are cases where exceptions are made to exclude certain kinds of use from copyright liability that would otherwise apply. For example, although it is normally an infringement of copyright to copy a CD, there might be an *exception* in national copyright law that allows users to copy a CD for personal use. Thus, even within the boundaries of copyright's general applicability, there are important *exceptions* that make certain uses allowable.

Copyright limitations and exceptions are important to many groups, including developing countries. Indeed, they are often seen as crucial mechanisms within the copyright system that allow socially and economically beneficial uses of works. Limitations and exceptions are necessary to achieving certain public policy goals, and to encourage creativity and innovation.

The Berne Convention for the Protection of Literary and Artistic Works

Article 2

“(4) It shall be a matter for legislation in the countries of the Union to determine the protection to be granted to official texts of a legislative, administrative and legal nature, and to official translations of such texts.

[...]

(8) The protection of this Convention shall not apply to news of the day or to miscellaneous facts having the character of mere items of press information.”

Article 2bis

“(1) It shall be a matter for legislation in the countries of the Union to exclude, wholly or in part, from the protection provided by the preceding Article political speeches and speeches delivered in the course of legal proceedings.”¹¹⁶

¹¹⁶ *The Berne Convention for the Protection of Literary and Artistic Works. Paris Act of July 24, 1971, as Amended on September 28, 1979*, http://www.wipo.int/treaties/en/ip/berne/trtdocs_wo001.html (accessed August 13, 2007).

Various copyright limitations and exceptions are suggested in international treaties. Articles 2 and 2bis of the *Berne Convention* (see inset, previous page), for example, set out several *limitations* to copyright by describing the types of works to which copyright applies, and also certain things to which it does not, including facts and news of the day. Article 2bis also describes certain additional limitations that countries may choose to set in national legislation, allowing, for example, countries to exclude official and legal texts from copyright protection. The *Berne Convention* also suggests several *exceptions* for certain uses. Article 10 (see inset) describes exceptions that may be made in national legislation for uses such as quoting from a work, illustration, and reporting current events.

International treaties also *restrict* the types of exceptions that can be granted to users in national law. The *three-step test* (see inset, next page), which has been incorporated into the *Berne Convention*, the World Trade Organization (WTO) *Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs Agreement)*, the *WIPO Copyright Treaty (WCT)*, and the *WIPO Performers and Phonograms Treaty (WPPT)*, describes the types of exceptions that a country is allowed to make. Under the three-step test, a country may only make copyright exceptions for uses that are 1) confined to certain special cases, 2) do not conflict with the normal exploitation of the work, and 3) do not unreasonably prejudice the legitimate interests of the author.¹¹⁸

There has been some theoretical debate as to whether the American fair use provisions would stand up to the three step test, since the provisions are broad – thereby potentially conflicting with the ‘special cases’ step, and since the fair use provisions do not explicitly reference a need to ensure the authors’ interests are not unreasonably prejudiced, as required by step three.¹¹⁹

The Berne Convention for the Protection of Literary and Artistic Works

Article 10

“(1) It shall be permissible to make quotations from a work which has already been lawfully made available to the public, provided that their making is compatible with fair practice, and their extent does not exceed that justified by the purpose, including quotations from newspaper articles and periodicals in the form of press summaries.

(2) It shall be a matter for legislation in the countries of the Union, and for special agreements existing or to be concluded between them, to permit the utilization, to the extent justified by the purpose, of literary or artistic works by way of illustration in publications, broadcasts or sound or visual recordings for teaching, provided such utilization is compatible with fair practice.

(3) Where use is made of works in accordance with the preceding paragraphs of this Article, mention shall be made of the source, and of the name of the author if it appears thereon.”¹¹⁷

¹¹⁷ *ibid.*

¹¹⁸ *ibid.* Article 9(2); *Final Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations, Annex IC: Agreement on Trade-Related Aspects of Intellectual Property Rights*, Article 13, http://www.wto.org/english/docs_e/legal_e/27-trips.pdf (accessed August 15, 2007); *WIPO Copyright Treaty, Adopted in Geneva on December 20, 1996*, Article 10, http://www.wipo.int/treaties/en/ip/wct/trtdocs_wo033.html (accessed August 15, 2007); *WIPO Performances and Phonograms Treaty, Adopted in Geneva on December 20, 1996*, Article 16, http://www.wipo.int/treaties/en/ip/wppt/trtdocs_wo034.html (accessed August 15, 2007).

¹¹⁹ Sam Ricketson, *WIPO Study on Limitations and Exceptions of Copyright and Related Rights in the Digital Environment* (Geneva: World Intellectual Property Organization, [2003]), http://www.wipo.int/edocs/mdocs/copyright/en/sccr_9/sccr_9_7.pdf (accessed July 10, 2007).

There have also been attempts to encourage reinterpretation of the three-step test as a part of the access to knowledge movement. Such reinterpretation would allow developing countries greater flexibility in legislating copyright exceptions. (See Chapter 10, section 2.1, below.)

Numerous authors have noted that, while there are minimum standards for copyright *protection* under international treaties, the provisions for limitations and exceptions are generally optional; there are no international

minimum standards for limitations and exceptions to copyright.¹²¹ This is seen by many to be unfair to both users of copyright works and to developing. Ruth Okidiji and others have suggested that certain minimum standards for copyright exceptions and limitations be established.¹²²

Several organizations have set out to encourage countries to include, to the maximum extent possible, such limitations and exceptions as are allowable under international treaties. The Commonwealth of Learning has published a document encouraging governments to conduct “an audit of copyright laws to ensure that they take advantage of flexibilities in international agreements to safeguard and enhance access to learning content.”¹²³ Consumers International has issued a similar and more detailed document, funded by IDRC.¹²⁴

2 Intersection with ICT4D

2.1 Limitations: computer programs and compilations of data; fixation; rights to commercial rental and communication to the public

Depending on the age of the copyright treaties to which a country subscribes, international copyright obligations may or may not encompass categories of works that

The Berne Convention for the Protection of Literary and Artistic Works

Article 9: The Three Step Test

“(2) It shall be a matter for legislation in the countries of the Union to permit the reproduction of such works in certain special cases, provided that such reproduction does not conflict with a normal exploitation of the work and does not unreasonably prejudice the legitimate interests of the author.”¹²⁰

¹²⁰ World Intellectual Property Organization, *The Berne Convention for the Protection of Literary and Artistic Works. Paris Act of July 24, 1971, as Amended on September 28, 1979*

¹²¹ Ruth Okediji, *The International Copyright System: Limitations, Exceptions and Public Interest Considerations for Developing Countries* (Geneva, Switzerland: United Nations Conference on Trade and Development (UNCTAD), [2006]), <http://www.iprsonline.org/unctadictsd/docs/ruth%202405.pdf> (accessed May 23, 2007); Alan Story, “Burn Berne: Why the Leading International Copyright Convention must be Repealed,” *Houston Law Review* 40 (2003), 763-803, http://www.houstonlawreview.org/archive/downloads/40-3_pdf/storyg3r.pdf (accessed July 10, 2007); World Intellectual Property Organization, *Proposal by Chile on the Analysis of Exceptions and Limitations* (Geneva: World Intellectual Property Organization, 2005), http://www.wipo.int/meetings/en/doc_details.jsp?doc_id=53350 (accessed July 12, 2007).

¹²² Okediji, *The International Copyright System: Limitations, Exceptions and Public Interest Considerations for Developing Countries*; World Intellectual Property Organization, *Proposal by Chile on the Analysis of Exceptions and Limitations*

¹²³ Commonwealth of Learning, *Document for Commonwealth Countries on Copyright Matters in Education* (Johannesburg: Commonwealth of Learning, 2005), 4, <http://www.col.org/colweb/webdav/site/myjahiasite/shared/docs/Copyright%20Document.pdf> (accessed August 14, 2007).

¹²⁴ Consumers International, *Copyright and Access to Knowledge: Policy Recommendations on Flexibilities in Copyright Laws* (Kuala Lumpur: Consumers International, [2006]), http://www.soros.org/initiatives/information/focus/access/articles_publications/publications/copyright_20060602/copyright_access.pdf (accessed July 17, 2007).

have emerged with new information and communication technologies. For example, the 1971 *Berne Convention* does not require the protection of computer programs and compilations of data, whereas the more recent *TRIPs Agreement* and the *WIPO Copyright Treaty* do.

Consumers International, in their 2006 study, argued that developing countries, as net importers of copyright products, should extend only the minimum copyright protection necessary under international agreements. They note that developing countries not party to the *TRIPs Agreement* or the *WIPO Copyright Treaty* are not bound to extend copyright protection to computer programs and compilations of data. Such countries, they argue, should therefore not extend protection to such categories of works.¹²⁵ Countries that do extend protection to compilations of data, they argue further, should ensure that this protection does not extend to the data itself. That protection should not extend to the data itself in a compilation is provided by both the *TRIPs Agreement* and the *WIPO Copyright Treaty*.¹²⁶

Consumers International also notes that the *Berne Convention* allows countries to limit copyright protection to only those works “fixed in material form,” leaving it open to countries to define ‘fixed in material form’ either broadly or narrowly. They recommend that developing countries define fixation as narrowly as possible, so as to exclude digital works from copyright protection.¹²⁷

More recent copyright treaties, including the *WIPO Copyright Treaty* and the *TRIPs Agreement*, require the extension of new rights related to information and communication technologies to copyright holders, such as the right to control the commercial rental of computer programs and the right to ‘make available’ (i.e. on the Internet). Consumers International argues that countries not bound by *TRIPs* or the *WIPO Copyright Treaty* should not extend those rights, since the requirement to extend them arose only with those later treaties.¹²⁸

2.2 Exceptions: Backup copies, interoperability, private copying, distance education, digital copies for preservation purposes, digital inter-library loan, ISP liability

Although international conventions do not specify particular ICT-related exceptions, a number of such exceptions are allowed under the three-step test. Some countries have created exceptions that allow users to make backup copies of computer programs, or to copy or translate computer programs in order to make them interoperable with other systems. Some countries allow the making of copies for personal or private use, an exception that may or may not extend to copies made over computer networks. With regard to educational institutions and libraries, some countries provide exceptions allowing for digital copies made in the context of distance education, such as copies made at a remote distance education classroom, and for digital copies of works made by libraries for the purposes of preservation or inter-library loan. As well, exceptions are

¹²⁵ *ibid.*

¹²⁶ *ibid.*

¹²⁷ *ibid.*

¹²⁸ *ibid.*

made for certain ICT-related parties, such as Internet service providers, excluding them from copyright liability for infringements made over their networks. The range of exceptions that can be implemented by most developing countries for ICT-related uses and users extends as far as what can be encompassed under the three-step test.

2.3 Reverse engineering

One exception that has received particular focus is reverse engineering. The Intellectual Property Rights Commission recommends that developing countries “permit the reverse engineering of computer software programmes beyond the requirements for inter-operability, consistent with the relevant IP treaties they have joined.”¹²⁹ Reverse engineering is permissible under the *TRIPs* and WIPO treaties, and in the United States, reverse engineering of software is allowable for the purposes of creating interoperable software.¹³⁰ However, as a study for the Intellectual Property Rights Commission reports, in some developing countries reverse engineering of software is illegal.¹³¹

While there is some interesting legal literature discussing the issue of software reverse engineering in general from a developed country perspective, there is little dealing with software reverse engineering as a strategy for developing countries in general, or in the area of software localization in particular.¹³² One IDRC-funded study that examined the limitations and exceptions of *TRIPs* and WIPO copyright treaties did not examine the permissibility of reverse engineering, since its focus was on educational uses.¹³³ Since reverse engineering is an important industrial strategy for developing countries on many fronts, with great significance for ICTs, it deserves further study.

3 Regional Considerations

The Consumers International study discussed above presents a good overview of limitations and exceptions in Bhutan, Cambodia, China, India, Indonesia, Kazakhstan, Malaysia, Mongolia, Papua New Guinea, the Philippines and Thailand. The study examines each of these countries and whether they have put in place the limitations and exceptions allowable under the treaties to which they are a party.¹³⁴ A similar study for the African region is under consideration by IDRC.

¹²⁹ Commission on Intellectual Property Rights, *Integrating Intellectual Property Rights and Development Policy: Report of the Commission on Intellectual Property Rights*, 105

¹³⁰ Keith E. Maskus and M. Lahouel, "Competition Policy and Intellectual Property Rights in Developing Countries," *The World Economy* 23, no. 4 (2000), 603; Pamela Samuelson and Suzanne Scotchmer, "The Law and Economics of Reverse Engineering," *Yale Law Journal* 111, no. 7 (May, 2002), 1575-1663, <http://www.yalelawjournal.org/pdf/111-7/SamuelsonFINAL.pdf> (accessed June 20, 2007).

¹³¹ Unfortunately the study does not provide very much detail about the laws on reverse engineering in the countries under examination. Phil Thorpe, *Study on the Implementation of the TRIPS Agreement by Developing Countries* Commission on Intellectual Property Rights, [2001], http://www.iprcommission.org/papers/pdfs/study_papers/sp7_thorpe_study.pdf (accessed June 19, 2007).

¹³² From a developed country perspective, Pamela Samuelson discusses the economic importance of reverse engineering, and the encroachments US copyright law on reverse engineering of software. Samuelson and Scotchmer, *The Law and Economics of Reverse Engineering*, 1575-1663. Charles McManis gives a legal analysis of software reverse engineering from a United States and European Community perspective. Charles R. McManis, "Intellectual Property Protection and Reverse Engineering of Computer Programs in the United States and the European Community," *Berkeley Technology Law Journal* 8, no. 1 (Spring, 1993), http://btlj.boalt.org/data/articles/8-1_spring-1993_mcmanis.pdf (accessed June 20, 2007).

¹³³ Consumers International, *Copyright and Access to Knowledge: Policy Recommendations on Flexibilities in Copyright Laws*

¹³⁴ *ibid.*

Specific regional information is difficult to obtain with regard to reverse engineering. As is noted in a study for the Intellectual Property Rights Commission, reverse engineering is illegal in South Africa.¹³⁵ In Malaysia, reverse engineering appears to be illegal for commercial purposes, while in India, Sri Lanka and the Philippines reverse engineering is legal to enable “use with a computer” or to achieve interoperability.¹³⁶ The data from this study are, however, incomplete and lacking detail.

4 Gender Considerations

Ann Bartow notes categories of works sometimes associated with women, such as arts and crafts are often “relegated to the domestic realm.” They are “less often the subject of rigorous copyright protections or restrictions,” and may, therefore, often fall outside the limitations of copyright law.¹³⁷ Women may, in fact, find themselves more often on the other side of copyright law, vulnerable to allegations of copyright infringement. Therefore, Bartow argues, limitations and exceptions in copyright can be particularly important to women: “As a shelter from the buffeting copyright claims of others, fair use may be more important to noncommercial creators than it is to profit seeking entities.”¹³⁸ Further, she argues that the idea of ‘fairness’ itself is a gendered concept; that women and men “may construe fairness differently.”¹³⁹ Bartow’s work, however, is mainly intended as a survey of areas of possible future research on copyright and women. As such, it asks more questions than it answers.

5 Issues and Problems

A number of things can impede the enjoyment of copyright limitations and exceptions by users and creators in developing countries, including contracts that override such limitations and exceptions, and digital rights management systems.

5.1 Contractual Overrideability and Click/Shrink-Wrap Agreements

The shift to digital modes of access has led to the expanded use of licensing in place of the outright purchase of copies of works by libraries and other institutions. For example, a library that once might have purchased copies of a particular journal will now often enter, instead, into a contract that allows the library and its patrons to access and use an electronic database containing a variety of journals. The terms of such contracts are often place more restrictions on the users of the databases than what copyright normally places on users of purchased copies of works:

The tendency for transactions related to digital information to be governed by contracts entails the possible annulment of the limitations to copyright through the terms and conditions established in such licensing contracts. In reality, libraries and other consumers of digital works are obliged to renounce copyright limitations such as the first sale doctrine, fair use and preservation, thereby impeding the development of their

¹³⁵ Thorpe, *Study on the Implementation of the TRIPS Agreement by Developing Countries*, 38

¹³⁶ *ibid.*

¹³⁷ Ann Bartow, “Fair use and the Fairer Sex: Gender, Feminism, and Copyright Law,” *Journal of Gender, Social Policy & the Law* 14, no. 3 (2006), 559, <http://www.wcl.american.edu/journal/genderlaw/14/bartow3.pdf> (accessed June 28, 2007).

¹³⁸ *ibid.*, 559

¹³⁹ *ibid.*, 560

usual and legitimate activities. Examples of such restrictive practices are many: the interlibrary loan of digital materials is prohibited; classroom and off-campus uses are complicated (giving rise to a situation reminiscent of the medieval “chained books” that could only be read at a specific desk); it is impossible for libraries to make copies of electronic materials for the purpose of archiving and preservation; even when libraries sign agreements that allow them to have perpetual access, there is not necessarily a solid copy (and then what happens if the content provider fails?); and donations become more difficult (leaving the libraries obligated to purchase works that they could have obtained free from private donors).¹⁴⁰

The relative negotiating power of the parties to such contracts is of special concern, especially in relation to click/shrink-wrap agreements which “apply to many people who in most cases have not read or understood the terms and conditions therein.”¹⁴¹ As Fernández-Molina writes:

It is not at all clear whether licensees have much power in their relationships with information providers, due to the great concentration over the recent years that has led to a situation of scarce competition and a market dominated by a handful of firms. For this reason it is possible that the provider or vendor of information makes offers of the ‘take it or leave it’ type.¹⁴²

Some have argued that contracts – and especially click/shrink-wrap contracts – that override fair use or fair dealing exceptions should be declared null and void.¹⁴³ This possibility is, however, complicated by the particularities of contract law, which differ from jurisdiction to jurisdiction:

The limits on freedom of contract are very diverse in the different legal systems, from those of a general character – such as the doctrine of good faith in continental European civil law or the doctrine of unconscionability in American common law – to more specific ones, for example those established by the norms of public order, by constitutional rights or by notions of abuse and misuse of rights.¹⁴⁴

The question is further complicated by the various legal authorities involved with copyright and contract law. For example, whereas copyright falls under the power of Congress in the United States, contract law is under the authority of the various

¹⁴⁰ J. Carlos Fernández-Molina, “Contractual and Technological Approaches for Protecting Digital Works: Their Relationship with Copyright Limitations,” *Online Information Review* 28, no. 2 (2004), 152, <http://hera.ugr.es/doi/15057987.pdf> (accessed July 6, 2007).

¹⁴¹ J. Carlos Fernández-Molina, “Licensing Agreements for Information Resources and Copyright Limitations and Exceptions,” *Journal of Information Science* 30, no. 4 (2004), 341.

¹⁴² *ibid.*, 344

¹⁴³ *ibid.*

¹⁴⁴ *ibid.*, 340

states.¹⁴⁵ Lucie Guibault provides a book-length legal analysis of the contractual overridability of copyright limitations in several developed countries in *Copyright Limitations and Contracts: An Analysis of the Contractual Overridability of Limitations on Copyright* (2002).¹⁴⁶

5.2 Digital Rights Management

Digital rights management systems (DRM), also referred to as technological protection measures (TPM), have been far more controversial in developed countries than the contractual overrideability of copyright. This may be because of their ability not only to disallow what would otherwise be the legal use of a work, but also to technologically prevent such legal uses. As such, DRM can hinder everyday use of digital works.

There has been very little analysis of the impact of DRM technologies in developing countries. However, in a document entitled *Digital Rights Management: A Failure in the Developed World, a Danger to the Developing World*, the Electronic Frontier Foundation has provided a broad outline of some of the problems that DRM poses in developing countries. The report notes that Internet access can be necessary in order to access DRM-protected works, since some DRM technologies use a network connection to verify whether a user is authorized to use a work or to charge users for the use of a work. Without Internet access, the work may be unusable. Since Internet access is not ubiquitous in developing countries, this poses a particular problem.

Other problems that DRM poses, according to the Electronic Frontier Foundation report, are common to both developing and developed countries, although they may be more acute in developing countries. As noted above, DRM can trump copyright limitations and exceptions. DRM can also pose problems to libraries by blocking access to or increasing the cost of library materials, or by hindering the library's preservation and archiving of materials. Libraries, the report notes, play an important role in developing literacy and providing access to agricultural, health, academic and educational materials in developing countries.

Further, the report argues that DRM can create costs for authors and performers who must pay to have their works included in DRM-protected systems such as some mobile phone networks. This is especially burdensome for authors and performers in developing countries, and part of the price paid for inclusion goes to foreign DRM companies.

As well, DRM often prevents the resale or lending of DRM-protected works. The report notes that developing countries have a particular reliance on used goods.

Finally, the report notes that the public domain is an important resource for developing countries, providing a source of health, education, and scientific information. Public

¹⁴⁵ *ibid.*, 341

¹⁴⁶ Lucie Guibault, *Copyright Limitations and Contracts: An Analysis of the Contractual Overridability of Limitations on Copyright* (The Hague: Kluwer Law International, 2002), 392, http://isbndb.com/d/book/copyright_limitations_and_contracts_an_analysis_of_the_contr (accessed July 13, 2007).

domain materials, however, can be enclosed in DRM: “DRM systems can be applied to public domain works as readily as they can be applied to copyrighted works. This is a kind of brazen banditry in which a DRM is used to claim ownership rights in works that belong to the public.”¹⁴⁷

6 Recommended Reading

- Okediji, Ruth. *The International Copyright System: Limitations, Exceptions and Public Interest Considerations for Developing Countries*. Geneva, Switzerland: United Nations Conference on Trade and Development (UNCTAD), 2006, <http://www.iprsonline.org/unctadictsd/docs/ruth%202405.pdf> (accessed May 23, 2007).
- Ricketson, Sam. *WIPO Study on Limitations and Exceptions of Copyright and Related Rights in the Digital Environment*. Geneva: World Intellectual Property Organization, 2003, http://www.wipo.int/edocs/mdocs/copyright/en/sccr_9/sccr_9_7.pdf (accessed July 10, 2007).
- Electronic Frontier Foundation. *Digital Rights Management: A Failure in the Developed World, a Danger to the Developing World*, <http://www.nlu.go.ug/dwnld/Doctorow.pdf> (accessed May 17, 2007).

¹⁴⁷ Electronic Frontier Foundation, *Digital Rights Management: A Failure in the Developed World, a Danger to the Developing World*, 17, <http://www.nlu.go.ug/dwnld/Doctorow.pdf> (accessed May 17, 2007).

5 Traditional Knowledge

1. Introduction

The protection of traditional knowledge (TK) is a high-priority issue both for Asian and African countries.¹⁴⁸ Traditional knowledge includes knowledge of traditional medicine (TM), agriculture and the environment ('traditional environmental knowledge' or TEK), biological and genetic resources, and cultural forms such as literary works, designs, songs, handicrafts, and dances. The term 'traditional knowledge' is generally applied to knowledge held by indigenous peoples.¹⁴⁹

One of the main issues of concern with regard to traditional knowledge is simply its preservation in light of the threats to local economies, languages and practices. However, there are also fundamental issues of justice related to the use of and/or commercialization of traditional knowledge by outside groups. These problems arise when:

1. the use of the traditional knowledge outside its original context is considered to be offensive to the communities in which it originates;
2. prior informed consent to the use of the traditional knowledge is not acquired by outside groups making use of or patenting it; or
3. the benefits derived from its commercialization is not adequately shared with the communities from which it originates.

No detailed international standard on the protection of traditional knowledge has been adopted, but discussions of these issues are ongoing at the biannual meetings of parties to the *Convention on Biological Diversity*;¹⁵⁰ WIPO's Intergovernmental

¹⁴⁸ World Intellectual Property Organization, *WIPO General Assembly : Thirty-First (15th Extraordinary) Session, Geneva, September 27 to October 5, 2004: Report. WO/GA/31/15* (Geneva: World Intellectual Property Organization, 2004), Items 160 and 198, http://www.wipo.int/meetings/en/doc_details.jsp?doc_id=36845 (accessed August 15, 2007).

¹⁴⁹ For discussion of the problems distinguishing between "traditional" and "modern" communities, see J. Michael Finger and Philip Schuler, eds., *Poor People's Knowledge: Promoting Intellectual Property in Developing Countries* (Washington, DC: World Bank, 2004), 31-32 and Graham Dutfield, *Protecting Traditional Knowledge and Folklore* (Geneva: International Centre for Trade and Sustainable Development (ICTSD) and United Nations Conference on Trade and Development (UNCTAD), [2003]), http://www.ictsd.org/pubs/ictsd_series/iprs/GS_dutfield.pdf (accessed May 30, 2007).

¹⁵⁰ *ibid.*

Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore; the WTO; the Food and Agriculture Organization; the United Nations Conference on Trade and Development (UNCTAD); the United Nations Commission on Human Rights (UNCHR); and the World Health Organization (WHO).¹⁵¹ The *Convention on Biological Diversity*, established in 1992 and now signed by almost 200 countries, has been the highest-profile agreement concerned with traditional knowledge issues. It requires fair and equitable sharing of benefits derived from the use of traditional knowledge, and calls for access to genetic resources to take place on mutually agreed terms.¹⁵²

In the face of these broad agreed objectives, there remains a great deal of debate on what form the protection of traditional knowledge should take, and to what extent existing intellectual property instruments, such as patents, copyrights, and trademarks can or should be used in its protection. First, copyright, patent, and trademark protection all expire after set terms, limiting their usefulness in the protection of traditional knowledge, which is often passed down generation after generation. Second, since copyright does not protect ideas, and sometimes only protects that which is recorded, or ‘fixed’, its usefulness may be limited in protecting traditional knowledge, which may not be recorded or written down. Third, the applicability of patent law to traditional knowledge is also limited: the object of a patent must have an industrial or commercial application, which some traditional knowledge may not have. Finally, the object of a patent must be non-obvious, which may limit the potential use of patent protection in certain cases.¹⁵³

There were several attempts prior to the 1990s to confront the shortcomings of existing forms of intellectual property in protecting traditional knowledge. At that time, the focus of policy discussion at the United Nations Educational, Scientific, and Cultural Organization (UNESCO) and at WIPO was on folklore rather than traditional knowledge.¹⁵⁴ Several model laws, such as the 1982 *WIPO-UNESCO Model Provisions for National Laws on Protection of Expressions of Folklore against Illicit Exploitation and Other Prejudicial Actions* and the 1976 *Tunis Model Law on Copyright in Developing Countries*, promoted a form of protection for folklore that might be considered “copyright-plus”. This copyright-plus approach protected even unfixed works, mandated a perpetual term of protection, and promoted a concept called a “paid public domain” in which “works that have fallen into the public domain may be used without restriction subject to the payment of a fee.”¹⁵⁵ The concept of a “paid public domain” has been criticized:

Some are concerned that a creative society depends upon a freely accessible public domain. If fees are charged to use the public domain information and cultural works and expression, the effect may be to stifle

¹⁵¹ *ibid.*

¹⁵² Commission on Intellectual Property Rights, *Integrating Intellectual Property Rights and Development Policy: Report of the Commission on Intellectual Property Rights*, 84

¹⁵³ Daniel Gervais, “Traditional Knowledge & Intellectual Property: A TRIPS-Compatible Approach,” *Michigan State Law Review* (Spring, 2005), 137-166, <http://ssrn.com/abstract=507302> (accessed May 30, 2007).

¹⁵⁴ Dutfield, *Protecting Traditional Knowledge and Folklore*, 20

¹⁵⁵ *ibid.*

further creativity and innovation. On the other hand, it is sometimes argued that “the public domain” is an inappropriate western concept anyway. This is because it tends to be applied in ways that fail to acknowledge the customary property rights and claims of traditional societies.¹⁵⁶

Legislation based on these model laws is fairly rare, but does exist in some African countries.¹⁵⁷

2. Intersection with ICT4D

ICTs can be used in the protection and preservation traditional knowledge, although controversies remain with regard to their appropriate use. First, databases and digital archives are used both to preserve traditional knowledge and to assess prior art in the patent application process. Second, rights management software, customized to the needs of traditional knowledge applications, has been proposed. Finally, the potential use of alternative licensing, such as Creative Commons licenses, in protecting traditional knowledge, has begun to be explored.

In one example that is often cited in the literature on traditional knowledge, India has developed a Traditional Knowledge Digital Library of Ayurvedic texts and images, to be made available to global patent examiners on a non-disclosure agreement. The purpose of the database is to prevent patents from being granted in previously existing Ayurvedic knowledge by documenting the existence of this knowledge prior to the patent application.¹⁵⁹ Traditional knowledge databases have also been established by Inuit groups in Canada, Fudeci indigenous

“In a quiet government office in the Indian capital, Delhi, some 100 doctors are hunched over computers poring over ancient medical texts and keying in information. These doctors are practitioners of ayurveda, unani and siddha, ancient Indian medical systems that date back thousands of years. One of them is Jaya Saklani Kala, a young ayurveda doctor, who is wading through a dog-eared 500-year-old text book for information on a medicine derived from the mango fruit. “Soon the world will know the medicine, and the fact that it originated from India,” she says. With help from software engineers and patent examiners, Ms Kala and her colleagues are putting together a 30-million-page electronic encyclopaedia of India's traditional medical knowledge, the first of its kind in the world. The ambitious \$2m project, christened Traditional Knowledge Digital Library, will roll out an encyclopaedia of the country's traditional medicine in five languages - English, French, German, Japanese and Spanish - in an effort to stop people from claiming them as their own and patenting them.”¹⁵⁸

communities in Venezuela, and the Scarascia Mugnozza Genetic Resources Centre of the MS Swaminathan Research Foundation, among others.¹⁶⁰ WIPO has set up a portal linking to databases of traditional knowledge and genetic resources compiled by

¹⁵⁶ *ibid.*

¹⁵⁷ *ibid.*

¹⁵⁸ Soutik Biswas, "India Hits Back in 'Bio-Piracy' Battle." *BBC News* (December 7, 2005), http://news.bbc.co.uk/1/hi/world/south_asia/4506382.stm (accessed August 10, 2007).

¹⁵⁹ Nicolas Brahy, "The Contribution of Databases and Customary Law to the Protection of Traditional Knowledge," *International Social Science Journal* 58, no. 188 (June, 2006), 17-19.

¹⁶⁰ *ibid.*

member states and international organizations.¹⁶¹ The usefulness and appropriateness of such databases is still a subject of debate. (See below: 'Issues and Problems')

Rights management information (RMI), embedded into digital content, can identify the authors of works and any terms and conditions associated with the use of those works. Intended for use as part of copyright protection systems, adaptations have been explored that would be based around concepts associated with traditional knowledge rather than copyright. Jane Hunter of the University of Queensland has suggested several extensions to existing standards for rights management information that would allow the expression of communal or collective ownership, a perpetual term of rights, and the customary laws of the owners of the traditional knowledge, while also allowing payment of copyright fees or royalties to tribal owners and their descendents as appropriate.¹⁶² This adaptation of existing rights management systems could mitigate some concerns about digitizing traditional knowledge and making it publicly available. There are, however, concerns that such systems could also block legitimate access to works.

An alternative approach has been suggested that would promote the use of Creative Commons licenses on traditional knowledge. While no license specifically designed for traditional knowledge yet exists, Kansa, Schultz and Bissell have suggested the possibility of developing one. They suggest that a Creative Commons traditional knowledge license might:

- recognize community authorship of traditional knowledge,
- allow licensors to set requirements on how the work can be used so as to retain its cultural integrity,
- require users to report back to the community about the use of a work,
- require local-language translations of any follow-on works that make use of traditional knowledge,
- require that follow-on works be shared back to the community, or
- require the payment of royalties set by an international body.¹⁶³

Kansa, Schultz and Bissell feel that Creative Commons could therefore offer great benefits and options to traditional knowledge holders.

3. Regional Considerations

Dutfield suggests that attitudes towards the appropriation of traditional knowledge differ regionally. Whereas in Asia, Africa and Latin America, such misappropriation is a national concern; the nation or continent itself is viewed as the 'victim', "in the Americas, Australia and New Zealand, the victims are seen generally as indigenous

¹⁶¹ <http://www.wipo.int/tk/en/databases/tkportal/> (accessed June 7, 2007)

¹⁶² Jane Hunter, "Rights Markup Extensions for the Protection of Indigenous Knowledge" (Honolulu, Cover Pages: Online resource for markup language technologies, May 7-11, 2002), <http://www2002.org/CDROM/alternate/748/> (accessed May 16, 2007).

¹⁶³ Eric C. Kansa, Jason Schultz and Ahrash N. Bissell, "Protecting Traditional Knowledge and Expanding Access to Scientific Data: Juxtaposing Intellectual Property Agendas via a "Some Rights Reserved" Model," *International Journal of Cultural Property* 12, no. 03 (2005), 285-314, Draft version available at: http://archaeocommons.org/opencontent/IJCP%20Article%20FINAL_share.pdf (accessed June 11, 2007).

peoples who usually – though not always – represent minority populations.” According to Dutfield:

Some countries feel quite nationalistic about this issue and consider biopiracy as a manifestation of neocolonialism. For them, TK is national (or perhaps continental) knowledge, and while some of it may rightfully belong to minority groups, most of it does not. For the New World countries established by European settlers, TK belongs to certain discrete communities and falls outside the dominant culture. For them, dealing with this issue in forums like WIPO is, one presumes, a matter of doing the right thing by their indigenous groups, who they admit have been subjected to oppression in the past and continue to be marginalised.¹⁶⁴

There are also, according to Dutfield, regional differences related to the *types* of traditional knowledge that are prioritized. Whereas some countries, such as India or Africa, view biopiracy as being the most prominent concern,

In other parts of the world, folklore is treated as being more important. This appears to be the case for many Middle Eastern countries where biopiracy is not treated as a significant matter, but which have rich cultural traditions and whose economies may benefit significantly from the export of traditional products such as carpets (as with Iran), or where considerable economic activity may be generated locally and perhaps regionally from the recording, broadcasting and performance of intangible cultural expressions, especially music.¹⁶⁵

4. Gender Considerations

The gender dimensions of traditional knowledge have been little explored. One study, however, notes that traditional medicinal knowledge is “a highly gendered activity in most countries,” and that “maternal healthcare is often delivered by female traditional healers.”¹⁶⁶ The study also notes that there are “gender-based barriers that constrain women from gaining income from their TK (for example, barriers to inheritance and ownership of property).”¹⁶⁷ The importance of women’s involvement in traditional knowledge means that in policy decisions about traditional knowledge, in benefit-sharing agreements, and in the development of and training in systems of traditional knowledge protection, women and women’s interests must be included.

5. Issues and Problems

A number of issues outlined in the literature on traditional knowledge are important to highlight when considering the use of ICTs to protect traditional knowledge. First, as I will outline in more detail below, it has been noted that using databases to protect traditional knowledge could void traditional communities’ rights over the knowledge.

¹⁶⁴ Dutfield, *Protecting Traditional Knowledge and Folklore*, 26

¹⁶⁵ *ibid.*

¹⁶⁶ Heather Gibb, *Gender Dimensions of Intellectual Property and Traditional Medicinal Knowledge* (Colombo: UNDP Asia-Pacific Trade and Investment Initiative, 2007), 6, http://www.undprcc.lk/Publications/TRADE/Gender_IP_and_TKM_Final_27_Apr.pdf (accessed June 11, 2007).

¹⁶⁷ *ibid.*, 27

Second, it is not known to what extent the assembly of databases or digital libraries of traditional knowledge can actually protect such knowledge. Third, the creation of such databases could create repositories that would facilitate unauthorized use or commercialization of the traditional knowledge. Finally, although the use of Creative Commons licenses has been suggested as one way of overcoming some of these problems, this option comes with problems of its own.

First, a number of authors point to an important consequence of including traditional knowledge in databases: in some regions, such inclusion could rule out future patentability of the traditional knowledge by the community itself. As the Commission on Intellectual Property Rights notes, "it is crucial that the documentation process does not prejudice possible IPRs [intellectual property rights] in the material being documented."¹⁶⁸ Visser agrees:

[One] approach is to prevent the unauthorized (improper) acquisition of industrial property rights (especially patents) over traditional knowledge by documenting and publishing traditional knowledge as searchable prior art, should the holders of the traditional knowledge concerned want this. Once such knowledge becomes part of the prior art, that mere fact destroys the novelty of any invention based on such knowledge. Even if a patent is obtained, it may be revoked on this ground.¹⁶⁹

Second, Graham Dutfield questions the extent to which databases and libraries of traditional knowledge would be effective in protecting that knowledge from unauthorized patenting by third parties, especially Japan and Europe. He notes in a legal analysis that these databases may actually fail to legally undermine unauthorized patents on traditional knowledge, and that it would be very difficult to include all traditional knowledge in searchable databases.¹⁷⁰

Third, some researchers have argued that digital records of traditional knowledge may actually assist in the piracy of such knowledge. As Daniel Gervais notes, "documenting traditional knowledge is perceived by some as increasing the risk of unauthorized takings. Any database or inventory of traditional knowledge should thus be done with great care, notably so as not to facilitate misappropriation."¹⁷¹ For this reason, the Commission on Intellectual Property Rights noted that there are differences of opinion as to what type of data should be included in such databases, and whether information that was not yet publicly available in a codified form should be included.¹⁷² Carvalho suggests the use of database rights, which would protect data against unfair commercial use, to counter this problem.¹⁷³ Udgaonkar suggests that contract law and

¹⁶⁸ Commission on Intellectual Property Rights, *Integrating Intellectual Property Rights and Development Policy: Report of the Commission on Intellectual Property Rights*, 82

¹⁶⁹ Coenraad J. Visser, "Making Intellectual Property Laws Work for Traditional Knowledge" In *Poor People's Knowledge: Promoting Intellectual Property in Developing Countries*, eds. J. Michael Finger and Philip Schuler (Washington, DC: World Bank, 2004), 215.

¹⁷⁰ Dutfield, *Protecting Traditional Knowledge and Folklore*, 36-37; see also Sangeeta Udgaonkar, "The Recording of Traditional Knowledge: Will it Prevent 'Bio-Piracy'?" *Current Science* 82, no. 4 (2002), 416.

¹⁷¹ Gervais, *Traditional Knowledge & Intellectual Property: A TRIPS-Compatible Approach*, 164-165

¹⁷² Commission on Intellectual Property Rights, *Integrating Intellectual Property Rights and Development Policy: Report of the Commission on Intellectual Property Rights*, 82; see also Dutfield, *Protecting Traditional Knowledge and Folklore*, 37

¹⁷³ *ibid.*

confidentiality agreements be used to require users to agree to certain secrecy and benefit-sharing provisions as a condition of access to database.¹⁷⁴

Finally, there are a number of criticisms of the idea of using a Creative Commons-type license for traditional knowledge. First, Kansa, Schultz and Bissell acknowledge those who argue that “Creative Commons’ reliance on existing legal structures is inherently flawed, because its attempts to revitalize the public commons rely on the same oppressive (and even implicitly violent) legal structures that constrain culture and free expression.”¹⁷⁵ Further, Creative Commons licenses rely on the prior legal structure of copyright and therefore inherit the problems already discussed related to the applicability of copyright to traditional knowledge (see ‘Introduction’ above). Second, they note that “Creative Commons-supported individualistic goals may be at odds with other systems that place culture and expression within webs of social obligations, local systems of authority, rules and traditions, and political struggles.”¹⁷⁶ Third, enforcement of the licenses could pose a problem: “for countries where there are weak legal enforcement mechanisms, cultural heritage licenses may be perceived as worthless or too expensive to utilize.”¹⁷⁷

Nevertheless, it has been argued that this approach may present one way to “reconcile the aims of both traditional-knowledge protection and open-knowledge advocates,” two movements who often appear to be “heading in opposite directions on questions of opening or restricting access and use of certain kinds of knowledge.”¹⁷⁸ Initial research in this area has focussed on the cultural divide between protectors of traditional knowledge and advocates of the public domain. Research remains to be done on the legal implications of the Creative Commons approach to protecting traditional knowledge.¹⁷⁹

¹⁷⁴ Udgaonkar, *The Recording of Traditional Knowledge: Will it Prevent 'Bio-Piracy'?*, 413

¹⁷⁵ Kansa, Schultz and Bissell, *Protecting Traditional Knowledge and Expanding Access to Scientific Data: Juxtaposing Intellectual Property Agendas Via a “Some Rights Reserved” Model*, 298

¹⁷⁶ *ibid.*, 298

¹⁷⁷ *ibid.*, 306

¹⁷⁸ *ibid.*, 290

¹⁷⁹ See Kathy Bowrey, “Alternative Intellectual Property?: Indigenous Protocols, Copyleft and New Juridifications of Customary Practices,” *Macquarie Law Journal* 6 (2006), 65-95, <http://www.law.mq.edu.au/html/MqLJ/volume6/06Bowrey.pdf> (accessed June 11, 2007); Anupam Chander and Madhavi Sunder, “The Romance of the Public Domain,” *California Law Review* 92, no. 5 (2004), 1331-1374, <http://www.yale.edu/lawweb/jbalkin/telecom/chandlerandsundertheromanceofthepublicdomain.pdf> (accessed June 11, 2007); Kim Christen, “Gone Digital: Aboriginal Remix and the Cultural Commons,” *International Journal of Cultural Property* 12, no. 03 (2005), 315-345, <http://cooneycreative.com/kimberlychristen/wp-content/uploads/2006/12/gonedigital.pdf> (accessed June 11, 2007); Rosemary J. Coombe and Andrew Herman, “Rhetorical Virtues: Property, Speech, and the Commons on the World-Wide Web,” *Anthropological Quarterly* 77, no. 3 (2004), 559-574, http://www.yorku.ca/rcoombe/publications/Coombe_and_Herman_Rhetorical_Virtues.pdf (accessed June 11, 2007); Richard Jones and Euan Cameron, “Full Fat, Semi-Skimmed Or no Milk today—creative Commons Licences and English Folk Music,” *International Review of Law, Computers & Technology* 19, no. 3 (2005), 259-275; and Kansa, Schultz and Bissell, *Protecting Traditional Knowledge and Expanding Access to Scientific Data: Juxtaposing Intellectual Property Agendas Via a “Some Rights Reserved” Model*, 285-314.

6. Recommended Reading

- Dutfield, Graham. *Protecting Traditional Knowledge and Folklore*. Geneva: International Centre for Trade and Sustainable Development (ICTSD) and United Nations Conference on Trade and Development (UNCTAD), 2003, http://www.ictsd.org/pubs/ictsd_series/iprs/CS_dutfield.pdf (accessed May 30, 2007).
- Alexander, Merle, K. Chamundeeswari, Alphonse Kambu, Manuel Ruiz, and Brendan Tobin. *The Role of Registers and Databases in the Protection of Traditional Knowledge: A Comparative Analysis*. Tokyo: United Nations University Institute of Advanced Studies (UNU-IAS), 2003, http://www.ias.unu.edu/binaries/UNUIAS_TKRegistersReport.pdf (accessed June 1, 2007).
- Kansa, E. C., J. Schultz, and A. N. Bissell. "Protecting Traditional Knowledge and Expanding Access to Scientific Data: Juxtaposing Intellectual Property Agendas Via a "Some Rights Reserved" Model." *International Journal of Cultural Property* 12, no. 03 (2005): 285-314, Draft version available at: http://archaeocommons.org/opencontent/IJCP%20Article%20FINAL_share.pdf (accessed June 11, 2007).

6 Collective Management Organizations

1. Introduction

A copyright collective management organization administers copyright and related rights on behalf of groups of rights holders. For example, some collectives act on behalf of authors, granting permission to libraries and educational institutions to photocopy authors' works, and collecting and distributing royalties for that use. Others collect on behalf of composers, publishers, performers, or producers for the reproduction of musical works. Still others collect royalties for the use of television and radio programming in media monitoring activities, or from levies on the sale of blank audiovisual media. Collective management organizations are also referred to as 'copyright collectives' and 'collecting societies'.¹⁸⁰ Organizations dealing with reprographic (primarily photocopying) rights are also called 'reprographic rights organizations'.

As will be discussed below, many developing countries do not have collective management organizations, or have very few. However, various organizations and states provide assistance to collective management organizations that do exist in developing countries. For example, assistance is provided by the International Confederation of Societies of Authors and Composers (CISAC) to developing countries through "training, lobbying, surveillance of collections and distribution and rallying financial and administrative support from societies in the same region."¹⁸¹ WIPO and the International Federation of Reproduction Rights Organisations (IFRRO) also provide technical assistance to collective management organization in developing countries.¹⁸²

¹⁸⁰ 'Copyright collectives' are usually have a membership of individual rights-holders and sometimes also act as a type of union. 'Collecting societies' function more exclusively to collect royalties and tariffs, which are then often passed on to collecting societies for distribution to rights-holders.

¹⁸¹ International Confederation of Societies of Authors and Composers, *Annual Report 2006* (Paris: International Confederation of Societies of Authors and Composers, 2006), 7, [http://www.cisac.org/web/content.nsf/DocsByAlias/AG07-0537/\\$FILE/AG07-0537-CISAC-Annual-Report-2006_EN.pdf](http://www.cisac.org/web/content.nsf/DocsByAlias/AG07-0537/$FILE/AG07-0537-CISAC-Annual-Report-2006_EN.pdf) (accessed June 28, 2007).

¹⁸² <http://www.ifrro.org/show.aspx?pageid=activities/cooperation&culture=en> (accessed July 3, 2007)

2. Intersection with ICT4D

Collective management organizations are becoming more and more involved in the online and digital media environment as they begin to collect royalties on uses of digital media. Many actively attempt to influence policy in various areas that affect ICTs, advocating for collectively administered rights in digital downloading, online performance, digitization of works by libraries and other services, and digital delivery of works to users such as library patrons.

In the early 1990s the IFRRO began to lobby for the collective administration of digital works. As early as 1992 IFRRO was working to formulate methods of collective licensing in the electronic environment and to find methods of tracking the use of digital materials.¹⁸³ By 1999 IFRRO had formulated a set of principles for the international collective licensing of digital works.¹⁸⁴ IFRRO has been active in opposing the Google's attempts to make books searchable through their online Print Library Project and in advocating for the collective licensing the use of copyrighted works by search engines.¹⁸⁵ IFRRO has also put forward policies and recommendations regarding the collective licensing of the use of works in digital document delivery and the digitization and storage of works, including the 'retrodigitization' of back issues of journals and books.¹⁸⁶

IFRRO's general position is that copyright exceptions should be kept to a strict minimum, with exceptions being made only in exchange for remuneration: "Any statutory exemptions to the exclusive copyright rights (such as personal use, private use, fair dealing or fair use) should be minimal and, to the maximum extent possible, should not be equated with free use, but rather should be provided in return for remuneration."¹⁸⁷ (For example, the personal use exemption in Canada was provided in return for remuneration, as it was written into Canadian law along with a private copying levy, administered by a collecting society, intended to provide remuneration for the personal use of certain copyrighted works.)

¹⁸³ International Federation of Reproduction Rights Organisations and International Group of Scientific Technical and Medical Publishers (STM), *IFRRO - STM Joint Statement on Electronic Storage of STM Material* (Helsinki: International Federation of Reproduction Rights Organisations, 1992), 2, <http://www.ifrro.org/upload/images/1992-IFRRO-STM-Jointstatement.pdf> (accessed July 3, 2007).

¹⁸⁴ International Federation of Reproduction Rights Organisations, *IFRRO Position Paper on Issues of Territoriality for Digital Rights Management by RROs* (Amsterdam: International Federation of Reproduction Rights Organisations, 1999), 3, <http://www.ifrro.org/upload/images/Digital-DRM-TDM.pdf> (accessed June 28, 2007).

¹⁸⁵ International Federation of Reproduction Rights Organisations, *IFRRO Supports Lawsuits Against Google in the United States Raised by the Authors Guild and the Association of American Publishers* (Brussels: International Federation of Reproduction Rights Organisations, 2005), 1, <http://www.ifrro.org/upload/images/Googleresolution.pdf> (accessed June 28, 2007).

¹⁸⁶ International Federation of Reproduction Rights Organisations, *Principles for International Document Delivery* (Singapore: International Federation of Reproduction Rights Organisations, 2004), 3, http://www.ifrro.org/upload/images/document_delivery.pdf (accessed June 28, 2007); International Federation of Reproduction Rights Organisations and Authors' Coalition, *IFRRO Statement on the Digitisation of Printed Materials Supported by the Authors' Coalition* (Singapore: International Federation of Reproduction Rights Organisations, 2004), 2, http://www.ifrro.org/upload/images/ifrro_ac_joint_2004.pdf (accessed June 28, 2007); International Federation of Reproduction Rights Organisations, *Frankfurt Group Proposals on Retrodigitisation by Libraries and Publishers* (Singapore: International Federation of Reproduction Rights Organisations, 2004), 4, <http://www.ifrro.org/upload/images/retrodigitisation.pdf> (accessed June 28, 2007).

¹⁸⁷ International Federation of Reproduction Rights Organisations, *IFRRO Position Paper on Issues of Territoriality for Digital Rights Management by RROs*, 3

The 2006 Annual Report of the International Confederation of Societies of Authors and Composers (CISAC) notes that Creative Commons licenses are currently incompatible with collective licensing. Apparently CISAC has done some work towards finding ways of making the two compatible, but most collective management organizations still strongly oppose Creative Commons licensing.¹⁸⁸ This was evident at the CISAC-hosted Copyright Conference in 2007, where Lawrence Lessig, head of Creative Commons International, debated with the head of an Australian copyright collective. Andrew Orłowski reported on that conference, noting that those affiliated with copyright collectives “are keenly aware of this tradition of rights won through collective bargaining. Any weakening of this movement for authors’ rights is regarded in the same way as a striking union member regards a strikebreaker: as scab labour” who provides for free under Creative Commons licenses what copyright collectives have fought to receive compensation for.¹⁸⁹

3. Regional Considerations

While there are many different collective management organizations operating around the world in developed countries (there are over 30 operating in Canada, for example), developing countries have relatively few.¹⁹⁰ In 2001 Africa had only three reprographic rights organizations in South Africa, Zimbabwe, and Kenya.¹⁹¹ As of 2006, there were no collective management organizations in Pakistan, Macao, Bhutan, Nepal, Ethiopia, or Zanzibar.¹⁹²

4. Gender Considerations

There has been little written on collective management organizations from a gendered perspective. Ann Bartow’s work indicates, however, that a gendered look at the administration of copyright could lead to fruitful results. She argues that “the copyright infrastructure plays a role, largely unexamined by legal scholars, in helping to sustain the material and economic inequality between women and men.”¹⁹³ The inequality stems from the fact that women are underrepresented as content providers in various contexts, that “their works are published and distributed less often,” and that women’s works “are less frequently displayed in prestigious venues and are therefore less successful by many traditional measures.”¹⁹⁴ It might be interesting to examine whether these trends are reflected in the royalty distributions of collective management organizations, whether the distribution of collective royalties from digital uses continues this trend, or whether digital uses alters the situation for women in any way.

¹⁸⁸ In a recent notable exception, Dutch collecting society Buma/Stemra announced in August 2007 that they have entered into a partnership with Creative Commons Netherlands. The partnership will enable members of Buma/Stemra to use Creative Commons non-commercial licenses for non-commercial use of their works while Buma/Stemra collects royalties on commercial use of their works. <http://creativecommons.org/weblog/entry/7622> (accessed August 27, 2007)

¹⁸⁹ International Confederation of Societies of Authors and Composers, *Annual Report 2006*, 16; Andrew Orłowski, “Larry Lessig in the Lion’s Den,” *The Register* (May 31, 2007), http://www.theregister.co.uk/2007/05/31/lessig_vs_authors_cisac/ (accessed July 3, 2007).

¹⁹⁰ <http://www.cb-cda.gc.ca/societies/index-e.html> (accessed June 28, 2007)

¹⁹¹ Alan Story, Colin Darch and Debora Halbert, *The Copy/South Dossier: Issues in the Economics, Politics, and Ideology of Copyright in the Global South* (Canterbury, United Kingdom: The Copy/South Research Group, 2006), 41, <http://eprints.rclis.org/archive/00006278/01/CSdossier.pdf> (accessed June 26, 2007).

¹⁹² International Confederation of Societies of Authors and Composers, *Annual Report 2006*, 8

¹⁹³ Bartow, *Fair use and the Fairer Sex: Gender, Feminism, and Copyright Law*, 552

¹⁹⁴ *ibid.*, 561, 562

5. Issues and Problems

Views are strongly divided on the benefit of collective management organizations to developing countries. While WIPO and other copyright interests strongly support the development of collective management organizations in developing countries, the Commission on Intellectual Property Rights and the Copy/South Research Group point to a tremendous outflow of royalties they create from developing to developed countries.

According to the International Federation of Reproduction Rights Organisations, collective management organizations are important and beneficial to developing countries. They outlined their view at a 2005 meeting of WIPO's Permanent Committee on Cooperation for Development Related to Intellectual Property:

Copyright industries contribute significantly to GDP, generally 4%-6% in developed nations. They remain among the main growth areas and are also major contributors to the creation of new jobs. In several countries, these industries are growing at speeds substantially higher than those of other industries, and have over the past decades been the only sector showing a steady and unbroken growth in employment rates.¹⁹⁵

There are, however, various problems associated with collective management organizations in developing countries. Roger Wallis writes that:

In many former British colonies, local embryonic societies were started by the UK performing rights society with a prime aim of collecting revenue for UK works, not for establishing a local or an international market for domestic creations in the new independent nation. As such young societies have matured many have been plagued by claims of incompetence or even corruption.¹⁹⁶

Moreover, as Alan Story writes for the Commission on Intellectual Property Rights:

The experience of the South Africa RRO [reproduction rights organization], DALRO [the Dramatic, Artistic, and Literary Rights Organisation], is instructive. According to the latest available financial date posted on the DALRO website, DALRO distributed to national (i.e. South African) rights holders a total of EUR73,545.89 in reprographic (essentially photocopying) royalty fees during its 1999 financial year. By contrast, DALRO distributed a total of EUR136,523.07 to foreign RROs (and hence to foreign rightholders) in 1999. The main source of DALRO revenues was the educational sector, particularly universities and technikons. During the

¹⁹⁵ International Federation of Reproduction Rights Organisations, *PCIPD Intervention of IFRRO made at the 4th Session of WIPOs Permanent Committee on Cooperation for Development Related to Intellectual Property (PCIPD) 14-15 April 2005* (Geneva: International Federation of Reproduction Rights Organisations, 2005), 2, http://www.ifrro.org/upload/images/ifrro_intervention_pcipdWIPO14-15Apr05.pdf (accessed June 28, 2007).

¹⁹⁶ Roger Wallis, *Best Practice Cases in the Music Industry and their Relevance for Government Policies in Developing Countries*. (Geneva: WIPO-UNCTAD, 2001), 18, http://www.wipo.int/about-ip/en/studies/pdf/study_r_wallis.pdf (accessed June 26, 2007).

same period, DALRO received a total of EUR19,802.62 from other (i.e. non-South African) RROs for the reprographic copying done in these countries and presumably for distribution to S.A. rightholders. What these figures reveal is that distributions *from S.A. reprographic users* to foreign holders were *more than 2.5 times higher* than the total distributions made to South African rightholders by DALRO. As is well known, South Africa is a much richer country than any other in Africa and has a significantly larger and more robust publishing and education sector (the latter being the location of many authors.) But even here, as the above figures show, the RRO system leads to a highly unequal balance of payments to the advantage of richer countries and reinforces existing patterns of dependency. If a fully functioning and active RRO were to be established in any other African county, especially a least developed country, the financial inequality would be even greater; *such an African RRO would primarily become a royalty collector for foreign publishers and authors.*¹⁹⁷

Story and the Copy/South Research Group further argue that the payments sent outside the country by organizations like DALRO are increasing much faster than the payments distributed within South Africa, increasing the disparity between revenues collected by developing and developed countries by developing country collecting societies.¹⁹⁸ As collective management organizations enter more and more into the digital realm, which is similarly dominated by developed countries and developed-country content, this trend may be expected to continue.

6. Recommended Reading

- Story, Alan, Colin Darch, and Debora Halbert. "Reprographic Collecting Societies and their Projected Growth in the South." In *The Copy/South Dossier: Issues in the Economics, Politics, and Ideology of Copyright in the Global South*. Canterbury, United Kingdom: The Copy/South Research Group, 2006: 41-47, <http://eprints.rclis.org/archive/00006278/01/CSdossier.pdf> (accessed June 26, 2007).

¹⁹⁷ Story, *Study on Intellectual Property Rights, the Internet, and Copyright*, 53

¹⁹⁸ Story, Darch and Halbert, *The Copy/South Dossier: Issues in the Economics, Politics, and Ideology of Copyright in the Global South*, 44

7 Competition Policy

1. Introduction

The Intellectual Property Rights Commission has identified competition policy as an important counter-balance to intellectual property rights. They note that in developed countries, “pro-competitive regulation of IP rights and control of related restrictive business practices are key features of anti-trust legislation and these are regularly put into effect by the courts, competition authorities and by other relevant government agencies.”¹⁹⁹ Further, “a widely held view in the developed world is that the IP system can only function as intended if complemented by an effective framework for competition policy.”²⁰⁰

While competition law may be regularly put into effect in developed countries, the same is not true of developing countries. According to the Commission:

only about 50 developing countries and transition economies currently have so far adopted specific competition laws.... But the existence of legislation to address competition issues in a developing country does not mean that competent institutions, able to tackle complex IP-related issues effectively, will be in place.²⁰¹

Maskus and Lahouel write that, even where competition legislation is in place, competition authorities may have insufficient resources or mandate to carry out effective actions.²⁰² As such, the Commission recommends that “developed countries and international institutions that provide assistance for the development of IPR regimes in developing countries should provide such assistance in concert with the development of appropriate competition policies and institutions.”²⁰³

¹⁹⁹ Commission on Intellectual Property Rights, *Integrating Intellectual Property Rights and Development Policy: Report of the Commission on Intellectual Property Rights*, 148

²⁰⁰ *ibid.*, 149

²⁰¹ *ibid.*, 149

²⁰² Maskus and Lahouel, *Competition Policy and Intellectual Property Rights in Developing Countries*, 598

²⁰³ Commission on Intellectual Property Rights, *Integrating Intellectual Property Rights and Development Policy: Report of the Commission on Intellectual Property Rights*, 149

The *TRIPs Agreement* allows countries to set competition policies to limit abuse of intellectual property rights:

Article 40 of TRIPS provides considerable discretion to WTO member states in specifying license practices or conditions that may constitute an abuse of intellectual property rights.... Read broadly, the Article could cover any potential abuse of IPRs, including monopoly pricing, refusals to license, effectuating horizontal cartels through patent pooling, and exclusive vertical arrangements that forestall competition.²⁰⁴

2. Intersection with ICT4D

2.1. Competition Policy and ICT IP Pricing

One of the problems sometimes often associated with intellectual property rights is the fact that high prices, enabled by intellectual property “monopolies”, can sometimes place intellectual property products out of the price range of segments of the population.²⁰⁵ Overly high prices are seen, in a few countries, as a form of anti-competitive behaviour. For example, Shanker notes that the Brazilian and South African competition acts both include high or excessive pricing as a form of anti-competitive behaviour.²⁰⁶ Shanker’s work suggests that competition law in some developing countries could be used to help battle excessive prices for intellectual property products such as software and educational materials, computer hardware, and telecommunications equipment. It should be noted, however, that competition law, in most countries, is not used to regulate prices and that high prices, in and of themselves, are not normally of concern under competition law. Where such prices, however, can be shown to be predatory and intended to drive a competitor out of the market – usually where items are being sold below cost – there would be, in most countries, a more solid basis for a competition case.²⁰⁷

Maskus and Lahouel argue that licensing practices can also have implications for the prices of intellectual property products. According to them, “concerns also arise over

²⁰⁴ Maskus and Lahouel, *Competition Policy and Intellectual Property Rights in Developing Countries*, 602; Okediji believes that the TRIPS Article 40 is of limited utility to developing countries: see Okediji, *The International Copyright System: Limitations, Exceptions and Public Interest Considerations for Developing Countries*, 17-18

²⁰⁵ Although some writers discussed in this chapter use the term “intellectual property monopolies”, others would dispute the use of that term. According to the Canadian Competition Bureau, for example, intellectual property rights do not normally confer a monopoly: “The existence of a variety of effective substitutes for the IP and/or a high probability of entry by other players into the market (by “innovating around” or “leap-frogging over” any apparently entrenched position) would likely cause the Bureau to conclude that the IP has not conferred market power [a monopoly] on its owner.” Canadian Competition Bureau, *Intellectual Property Enforcement Guidelines* (Ottawa: Industry Canada, 2000), 6, <http://strategis.ic.gc.ca/pics/ct/ipege.pdf> (accessed August 24, 2007). American principles are similar: United States Department of Justice and Federal Trade Commission, *Antitrust Guidelines for the Licensing of Intellectual Property*, 1995), paragraph 2.0, <http://www.usdoj.gov/atr/public/guidelines/0558.htm> (accessed August 24, 2007). See also the American Supreme Court decision in *Illinois Tool Works Inc. v. Independent Ink, Inc.*, No. 04-1329 of March, 2006.

²⁰⁶ Daya Shanker, “Copyright, Competition Policy and Prevention of Monopolistic Abuses in the TRIPS Agreement.” In *Intellectual Property Rights and Communications in Asia: Conflicting Traditions*, eds. Pradip Thomas and Jan Servaes (New Delhi: Sage, 2006), 84.

²⁰⁷ In the case of Canada, see Canadian Competition Bureau, *Intellectual Property Enforcement Guidelines*, 9

agreements among licensors and licensees that require resale price maintenance of distributors' prices. Such agreements may be disguised price-fixing arrangements."²⁰⁸

The Open Society Institute is currently funding research into how competition policy might be used to improve access to learning materials in South Africa, where textbooks and other learning materials carry very high prices.

2.2. Competition Policy and ICT IP Licensing Refusal

Some intellectual property practices in the ICT arena could be particularly threatening to a competitive environment, such as refusing to license access to essential facilities to competitors, or attempts to squeeze local products out of the market by refusing to license software to local firms to sell at reasonable rates.

Shanker argues that an essential facility doctrine such as the one followed in the European Community can also be used to counter abuse of intellectual property rights, if such rights are used to refuse access to essential facilities, such as a service or a distribution system, to competitors. Such doctrine, Shanker argues, should therefore be included in national legislation to counter abuse of intellectual property monopolies:

The essential facility doctrine is thus ingrained in the EC competition law and developing countries should have no problem in formulating this doctrine either in their copyright laws or in their competition laws to deal with abuses arising out of such monopolies, particularly when copyright monopoly is used to restrict or block further innovation.

The essential facility doctrine...should be incorporated in WTO members' competition provisions along with clear examples to permit use of copyrighted products, if required, for further innovation and the progress of science.²⁰⁹

The refusal to license competing products' interoperability at reasonable rates can put developed country software companies at a disadvantage while inhibiting competition more generally. The refusal to license intellectual property rights can be considered, under competition law in some jurisdictions, an abuse of dominant market position.²¹⁰

2.3. Competition Policy and Tying

Tying or bundling products that might compete with developing-country software with other products, such as an operating system, can also be challenged under competition law. In one example, the sale of printers has been tied to the sale of printer cartridges. In this and similar cases, companies have attempted to use intellectual property law to prevent competing companies from providing competing products, such as compatible ink cartridges or ink (see inset next page).

²⁰⁸ Maskus and Lahouel, *Competition Policy and Intellectual Property Rights in Developing Countries*, 604

²⁰⁹ Shanker, *Copyright, Competition Policy and Prevention of Monopolistic Abuses in the TRIPS Agreement*, 90

²¹⁰ *ibid.*, 86

Tied licensing practices can squeeze developing-country software and other products out of the market. “This could happen through required tie-in sales and mandates that licensees may only use the licensor’s present and future technologies.”²¹¹ Such

licensing

problems are especially difficult for developing countries, not only because of the inequality created for developing country firms, but also because when developed country ICTs become “the operating standard in least developed countries, no forward internal economic linkages created are created...

All that results is the

establishment of a local sales office for a proprietary software company.”²¹³

“Hewlett-Packard (HP) has filed a formal complaint against the German subsidiary of Korean-based InkTec for violation of HP patents for ink formulations. Inks contained in the InkTec-branded “do-it-yourself” refill cartridge kits are claimed to violate HP ink patents. To protect these patents, HP has filed the complaint through the court system in Germany where the InkTec inks were found...The discovery of the challenged InkTec inks is the result of ongoing worldwide testing and enforcement efforts within the supplies unit of HP’s Imaging and Printing Group. Over the past year, the initiative has uncovered ink patent infringements by other companies that offer generic ink supplies through refilling stations or “private label” brands, said HP.”²¹²

2.4. Competition Policy and ICT IP Ownership

Abuse of intellectual property rights in ICTs can also occur through horizontal mergers, where, according to Maskus and Lahouel, attempts are made “to acquire market power beyond a firm’s own protected technology or product by purchasing rights to competing technologies and products. Such efforts effectively are horizontal mergers, which may be analysed in terms of their impact on current and future market concentration.”²¹⁴

Developing country ICT companies might be particularly vulnerable to this type of practice, which could affect not only developing country companies but also consumers.

2.5. Competition Policy and Parallel Imports

Parallel imports are products imported to a country without the permission of the intellectual property holder. They are often then sold for a price lower than those being sold in that country with the permission of the rights holder. The laws on parallel importation differ from country to country.

Restrictions under copyright law on parallel imports are considered by some countries to be “back-door attempts by industrial countries to close their markets through implicit non-tariff barriers.”²¹⁵ There are several reasons to support parallel imports:

Arguments favouring parallel trade begin with the view that restrictions on parallel imports amount to non-tariff barriers to goods that have legitimately escaped the control of IPRs owners. A second argument is that parallel imports can discipline abusive price discrimination and collusive behaviour based on private territorial restraints. The final

²¹¹ Maskus and Lahouel, *Competition Policy and Intellectual Property Rights in Developing Countries*, 604

²¹² <http://www.vnunet.com/crn/news/2168583/hp-files-ink-complaint> (accessed August 17, 2007)

²¹³ Story, *Study on Intellectual Property Rights, the Internet, and Copyright*, 25

²¹⁴ Maskus and Lahouel, *Competition Policy and Intellectual Property Rights in Developing Countries*, 605

²¹⁵ *ibid.*, 606

argument is that government enforcement of territorial rights invites rent-seeking on behalf of firms that claim to need relief from free-riding competitors but are actually interested in setting collusive prices.²¹⁶

On the other hand, restrictions on parallel imports are also argued to be beneficial to developing countries, as they may produce lower software and ICT prices while also ensuring market availability of ICT products:

Many arguments are made in favour of banning parallel imports. First, international price discrimination need not be harmful and under certain circumstances can raise economic welfare. Countries with small markets and elastic demand, typically developing economies, could face low prices under price discrimination. In the presence of parallel trade, foreign rights holders may choose not to supply such countries because local demand is insufficient under uniform pricing.²¹⁷

Given these opposing views, Maskus and Lahouel argue that, on balance, “the best advice seems simply to permit the *status quo ante* to continue, with each country or region setting its own policy.”²¹⁸

2.6. Competition Policy and Technological Protection Measures

Technological protection measures (TPMs), also known as digital rights management (DRM) technologies, raise competition policy concerns as well. A recent report from the Canadian Competition Bureau makes note of this problem:

One competition concern that can arise is that TPMs could limit interoperability such that only particular devices can function with the purchased product. Situations may arise where, in order to use a copy protected product, the consumer would also have to purchase a particular type of player or device, which might raise an instance of tying under the [Canadian Competition Act]. In addition, while the concept has not yet been employed by any Canadian courts, it is possible that TPMs that restrict access to, or use of, a legally-acquired copy of a work would be the basis for a “copyright misuses” claim. Lastly, to the extent that TPMs restrictions on the ability of a purchaser to access and use a legally acquired copy of a work are inconsistent with the advertised attributes of the work, this could form the basis for a misleading advertising charge pursuant to Section 52 of the [Canadian Competition Act].²¹⁹

²¹⁶ *ibid.*, 606

²¹⁷ *ibid.*, 606

²¹⁸ *ibid.*, 606

²¹⁹ Richard F. D. Corley, Navin Joneja and Prakash Narayanan, *The Competition / Intellectual Property Interface: Present Concerns and Future Challenges* (Ottawa: Competition Bureau, 2006), <http://www.competitionbureau.gc.ca/internet/index.cfm?itemID=2285&lg=e> (accessed June 22, 2007).

Additionally, Pamela Samuelson and Suzanne Scotchmer have observed that the legal protection of technological protection measures – laws that make it illegal to circumvent TPMs or to manufacture devices that circumvent TPMs – also have the effect of prohibiting reverse engineering, which often requires the circumvention of TPMs. TPMs, therefore, have the effect of discouraging reverse engineering, long accepted for its role in follow-on innovation and competition.²²⁰ (See Chapter 5, section 2.3, Reverse engineering.)

2.7. Competition Policy, Copyright Collectives, and ICTs

As discussed in Chapter 7, some countries' copyright law provides for the collective administration of copyright by collecting societies or copyright collectives. As Corley, Joneja and Narayanan discuss, the collective management of copyright protected works can create a form of monopoly power, reducing competition.²²¹ This could include monopoly power in the view of the users of works, who may have only one licensor to choose from, or in the view of the owners of works who may have no alternative to a single copyright collective for the administration of their rights.²²² This problem is somewhat mitigated by regulatory agencies who govern the rates charged by such societies. Several cases have emerged in Europe where collectives were found to be undertaking abusive practices under competition law.²²³

3. Regional Considerations

As noted above, only about 50 developing and transition countries had adopted competition laws by 2002.²²⁴ Most developing countries, because of the history of their economic structuring, only began to adopt competition policies in the 1990s. According to Singh:

The main reason why developing countries did not have a formal competition policy was that it was not needed. This is because there was considerable state control over economic activity and if the government thought there was anti-competitive behaviour by some corporations or industries, it intervened directly and fixed prices such as for medicines and other essential products. Besides, state-owned industry was enjoined not to charge monopoly prices.²²⁵

Some Asia-Pacific countries, including the developed countries in the region along with India, Pakistan, Sri Lanka, and Lebanon, have long had competition laws in place, although in the case of India, Pakistan and Sri Lanka implementation has been weak. Others, such as Taiwan, China, and Indonesia, only put competition laws in place in the

²²⁰ Samuelson and Scotchmer, *The Law and Economics of Reverse Engineering*, 1575-1663

²²¹ Corley, Joneja and Narayanan, *The Competition / Intellectual Property Interface: Present Concerns and Future Challenges*

²²² Martin Kretschmer, "The Failure of Property Rules in Collective Administration: Rethinking Copyright Societies as Regulatory Instruments," *European Intellectual Property Review*, no. 3 (2002), 126, http://www.cippm.org.uk/pdfs/kretschmer_eipr_032002.pdf (accessed July 3, 2007).

²²³ Shanker, *Copyright, Competition Policy and Prevention of Monopolistic Abuses in the TRIPS Agreement*, 87-88

²²⁴ Commission on Intellectual Property Rights, *Integrating Intellectual Property Rights and Development Policy: Report of the Commission on Intellectual Property Rights*, 149

²²⁵ Ajit Singh, *Competition and Competition Policy in Emerging Markets: International and Developmental Dimensions* (New York and Geneva: United Nations Conference on Trade and Development, 2002), 6, http://www.unctad.org/en/docs/gdsmdpbpg2418_en.pdf (accessed June 26, 2007).

1990s.²²⁶ The case is similar in Africa, where many countries, such as Botswana, Chad, Eritrea, Gambia, Guinea, Guinea-Bissau do not have competition laws in place. Others, such as Burkina Faso, Cote D'Ivoire, and Malawi, implemented such laws in the 1990s.²²⁷

4. Gender Considerations

There has been little or nothing written on the intersections between gender and competition law. This could be one area of interesting pursuit.

5. Issues and Problems

Although there has been an international emphasis on the importance of competition policies in battling various problems in intellectual property regime, some have argued that such a strategy should not be expected to be particularly effective. Story, Darch and Halbert take note of suggestions "that countries in the South should establish anti-competition and anti-trust measures and regimes as a key way to challenge copyright and IP monopolies." However, their position is that "the litigation and regulatory history from the North (e.g. the US and EU challenges to the Microsoft software monopoly) shows how weak and ineffective such a strategy usually is, especially in isolation."²²⁸

6. Recommended Reading

- Shanker, Daya. "Copyright, Competition Policy and Prevention of Monopolistic Abuses in the TRIPS Agreement." Chap. 5, In *Intellectual Property Rights and Communications in Asia: Conflicting Traditions*, edited by Pradip Thomas and Jan Servaes, 79-102. New Delhi: Sage, 2006.
- Maskus, Keith E. and M. Lahouel. "Competition Policy and Intellectual Property Rights in Developing Countries." *The World Economy* 23, no. 4 (2000): 595-611.

²²⁶ Pradeep S. Mehta, "Competition Policy in Developing Countries: An Asia-Pacific Perspective," *Bulletin on Asia-Pacific Perspectives* (2002/03), 80, 86, http://www.unescap.org/pdd/publications/bulletin2002/Bulletin02_full.pdf (accessed June 26, 2007).

²²⁷ <http://go.worldbank.org/RO7KKWQPZ0> (accessed June 26, 2007)

²²⁸ Story, Darch and Halbert, *The Copy/South Dossier: Issues in the Economics, Politics, and Ideology of Copyright in the Global South*, 163

8 Development Agenda

1. Introduction

In 2004 a group of developing countries, calling themselves the ‘Friends of Development’, submitted a proposal for the establishment of a development agenda at the World Intellectual Property Organization. As a result, a series of meetings between 2004 and 2007 were held at WIPO that led to agreement on a set of proposals to address developing countries’ needs within the WIPO system.

2. Intersection with ICT4D

The 45 proposals now agreed to be the proposed basis for the WIPO development agenda are categorized into six clusters:

- Cluster A: Technical Assistance and Capacity Building
- Cluster B: Norm-Setting, Flexibilities, Public Policy and Public Domain
- Cluster C: Technology Transfer, Information and Communication Technologies (ICT) and Access to Knowledge
- Cluster D: Assessment, Evaluation and Impact Studies
- Cluster E: Institutional Matters Including Mandate and Governance
- Cluster F: Other Issues²²⁹

A number of the proposals under these headings relate specifically to ICT4D. While the development agenda proposals are broad-ranging and deserve to be examined in greater depth than space permits here, I will highlight the most salient of the ICT4D-related proposals below.

2.1. Cluster A: Technical Assistance and Capacity Building

The 14 proposals under Cluster A relate to WIPO’s legislative and technical assistance programs. Under these programs, WIPO provides assistance such as training and

²²⁹ For the complete list of proposals, see World Intellectual Property Organization, *Provisional Report of the Provisional Committee on Proposals Related to a WIPO Development Agenda (PCDA)*. WIPO/PCDA/4/3 Prov. (Geneva: World Intellectual Property Organization, 2007), 31-35, http://www.wipo.int/edocs/mdocs/mdocs/en/pcda_4/pcda_4_3_prov.pdf (accessed August 8, 2007).

infrastructure to developing countries' intellectual property institutions (technical assistance) and legislative advice to governments working to put WIPO-treaty-compliant legislation in place (legislative assistance). The development agenda would see these programs become more demand-driven and transparent. This should allow outside organizations involved in ICT4D to better monitor the technical and legislative assistance provided by WIPO, especially with regard to the types of advice being provided to developing countries in many of the ICT4D-related areas outlined in this report. Such areas could include advice on the implementation of limitations and exceptions, on traditional knowledge, on collecting societies, or on competition policy – all areas in which WIPO has a basis of expertise. In particular, the proposed development agenda would see WIPO expand the assistance offered in several specific areas that affect ICT4D: competition policy and intellectual property, and the implementation of flexibilities in intellectual property treaties.

2.2. Cluster B: Norm-Setting, Flexibilities, Public Policy and Public Domain

The proposals under Cluster B relate to WIPO's general treaty-making practices. They are geared towards making such practices more inclusive of all stakeholders and more development-friendly. According to the proposals, treaty discussions would take into account the varying levels of development between countries, and would include discussion of special provisions for developing countries.

Specific topics related to ICT4D were also raised as requiring attention within WIPO's treaty-making processes. First, the development agenda would see WIPO initiate discussions on access to knowledge and technology. (See Chapter 10, "Access to Knowledge.") Second, the treaty-making discussions on traditional knowledge would be accelerated. (See Chapter 6, "Traditional Knowledge", above.) Third, the benefits of a rich and accessible public domain would be discussed. As is discussed in other sections of this report, each of these areas has important links to ICT4D. Related developments in WIPO's treaty-making activities should therefore be monitored closely.

2.3. Cluster C: Technology Transfer, Information and Communication Technologies (ICT) and Access to Knowledge

Items under Cluster C would see WIPO, in various ways, increase its focus on and efforts to encourage technology transfer to developing countries. WIPO would also mandate one of its committees to deal with technology transfer.

The development agenda would also see WIPO facilitate high-level discussions on IP-related aspects of ICTs. In full, the development agenda proposes to:

provide for, in an appropriate WIPO body, discussions focused on the importance of IP-related aspects of ICT, and its role in economic and cultural development, with specific attention focused on assisting Member States to identify practical IP-related strategies to use ICT for economic, social and cultural development.²³⁰

²³⁰ *ibid.*, 33

These discussions should be of particular interest to ICT4D organizations.

2.4. Cluster D: Assessment, Evaluation and Impact Studies

Cluster D proposals would have WIPO expand its studies and evaluations of the impact of its programs, and intellectual property in general, on development. Some of these studies and evaluations may relate specifically to ICTs. Moreover, WIPO would, under these proposals, conduct one particular study on the constraints intellectual property protection may place on informal economies and employment in those sectors. This study may relate to studies on piracy and the informal sector currently being considered by IDRC for joint *Acacia-PAN Asia* funding. WIPO would also, under these proposals, study experiences with open collaborative projects such as the Human Genome Project.

2.5. Cluster E: Institutional Matters Including Mandate and Governance

Cluster E contains a miscellany of proposals, two of which I will highlight as being important to ICT4D organizations. First, it is proposed that WIPO should ensure the wide participation of civil society at large in WIPO activities. Although this proposal does not change the current procedures for access to WIPO meetings and events, it should encourage the participation of ICT4D-related organizations at WIPO. Second, WIPO should improve in its efforts to find partners “to fund and execute projects for IP-related assistance.”²³¹ WIPO has been accused of working exclusively with a set of experts who closely share the organization’s ideology. This and related proposals, if they led to partnerships with ICT4D-related organizations and individuals outside WIPO’s usual sphere of experts, could help to expand and challenge current WIPO thinking and practices.

2.6. Cluster F: Other Issues

The final cluster deals with intellectual property enforcement. The development agenda proposes that such enforcement should contribute “to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations.”²³² Since a great deal of intellectual property infringement relates to ICTs, this emphasis on a balanced approach to enforcement could influence how intellectual property enforcement in the area of ICTs is approached by WIPO and member states. Indeed, how this proposal is interpreted – what enforcement that benefits both producers and users of technological knowledge would actually look like – could be an object of study.

3. Regional Considerations

The positions of the African and Asian groups were well aligned during the development agenda negotiations. Both African and Asian countries placed a strong emphasis on issues surrounding genetic resources, traditional knowledge and folklore.²³³ These issues are discussed above in Chapter 6. As well, least developed countries (LDCs) highlighted access to medicine and the *TRIPs Agreement* on public health,²³⁴ traditional

²³¹ *ibid.*, 35

²³² *ibid.*, 35

²³³ WIPO, WO/GA/31/15, Items 160 and 198.

²³⁴ WIPO IIM/1/6, Item 110.

knowledge,²³⁵ competition policy, the weakness of the institutional capacity of intellectual property systems and offices in LDCs²³⁶ and the resulting need for technical assistance, as being of particular importance.²³⁷ Several of these issues have been discussed above in Chapter 6 (Traditional Knowledge) and in Chapter 8 (Competition Policy).

4. Gender Considerations

The WIPO development agenda discussions did not include any proposals on gender or women. A number of the delegates, however, were women, including, in several cases, lead delegates.

While there has been no gender analysis of the WIPO development agenda, feminist examinations of international law in general offer several ways of approaching such issues. Hilary Charlesworth discusses various approaches to feminist international relations, noting that a liberal feminist approach might examine the participation of women in the negotiations; a cultural feminist approach might examine the styles of decision making prevalent in the negotiations and the gendered language and imagery of the proposals themselves; and a postmodern feminist analysis might attend to the gendered identities constituted and challenged in the proposals and the processes of negotiation of the development agenda.²³⁸

5. Issues and Problems

While many are optimistic about the development agenda developments, others are not. Assafa Endeshaw argues, for example, that developing countries should rid themselves of the fallacious notion that it is possible to sufficiently adjust the international intellectual property system to the needs of developing countries. The major international intellectual property conventions are not, and have never been, in the interest of developing countries, according to Endeshaw. He writes: "most of the present-day [developing countries] were co-opted into the major conventions without their consent (because they were colonies or unable to stand up to the pressures put on them by industrial powers)."²³⁹ Rather, argues Endeshaw, developing countries should aim for greater sovereignty over their own intellectual property laws. Alan Story makes similar arguments about the intellectual property system in general in his article "Burn Berne: Why the Leading International Intellectual Property Convention must be Repealed." There is, according to these and similar writers, no way to reform the major intellectual property conventions to meet the needs of developing countries.²⁴⁰

Some take a moderate approach, arguing that enormous, but not insurmountable, difficulties stand in the way of significant gains for developing countries in the

²³⁵ WIPO, PCIPD/4/3 Item 20.

²³⁶ WIPO, PCIPD/4/3 Item 20.

²³⁷ WIPO IIM/1/6, Item 110.

²³⁸ Hilary Charlesworth, "The Hidden Gender of International Law," *Temple International and Comparative Law Journal* 16, no. 1 (2002), 93-102, <http://www.temple.edu/iilpp/images/PDFs/charlesworthpub.pdf> (accessed August 13, 2007).

²³⁹ Assafa Endeshaw, "Intellectual Property and the 'WIPO Development Agenda'," *Journal of Information, Law & Technology*, no. 1 (2006), http://www2.warwick.ac.uk/fac/soc/law/elj/jilt/2006_1/endeshaw/endeshaw.pdf (accessed June 1, 2007).

²⁴⁰ Story, *Burn Berne: Why the Leading International Copyright Convention must be Repealed*, 763-803

international intellectual property system. Musungu and Dutfield, writing in 2003, argued that WIPO “is likely to continue to be wary of an influential developing country coalition which could trigger a forum shift to other multilateral fora or to regional and bilateral agreements.” Developing countries must therefore, they argue, “form a cross regional veto coalition among major developing countries” and increase coordination within and between developing countries on intellectual property domestic policy and activities at WIPO, the WTO, and other international intellectual-property related negotiations.²⁴¹

Optimists believe that the WIPO development agenda represents a tremendous show of international goodwill and a real step forward for developing countries on intellectual property issues. Sisule F. Musungu calls the development agenda “a quantum-leap for WIPO” representing results that “are clearly beyond the dreams of the initiators of the discussions.”²⁴² He writes:

It is becoming clear that the development agenda for WIPO has the potential to significantly transform the organization in major ways resulting in not only improvements in the attention paid to development issues and the composition of its staff but also to deliver the organisation into the 21st Century. For this reason, the development agenda is already a success. The challenge that remains is to build on this success and ensure that the opportunity is not squandered in implementation.²⁴³

6. Recommended Reading

- De Paranaguá-Moñiz, Pedro. "The Development Agenda for WIPO: Another Stillbirth? A Battle between Access to Knowledge and Enclosure." Master's Thesis, Queen Mary & Westfield College, University of London, 2005, <http://ssrn.com/abstract=844366> (accessed May 18, 2007).
- May, Christopher. *The World Intellectual Property Organization: Resurgence and the Development Agenda*. Abingdon, UK: Routledge, 2006.
- Menescal, Andréa Koury. "Changing WIPO'S Ways? the 2004 Development Agenda in Historical Perspective." *The Journal of World Intellectual Property* 8, no. 6 (2005): 761-796.

²⁴¹ Sisule F. Musungu and Graham Dutfield, *Multilateral Agreements and a TRIPS-Plus World: The World Intellectual Property Organisation (WIPO)* (Geneva: Quaker International Affairs Programme (QIAP), 2003), 21-22, http://www.iprsonline.org/ictsd/docs/WIPO_Musungu_Dutfield.pdf (accessed July 28, 2007). See also Peter Drahos, *Developing Countries and International Intellectual Property Standard Setting*, http://www.iprcommission.org/papers/pdfs/study_papers/sp8_drahos_study.pdf (accessed August 8, 2007), and Jerome Reichman, "Managing the Challenge of Globalized Intellectual Property Regime." (Bellagio, Second Bellagio Series of Dialogues, September 18 to 21, 2003), http://www.iprsonline.org/unctadictsd/bellagio/docs/Reichmann_Bellagio2.pdf (accessed August 8, 2007).

²⁴² Sisule F. Musungu, "WIPO Development Agenda - as the Dust Settles, Pondering what is in the Agenda, Whether it is Success Or Hot Air," <http://thoughtsincolours.blogspot.com> (accessed August 7, 2007).

²⁴³ *ibid.*

1. Introduction

In 2005 civil society groups drew on the momentum generated by the WIPO development agenda discussions to initiate work towards a new treaty on access to knowledge (A2K). Their ultimate intention was to consult with governments on their draft *Access to Knowledge Treaty* and to have an international treaty on access to knowledge adopted through WIPO or another forum such as UNESCO.

The *Treaty on Access to Knowledge* remains in draft form, a result of attempts to consolidate many issues that have been raised as areas of concern. As such, as one commentator noted, it “reads like the wish list of someone who has missed out the last three year's Christmas.”²⁴⁴

Efforts to include discussions of a treaty on access to knowledge as a part of the WIPO development agenda failed in June, 2007. WIPO member states, however, agreed at that time on a lesser proposal to further discuss “access to knowledge and technology” in general at WIPO.²⁴⁵

An access to knowledge social movement has sprung up around many of the issues that the draft treaty addresses. Organizations involved in this movement include civil rights organizations, consumer groups, free software groups, Internet advocacy groups, and groups involved in international development.

1.1 Access to Knowledge Predecessors: The Berne Appendix

Attempts to provide treaty provisions for developing countries on access to knowledge date back to the 1960s. In 1967 special provisions for developing countries, called the ‘Stockholm Protocol’, were added to the *Berne Convention*. These provided, first, that, if a copyright holder had not authorized publication of a translation of a work in a

²⁴⁴ Natali Helberger, “Report on Conference on Access to Knowledge, May 12-13, 2005, London,” Trans Atlantic Consumer Dialogue, <http://lists.essential.org/pipermail/a2k/2005-May/000403.html> (accessed August 14, 2007).

²⁴⁵ World Intellectual Property Organization, *Provisional Report of the Provisional Committee on Proposals Related to a WIPO Development Agenda (PCDA)*. WIPO/PCDA/4/3 Prov., 32

particular language within 10 years from the date of publication of the original work, the translation rights into that particular language would cease to exist. They also provided that, in cases where a copyright holder had not authorized (and would not authorize) publication of a local-language translation in a particular country within three years of the work's first publication, a 'competent authority' in said developing country could grant a non-exclusive compulsory license (with 'just compensation' to be provided to the copyright holder) for the publication of such a translation to other parties.²⁴⁶ These provisions were intended to allow developing countries to provide translations of works in local languages, should such translations not otherwise be provided by copyright-holders. Second, similar compulsory license provisions were made with regard to the publication of original-language works for "educational or cultural purposes."²⁴⁷ Third, the copyright-holders' rights to broadcast their work could be limited only to profit-making broadcasts; non-profit broadcasts could be made without the copyright-holder's permission or payment of fees.²⁴⁸ Finally, general compulsory licensing provisions were made for any use "exclusively for teaching, study and research in all fields of education". This provision went further than the second provision because it allowed compulsory licensing of all uses of a work – not simply publishing – and because the compensation required to be provided to foreign copyright-holders was less stringent.²⁴⁹

The 1967 protocol, however, was not mandatory; it was possible to ratify the 1967 *Berne Convention* but to abstain from the protocol itself. Indeed, it soon became clear that developed countries would not ratify the protocol. This situation led to a crisis in the international copyright system, with the potential for both developing and developed countries to leave the *Berne Convention* altogether.²⁵⁰ This crisis was overcome with a revision to the protocol in 1971, which most countries did ratify. However, the revised text was exceedingly complex and has been broadly assessed as being, in practical terms, of very limited use; few developing countries have availed themselves of its provisions.²⁵¹ In addition, the protocol has very little relevance in the digital realm. Nevertheless, as a result of the crisis leading and the 1971 revisions that resulted, "developing countries are more fully integrated into the Berne Union system than ever before."²⁵²

Alan Story argues that the solution is not, indeed, to attempt to alter the *Berne Convention*:

Rather than attempting to reform or amend Berne or further building on its creaking foundations or philosophy, as was done in the 1996 WIPO Copyright Treaty, what is required is the launch of a global movement to work for *the repeal of the Berne Convention* and the reconstruction of a

²⁴⁶ Sam Ricketson and Jane Ginsberg, *International Copyright and Neighbouring Rights: The Berne Convention and Beyond*, 2nd ed., Vol. 2 (London: Oxford University Press, 2005), 903.

²⁴⁷ *ibid.*, 906

²⁴⁸ *ibid.*, 907

²⁴⁹ *ibid.*, 907

²⁵⁰ *ibid.*, 913-914

²⁵¹ Consumers International, *Copyright and Access to Knowledge: Policy Recommendations on Flexibilities in Copyright Laws*, 25; Ricketson and Ginsberg, *International Copyright and Neighbouring Rights: The Berne Convention and Beyond*, 956-960

²⁵² *ibid.*, 960

new copyright convention that provides for the urgently needed access to and sharing of knowledge and that works for the benefit of the least developing and developing worlds where, it should never be forgotten, the majority of the world's peoples reside.²⁵³

The creation of a new treaty on access to and sharing of knowledge is exactly what the movement for a treaty on access to knowledge has attempted to do, although the draft treaty does not argue for a repeal of the *Berne Convention*. Story's critique of the *Access to Knowledge Treaty* efforts will be discussed below.

2. Intersection with ICT4D

The draft treaty contains twelve parts that cover a broad range of complex issues. While the draft *Access to Knowledge Treaty* warrants a more detailed analysis, I will highlight in the following sections several parts of the treaty that deal with issues relevant to ICT4D.

2.1. Part 3 of the draft *Access to Knowledge Treaty* – Provisions Regarding Limitations and Exceptions to Copyright and Related Rights

The draft treaty on access to knowledge attempts to encourage broad limitations and exceptions in intellectual property. First, it proposes a new interpretation of the three-step test, wherein "the extent to which the use benefits the larger public interest shall be taken into account...in determining whether applying any limitation or exception to exclusive rights to a particular use of a work would conflict with its normal exploitation or unreasonably prejudices the legitimate interests of the right holder."²⁵⁵ (See Chapter 5 for a preliminary discussion of the three-step test.)

The draft treaty also seeks to establish a set of minimum exceptions in copyright, arguing that copyright holders' rights should not extend over various types of uses commonly deemed to be fair use. In effect, this suggests a minimum set of exceptions. ICT-related uses included in the proposed set of minimum exceptions include:

"Google wants to scan around 20 million books from four major libraries and create a searchable database of their contents. This is so that researchers at universities, schoolchildren in libraries and anyone at home can quickly find titles which might be relevant to their work. Called Google Print, it is a bit like Amazon's feature that lets you search inside a book. Unlike Amazon, where you can then read a few pages from each book you find, Google will only give you enough detail to let you know that you have found what you are looking for. It is a great idea, and the resulting catalogue will rapidly become the starting place for researchers around the world. But it might not happen, because the project is currently stalled after three US authors sued Google for scanning their copyright material. The authors, with support from the US Authors Guild, call the project "a plain and brazen violation of copyright law" and argue that "it's not up to Google or anyone other than the authors, the rightful owners of these copyrights, to decide whether and how their works will be copied."²⁵⁴

²⁵³ Story, *Study on Intellectual Property Rights, the Internet, and Copyright*, 18

²⁵⁴ Bill Thompson, "Defending Google's Licence to Print." *BBC News* (October 10, 2005), <http://news.bbc.co.uk/1/hi/technology/4320642.stm> (accessed August 10, 2007).

²⁵⁵ "Draft Treaty on Access to Knowledge," CPTech, http://www.cptech.org/a2k/a2k_treaty_may9.pdf (accessed August 7, 2007).

- “The use of works in connection with legitimate reverse-engineering.”²⁵⁶
- “The use of works in connection with Internet search engines.”²⁵⁷ This exception would allow search engines make use of copyrighted works unless copyright holders had taken measures to prevent such use. (See inset, previous page, for a discussion of Google Print, a controversial case of a search engine making use of copyright works.)
- The use of works in connection with distance education.²⁵⁸
- The use of works by Internet Service Providers in “transmitting, routing or providing connections for material through a system or network.”²⁵⁹

It is further proposed that the legal prohibitions against the circumvention of technological protection measures not apply where such technologies “interfere with uses that are authorized by the right-holders or permitted by law.”²⁶⁰

The draft treaty also seeks to create a general exception for “developmental benefit”:

Parties to this treaty also shall implement a general exception to copyright law, applicable in special cases where the social, cultural, educational or other developmental benefit of a use outweigh the costs imposed by it on private parties [and providing for equitable remuneration to the copyright owner in appropriate circumstances.]²⁶¹

This exception would create broad leeway for developing countries to circumvent copyright holders’ rights in cases where the costs imposed by copyright holders were prohibitive. There are, however, significant legal problems with this general exception and with other minimum exceptions proposed as part of the draft treaty. (See section 5, below.)

Finally, the draft treaty would have countries agree that, since

the Appendix to the Berne Convention has been of limited benefit to developing countries, due to complex procedures, high transaction costs, limitations on exports and the limited scope of works and uses...a new protocol for access to copyrighted works in developing countries will be developed for compulsory licenses for copyrighted works.²⁶²

2.2. Part 4 of the draft *Access to Knowledge Treaty* – Patents

The draft treaty would have parties agree that patents not be granted for “programs for computers.”²⁶³ Further, “the use of a patented technique for a significant purpose of

²⁵⁶ *ibid.*

²⁵⁷ *ibid.*

²⁵⁸ *ibid.*

²⁵⁹ *ibid.*

²⁶⁰ *ibid.*

²⁶¹ *ibid.* Square brackets in the text indicate phrases that are not yet finalized or upon which agreement has not been reached.

²⁶² *ibid.*

²⁶³ *ibid.*

ensuring conversion of the conventions used in two different data processing systems so as to allow communication and exchange of data content between them” would not constitute a patent infringement.²⁶⁴ (See Chapter 4, Section 4.6: Software Patents, above)

2.3. Part 5 of the draft *Access to Knowledge Treaty* – Expanding and Enhancing the Knowledge Commons

The draft treaty would establish a ‘Knowledge Commons Committee’ “to promote cooperation and investment in databases, open access journals and other open knowledge projects to expand the knowledge commons.”²⁶⁵

2.4. Part 6 of the draft *Access to Knowledge Treaty* – Promotion of Open Standards

The draft treaty would also establish a “Committee on Open Standards” which would then establish a global Standards Development Organization. The new organization would promote and establish criteria for open standards.

2.5. Part 7 of the draft *Access to Knowledge Treaty* – Control of Anticompetitive Practices

Parties to the draft treaty would agree “to specify in their legislation licensing practices or conditions that in particular cases constitute an abuse of intellectual property rights having an adverse effect on competition in the relevant market.”²⁶⁶ A Committee on Control of Anticompetitive Practices would be established, which would publish and update a list of “software programs and interfaces that are essential for access to knowledge” as well as best practices related to promoting competition and access to essential software.²⁶⁷

2.6. Part 8 of the draft *Access to Knowledge Treaty* – Authors and Performers

Signatories would agree that “copyright and related rights-collection societies in developing countries that are not considered high or high middle income by the World Bank may disregard national treatment, and distribute income in disproportionate amounts to domestic authors, performers and creative communities.”²⁶⁸ (See Chapter 7, section 5: Issues and Problems.)

2.7. Part 9 of the draft *Access to Knowledge Treaty* – Transfer of Technology to Developing Countries

Signatories would also create a Committee on Technology Transfer to “survey members on the mechanisms that are most useful in the transfer of knowledge and technology to developing countries.”²⁶⁹

²⁶⁴ *ibid.*

²⁶⁵ *ibid.*

²⁶⁶ *ibid.*

²⁶⁷ *ibid.*

²⁶⁸ *ibid.*

²⁶⁹ *ibid.*

3. Regional Considerations

Experts from various regions were represented at the drafting meetings for the *Access to Knowledge Treaty*, including the United States, Serbia, South Africa, the United Kingdom, the Netherlands, Spain, Greece, Italy, Germany, Malaysia, France, India, Canada, Korea, Brazil, and Chile. Nevertheless, the treaty drafting process has been criticized because only a minority of the players were from developing countries, and because the general approach of the treaty is not based on the needs or priorities of the South. It does not address, for example, issues of traditional knowledge, which have been identified both in African and Asian countries as being of particular import.²⁷⁰

4. Gender Considerations

The draft *Access to Knowledge Treaty* does not address gender or women's issues specifically.²⁷¹ As noted in the previous chapter, however, any *Access to Knowledge Treaty* and efforts could be analysed from a number of gender and feminist perspectives in international relations.

5. Issues and Problems

While some are optimistic on where the development of a treaty on access to knowledge could lead, others see it as completely inadequate to the needs and demands of developing countries. Alan Story, Colin Darch, and Debora Halbert, for example, note that the draft *Access to Knowledge Treaty* was initiated and drafted by academics, legal experts, and civil society groups primarily based in developed countries. As such the approach was "often not derived from the actual on-the-ground access needs of the different users and different constituencies in the South."²⁷² They point to the "extreme paucity of research or discussion within the A2K group as to what such access needs actually are, particularly in the South," noting that the treaty focuses, for a large part, on access through the Internet while "many parts of the South, especially in the poorest countries, lack even rudimentary Internet access."²⁷³ Further, they note that "key access issues for the South, such as 'indigenous (or traditional) knowledge' and translation, are not even mentioned in the draft and others, such as distance learning and libraries, were dealt with as if the access situation under debate was that prevailing solely in Boston or Berlin."²⁷⁴

Story, Darch and Halbert also note that many elements of the draft *Access to Knowledge Treaty* would violate the three-step test of the *Berne Convention* and *TRIPs Agreement*, which would make many of the laws implementing such a treaty, should they ever be put in place, vulnerable to international legal challenge.²⁷⁵ According to the three-step test (see Chapter 5, section 1), any exceptions must be limited to "certain

²⁷⁰ Story, Darch and Halbert, *The Copy/South Dossier: Issues in the Economics, Politics, and Ideology of Copyright in the Global South*, 161-162

²⁷¹ IP-Justice, however, offers a line of women's clothing emblazoned with an 'Access to Knowledge' logo. <http://www.cafepress.com/ipj/1941969> (accessed August 14, 2007)

²⁷² *ibid.*, 162

²⁷³ *ibid.*, 162

²⁷⁴ *ibid.*, 162

²⁷⁵ *ibid.*, 163

special cases” that must not “conflict with a normal exploitation of the work” or “unreasonably prejudice the legitimate interests of the author.”²⁷⁶ It is doubtful whether many of the copyright exceptions provided under the draft treaty would be considered to meet these three criteria.²⁷⁷ The general exception for “developmental benefit” (see section 2.1, above) would be particularly vulnerable.

Peter Drahos, however, is among the optimists about the access to knowledge initiative: “Such a treaty,” he says, “would at least offer developing countries some longer term vision of their development interests, as well as an opportunity to build a coalition around the issue of knowledge and development.”²⁷⁸ As such, the development of a treaty could address the “lack of boldness of vision” that has plagued developing countries and led to negotiating failures within the international intellectual property system.²⁷⁹ He further notes that, although there are tremendous hurdles standing in the way of a treaty on access to knowledge for developing countries, there are various forms that such a treaty could take; a treaty based on a few general principles could rest upon principles that are already widely accepted; or a soft-law treaty outlining recommended practices could later be adapted into a treaty with binding standards.²⁸⁰

Alternative approaches to an international treaty on access to knowledge, such as the establishment of a right of access to ‘essential information’ have also been suggested. Zielinski defines ‘essential information’ as “information that is essential to human survival” such as “the things we need to know to survive, to be healthy, to plan the right seeds, to feed our families correctly” in his discussion of this possibility.²⁸¹

6. Recommended Reading

- Drahos, Peter. “Access to Knowledge: Time for a Treaty?” *Bridges* 9, (2005): 15-17, http://www.iprsonline.org/ictsd/docs/Drahos_AccessKnowledge_treaty_BRIDGE_S9-4.pdf (accessed August 9, 2007).
- Story, Alan, Colin Darch, and Debora Halbert. “The A2K (Access to Knowledge) treaty group.” In *The Copy/South Dossier: Issues in the Economics, Politics, and Ideology of Copyright in the Global South*, 161-164. Canterbury, United Kingdom: The Copy/South Research Group, 2006, <http://eprints.rclis.org/archive/00006278/01/CSdossier.pdf> (accessed June 26, 2007).

²⁷⁶ World Intellectual Property Organization, *The Berne Convention for the Protection of Literary and Artistic Works. Paris Act of July 24, 1971, as Amended on September 28, 1979*, Article 9(2); World Trade Organization, *Final Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations, Annex IC: Agreement on Trade-Related Aspects of Intellectual Property Rights*, Article 13; World Intellectual Property Organization, *WIPO Copyright Treaty, Adopted in Geneva on December 20, 1996*, Article 10; World Intellectual Property Organization, *WIPO Performances and Phonograms Treaty, Adopted in Geneva on December 20, 1996*, Article 16

²⁷⁷ Story, Darch and Halbert, *The Copy/South Dossier: Issues in the Economics, Politics, and Ideology of Copyright in the Global South*, 163

²⁷⁸ Peter Drahos, “Access to Knowledge: Time for a Treaty?” *Bridges* 9 (2005), 16, http://www.iprsonline.org/ictsd/docs/Drahos_AccessKnowledge_treaty_BRIDGES9-4.pdf (accessed August 9, 2007).

²⁷⁹ *ibid.*, 15

²⁸⁰ *ibid.*, 16

²⁸¹ Chris Zielinski, *An Access Right to Essential Information*, http://bibliotecavirtual.clacso.org.ar/ar/libros/raec/ethicomp5/docs/htm_papers/69Zielinski,%20Chris.htm (accessed August 9, 2007).

10 Conclusion

There are a number of areas in intellectual property and ICT4D that stand out as being ripe for further study. I will mention a few that have arisen in the course of this review, beginning with areas closely related to IDRC's ICT4D niche and proceeding to discuss areas that currently fall outside that niche.

1. Areas for further study within IDRC's current ICT4D niche

The benefits of and difficulties posed by **open access** publishing in developing countries, as well as the state of open access publishing in various developing countries, have received healthy amounts of attention in academic literature. Regional and gender differences in use of and attitudes towards open access publishing can be observed, but the reasons for such discrepancies have not yet been explored. The actual effect that open access publishing may be having on the North-South, South-North, or South-South knowledge gaps has yet to be measured.

The benefits and problems posed by **Creative Commons** licensing in developing countries have received some attention, although not the extent that open access has. There has been little study of the use of Creative Commons licenses in developing countries or their actual development impact, although projects related to this may emerge in the near future, perhaps with funding from IDRC. There has been little examination of Creative Commons licensing from a gender perspective. Further, although critiques of the Creative Commons approach have emerged, there is little critique from specifically developing country perspectives. In particular, there has been little examination of the cultural fit of Creative Commons licenses in various developing countries and the applicability and appropriateness of such licenses in light of local attitudes and practices in various sectors.

Free and Open Source Software has been pointed to as being a potential solution to problems of localization. The ability of FOSS to contribute to local economies, encourage the development of local skills and businesses, and create useful forms of independence, is open to further empirical study.

Developing country policies on **copyright exceptions and limitations** have received a good deal of attention over many years, and recommended policies for developing countries have been formulated by various parties. Consumers International's study of limitations and exceptions in the Asia-Pacific region may soon have counterparts in Africa. However, although the Commission on Intellectual Property Rights recommended that developing countries permit reverse engineering of computer software, there has been almost no study of this as a potential strategy for developing countries in general or in relation to software localization in particular. Further, the specific problem of contractual overrideability of copyright exceptions has not been addressed in the context of developing countries. A specific focus on ICT-related exceptions and limitations and their relationship to the economic and cultural realities of developing countries, as well as to the health of ICT industries in developing countries, could prove helpful. Finally, as is the case in many areas of intellectual property, copyright limitations and exceptions have not been examined from a gender perspective.

A number of potential problems with the use of databases to protect **traditional knowledge** have been noted by researchers; there is room for further study on the actual effectiveness of these databases in practice. Initial ideas on the possibility of using Creative Commons-style licenses to protect traditional knowledge could be further explored, although significant problems have been noted with this approach. The same is true of potential use of rights management information in the protection of traditional knowledge. Research in these areas may prove particularly important if the discussions of a treaty on traditional knowledge are accelerated, as proposed in the development agenda discussions at WIPO.

2. Areas for further study outside of IDRC's current ICT4D niche

Research could help to answer questions raised by the strongly divided views on the benefits that **collective management organizations** may or may not provide to developing countries. The contentious relationship between collective management organizations and Creative Commons would also be interesting to explore, taking into account criticisms of the Creative Commons approach. Finally, research might provide insight into the gendered distributions of benefits from collective management organizations, especially in the digital realm.

The current state of **competition policy** in developing countries and its potential use in combating high or predatory prices for intellectual property products, refusals to license intellectual property rights, tying, market concentration, and other competition-related problems is an area that appears to have received a great deal of recent policy attention at WIPO, creating a need for further research.²⁸² However, some have argued that a strategy focused on competition policy would not be particularly fruitful for developing countries.²⁸³

²⁸² World Intellectual Property Organization, *Provisional Report of the Provisional Committee on Proposals Related to a WIPO Development Agenda (PCDA)*. WIPO/PCDA/4/3 Prov.

²⁸³ Story, Darch and Halbert, *The Copy/South Dossier: Issues in the Economics, Politics, and Ideology of Copyright in the Global South*, 163

The proposed **development agenda** for WIPO has raised a wide variety of matters related to ICT4D that may become foci of policy work in coming years. It will be important for researchers to monitor developments, contribute to discussions on the implementation of many of the development agenda proposals, and to study their implementation. Specific discussions at WIPO on intellectual-related aspects of ICTs have been proposed and research would certainly contribute greatly to these discussions.²⁸⁴ A gender analysis of the development agenda might also prove interesting.

The **draft *Treaty on Access to Knowledge***, like the development agenda for WIPO, has raised a wide variety of issues, many of which are worthy of further research. While the treaty has been in draft form for a number of years and is not expected to go forward in the imminent future, researchers should be able to make significant contributions to general discussions of access to knowledge and technology that have been proposed at WIPO.

²⁸⁴ World Intellectual Property Organization, *Provisional Report of the Provisional Committee on Proposals Related to a WIPO Development Agenda (PCDA)*. WIPO/PCDA/4/3 Prov., 33

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