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Knowledge and Education: Pro-access Implications of New Technologies

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Chapter 7
Knowledge and education
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Introduction

The framework of 'Knowledge and Education' is broad, and overlaps with various areas of intellectual property (IP). Copyright is the dominant legal and policy regime governing this domain. As discussed in other chapters of the book, access to know-ledge and education is also circumscribed by such concerns as the expanding scope of patents and its impact on basic research and research tools, public access to patent disclosure information, protection of traditional knowledge, general systems of access and distribution of information, and particular access issues for disabled persons. While Chapter 6 has extensively discussed the implications of copyright law and exceptions on access to textbooks in developing countries, this chapter focuses on implications of new technologies – especially information and communication technologies (ICTs) – on access to information products. In discussing some recent legislative trends, it looks at pro-access strategies by developing countries and civil society organizations (CSOs) relating to knowledge and education.

According to utilitarian theory, copyright is an incentive system which encourages the creation and dissemination of ideas and information products as widely as possible, by giving a creator/author an exclusive right, for a limited (but long) period, to control reproduction by third parties of the form in which the idea is expressed. That grant is meant to be balanced by limitations and exceptions, especially the right of reproduction and distribution for educational purposes. In particular it is important to remember that while copyright is ostensibly an incentive system for authors or creators, it has in practice been a system that primarily benefits intermediaries such as publishers and distributors. Changes in the nature of copyright subject matter, from analogue to digital, have presented significant opportunities for greater access as well as greater restrictions. One of the most significant developments in this arena is the impact of technology on the behaviour of creators, producers or distributors and end-users. The response to such developments significantly drives the scenario planning of actors in this field.

As discussed in Chapter 1, a distinction has to be made between the access to mere information and the accumulation of knowledge. True 'access to knowledge' requires the nurturing of human capabilities and appropriate contexts for the transformation of information into knowledge. Movements towards access to knowledge (A2K) ultimately need to go beyond discussions on access to information goods and related copyright issues, to consider many areas of human development. Among other things, they need to take on board how access to education by stakeholders is circumscribed by inequalities relating to gender, social classes, ethnic groups and geographical areas.

A number of provisions in international human rights instruments govern access to information and education. These include, for example, the right to education which embraces

the right to access educational materials;[2] the right to seek, receive and impart information as part of the right to freedom of expression;[3] and the right to the enjoyment of the benefits of scientific progress and its applications (see Ovett 2006a, p. 7). The latter is enshrined in Article 15(1)(b) of the International Covenant on Economic, Social and Cultural Rights (ICESCR), and is the subject of significant scrutiny (Chapman 2002). Of further relevance is the 'right to take part in cultural life' reflected in Article 15(1)(a) of the ICESCR.[4] The Committee on Economic, Social and Cultural Rights (CESCR) recently published General Comment No. 21 on Article 15(1)(a) in an effort towards clarifying the nature of this right (see discussion in Chapter 8).[5]

1. Technology, education and copyright

One of the most significant drivers of better educational outcomes in developing countries is access to textbooks and other instructional materials (Askerud 1997, p. 3). As highlighted in Chapter 6, the price of textbooks can be exceptionally high relative to per capita income in developing countries. The latter chapter discusses distributive structures and aspects of copyright law which impede access to textbooks in developing countries, while focusing on exceptions and/or limitations for illustrative teaching. It argues convincingly that such exceptions and/or limitations should be construed as broadly as possible to enhance capabilities for education. This chapter does not repeat the main arguments in Chapter 6, but focuses on pro-access opportunities presented by new technologies, including digital technology, for educational sectors (at all levels), as well as libraries. These opportunities are especially significant in addressing major elements limiting access for developing countries including: cost of production of learning materials and knowledge products; high price of textbooks relative to per capita income; cost and capacity of distribution of learning materials and knowledge products; and maintenance and updating of learning materials and knowledge products. While not a panacea, the use of ICTs has the potential, along with the expansion of digital and Internet content, to reduce some of the problems of poverty and price such as insufficient storage and transport facilities and the absence of conservation practices for books (ibid., p. 4).

At the same time, we should not lose sight of the existing difficulties of access to ICTs in developing countries. Developing countries still lag significantly behind developed countries in this respect, and that gap may be growing (see United Nations Conference on Trade and Development [UNCTAD] 2004a, p. 96). Much of the growth in ICT access among developing countries is attributable to Brazil, China and India (see UNCTAD 2004b, p. 2). South–South gaps could become more pronounced, as some countries make the necessary investment and others fail to do so. Bandwidth, for example, still remains a serious constraint across much of Africa, although this concern may to some extent be allayed by the liberalization of telecommunications and the increasing dominance of cell phone networks.

Concerted public investment in ICT infrastructure is thus a necessary precondition for developing countries to take advantage of digital and Internet content for the education and library sectors.[6] Greater telecommunications deregulation is likely to lead to lower costs of Internet access in particular regions over the coming years. Asia is taking the lead in this regard, with Latin America following closely behind. New infrastructural projects, such as the East African Submarine Cable System (EASSy),[7] are creating the backbone for Internet to develop further in the Indian Ocean area, facilitating stronger and more direct connections between

Africa and Asia. Telecommunications deregulation has also led to the explosion of mobile telephony, and now mobile Internet, in developing countries. While the digital divide between North and South may not disappear, absolute inability to access the Internet will become more rare. The nature and scope of access to content will therefore become increasingly important.

The practical structure of copyright has meanwhile favoured for-profit models of knowledge dissemination even in the field of education. The emphasis has been on ensuring the profits and return on investment of the intermediaries rather than on meeting the needs of authors or creators and end-users. This model has persisted despite significant doubts raised by some stakeholders on the necessity for strong profit-driven copyright standards to provide incentives for the production of educational and research materials. Many academics produce research, for example, not because of the profits that might be earned through royalties but because of the reputational value or potential social impact in being widely read and disseminated. This is discussed further in Box 7.1 where the implications of new digital technology on power relations between creators, producers and distributors of information products are explored.

Indeed, there is some consensus in the education arena that copyright holders ought to have less expectation of significant profits, notwithstanding the historical emphasis on for-profit production and distribution of knowledge goods. To fulfil and expand their role in advancing

Box 7.1. Changing power structures: Creators, producers and distributors

Digital and Internet content has the potential to reshape the relationship between creators, commercial producers and distributors. Lowered production costs make creators less dependent on the capital traditionally provided by producers. In publishing, this means that those authors who are not primarily motivated by profits may have more leeway in disseminating their work for free or at lower costs to readers. Furthermore, as Landes and Posner (1989, p. 331) observe of non-pecuniary benefits to authors:

> Many authors derive substantial benefits from publication that are over and beyond any royalties. This is true not only in terms of prestige and other non-pecuniary income but also pecuniary income in such forms as a higher salary for a professor who publishes than for one who does not, or greater consulting income. Publishing is an effective method of self-advertisement and self-promotion. The norms against plagiarism (i.e. against copying without giving the author credit) reinforce the conferral of prestige by publishing; to the extent that those norms are effective, they ensure that the author will obtain recognition, if not always royalties, from the works he publishes.

At the same time, there remains a question of fair returns to compensate writers. While academic writers may be motivated to contribute some of their works without expectation of pecuniary return (e.g. academic authors are usually not compensated for journal articles, in contrast to receiving some royalties for textbooks), they may find it exploitative that publishers reap substantial returns from the distribution of their works. More importantly, the opportunity to publish with a mainstream publisher may come with the not uncommon condition of copyright assignment to the publisher. This copyright assignment may impose serious constraints on the author's ability to circulate (or authorize reproduction or translation of) the work, and to engage in transformation of the work for future publications. A lot depends on the contractual agreement between the author and the publisher, and the bargaining positions are often unequal (see Chapter 8).

The vast number of customers on the Internet has meanwhile expanded the size of the market for almost all knowledge products, eliminating the need to spend huge marketing costs for slices of the same domestic pie or limited space at traditional media outlets. The Internet allows more self-distribution by creators and cheaper production costs. This is increasingly evident in the academic publishing market as more and more academic and other writers are finding it expedient to self-distribute or to distribute through online outlets that provide free or low cost access. In particular, the options and incentives for educators to bypass traditional publishers are increased through digital and Internet production (and distribution). Several initiatives exist to increase such open access publishing, including, for example, the Public Library of Science (PLOS)[8] and the Social Science Research Network (SSRN).[9] While the latter database does not currently have a quality control or peer review system, open access need not entail the absence of either. There is much room for exploring open access repositories with a peer review mechanism for quality control, as the key present challenge in users' access to the vast material available on the Internet lies in separating useful and accurate material out from other information. There are also initiatives which combine traditional publishing and online dissemination.

Meanwhile, there is a real opportunity for artists to regain control of their materials and to have access to global markets and distribution channels (see Andersen, Kozul-Wright & Kozul-Wright 2000, p. 9).[10] Direct 'artist-to-consumer' transactions have become increasingly possible. Such a transition is furthered by the development of Creative Commons licences (distributed through the various national Creative Commons projects).[11] These projects leverage the increasing divergence among creators, producers and distributors in positive ways to increase access, and should be supported through appropriate policy measures at the national level.

human development policy, educational institutions and libraries must be empowered to communicate information to students and other users. An access to education policy must cover all educational uses of materials protected by copyright and related rights. A challenge for educators and others who provide the raw materials for education is how to expand the impact of existing tools and the use of new products, new distribution methods and new pedagogical systems to reach more users, including students. At the same time, it is important to view users not simply as passive recipients of information products, but rather as agents who actively search for relevant information and knowledge tools towards improving their capabilities. This is consistent with the capability approach in the human development paradigm described in Chapter 1 of this book. Under this approach, it is not mere access to information products that matters in human development, but what users are ultimately able to do in translating that access into improvements in their capabilities, including those capabilities related to education.

2. Pro-access implications of information technology on knowledge and education

This section details some pro-access trends in the knowledge and education arena, as catalysed by new information technologies. It looks at changes in production methods of information products, including educational materials (Section 2.1), developments in user access mechanisms (Section 2.2) and changes in modes of distribution (Section 2.3).

2.1. Changes in production methods of primary source materials and the introduction of new products

The next few years should see an explosion in open source production methods, particularly in developing countries. Open source production essentially relies on a distributed set of contributors all working on a project (to which the source code is freely available) and providing their input for free, on the condition that all such inputs and further uses of such inputs are licensed on the same basis of free use and free access. Open source methods rely on either copyright or patent rights to enforce a licensing structure that maintains the open nature of the software. There are several kinds of licences available to developers wishing to make software available to others under the free and open source software development models, the most common free software licence being the GNU 'General Public License' (GPL) for software (see also Chapter 3, Box 3.3).[12]

The most attractive features of free and open source content development approaches may be that they require little or no additional legislation or international agreements to implement. They operate as an alternative to copyright while using copyright to enforce their openness as can be seen in the GPL. In the coming years, we should witness trends such as: (1) greater use of free and open source software, (2) greater use and enforcement of free and open source licences and (3) the incentivization of open access approaches to production and dissemination of knowledge in the scientific and education arena through leveraging government funding (while disallowing the privatization and exclusive appropriation of materials produced with such funding).

Meanwhile, new types of products such as digital books and online curricular materials have emerged with significant impact on the availability of educational materials. Textbooks are a subset of the larger book publishing market which has undergone a significant shift in the way in which texts are produced. Almost all texts are now created on word processors on computers and e-mailed among authors, their colleagues and their publishers. Before a text is printed in paper form it now exists as an electronic document, formatted and ready to print. The e-mailing and Internet transmission or downloading of such texts addresses a major bottleneck of distribution to developing countries and, where access exists, can transform the costs of delivery and distribution of texts. A major project producing such texts on an open source model is Project Gutenberg.[13] It contains over 20,000 high-quality free electronic texts that are in the public domain in the United States (US), made available by a globally distributed set of volunteers.[14]

Digitization of books is a difficult and costly process but a crucial one. The institutions best positioned to do such digitization, namely libraries, are constrained by copyright restrictions, while the copyright owners, usually publishers, often do not find it sufficiently in their interest to sell digital copies of their texts. In the meantime an opportunity for greater access and distribution is lost. Additional policy work on these issues is needed and is being conducted by organizations such as the American Library Association, the International Federation of Library Associations (IFLA) and Electronic Information for Libraries (eIFL). However, few organizations exist in developing countries to undertake such activities and the technology costs remain prohibitive. To increase the presence of such texts, initiatives will have to be pursued in

developed countries for digitization and production of digital books. Commercial publishers are not able to fulfil this role adequately, and libraries should be supported in their pursuit of this goal. One caveat to note is the Google Books project, the largest digitization project ongoing at the moment, in collaboration with libraries and publishers. Although controversial, it has succeeded in pushing the publishing industry into the digital age, while ensuring that out-of-print works of authors are also given new life on the Web (Helft & Rich 2008; see discussion in Chapters 8 and 9).

We should also see the expansion of online curricular materials in terms of Open Courseware programmes, where educational institutions and their faculty members make their courses and teaching materials available for free over the Internet. An example of this is the 'Open Courseware' initiative at the Massachusetts Institute of Technology (MIT)[15] which provides a global commons from which educators can draw. These courses provide syllabi, teaching tools, transcripts and videos of lectures, some of them given by leading scholars in their field. Such resources are especially useful in the natural sciences where access to the most up-to-date concepts, methods and approaches has historically been difficult for educators and students living on the global periphery. These resources are available at both the secondary school and tertiary levels.

2.2. Changes in modes of accessing information: Digital content, new devices and new pedagogies

Students, teachers, librarians and other researchers are beginning to access a significant portion of the information they use from the Internet. This trend has become increasingly evident in educational institutions and libraries in industrialized countries, and is likely to spread to other contexts including developing countries. In fact, given new initiatives to increase access to ICTs, there are some suggestions that many developing country institutions may simply leapfrog past the hard-copy stage of information dissemination. Digitization is a contributing factor. For the moment, digitized information is dominated by commercially profitable works rather than by those for which publishers have few or no markets or those that are in the public domain. The challenge is to ensure that works that have fallen into the public domain are digitized, as well as out-of-print and so called orphan works. Alongside initiatives such as Google Books, new modes and incentives will have to be found to encourage the digitization of such works.

Another development is the advent of new devices that approximate the complexity and capacity of the general-purpose computer. This is accompanied by the spread of mobile phones and their expanding capacity to receive and send information in addition to voice data. What is becoming increasingly evident is that developing country markets are no longer simply dumping grounds for obsolete technologies but are becoming the primary growth markets for new devices with multiple functionalities. Consumers, many of whom are young people, are creating the demand for and experimenting with new and innovative uses of mobile devices for accessing and sharing information. It has to be qualified, however, that while this applies in many developed countries and developing ones such as India, China and Brazil, it is not necessarily the case in least developed countries (LDCs) and many countries, for example, in Africa.

We may also begin to see the expansion of distance learning, another area where the benefits of Internet and digital content are unmistakable, especially as it becomes possible to get

larger amounts of content into smaller and smaller devices. However, cost per student remains a significant barrier to expanding access through such programmes (UNCTAD 2004b, p. 112). Quality assurance is a further issue which must be tackled in respect of distance education. Concerted distance education strategies at the national level are hard to find, although discussions in forums such as WIPO have focused on distance learning as the exemplar of why exceptions and limitations to copyright provisions at the international level need to be updated and made mandatory. There is discussion of placing an exception for distance learning explicitly in the text of any new IP-related treaties, including a potential Access to Knowledge (A2K) Treaty that would enshrine such exceptions and limitations in international law. In the norm-setting process at WIPO, significant progress has been made at placing such issues on the agenda.

The ability to seek out and identify relevant information on the Internet has been a crucial innovation. It also changes the pedagogical balance such that students are not passive recipients of information from teachers and institutions but are able to search more widely for information themselves. Access to ICTs affects the search capabilities of users, including students, in different regions and contexts. Developing country Internet users may have less access to alternative marketing information (e.g. through newspapers, magazines and television) than users in developed countries, and they may be more reliant on Internet search engines. The range of language options for web searching is an important consideration for human development. The language(s) used by a search engine often determine which populations are able to access materials relevant to their cultural contexts through the search engine. For example, the development of search engines in indigenous languages allows individuals to find websites already written in that language and thus increases usability. Indeed, being able to access and use materials in a person's or community's native language enhances individual and group capabilities, including those relating to education. The predominance of search engines and materials in the Internet in certain major languages, including English, implicitly shapes the scope of access to information (and the nature of that information) by communities around the world.

2.3. Changes in modes of distribution and their impact on conventional publishing

Digital and Internet technology facilitates the creation of perfect copies of knowledge products at a low cost and enables distribution without any destruction of the original. When the cost of producing, copying and disseminating any piece of information becomes so cheap as to approach zero, any person with access to a computer and the Internet can be a powerful distributor of information. The potential exists for any work (e.g., text, music, film) to be distributed worldwide, essentially instantaneously, without degradation and at an insignificant cost.[16] As a natural consequence, Internet delivery of texts and other learning materials has become increasingly the norm in developed countries. These modes of distribution may include for-profit venues, but there are also many non-profit or open access venues and methods.

2.3.1. Open access textbooks, electronic journals and online repositories

Open access textbooks have a strong impact on access to education. Several initiatives exist in this area, including the 'Free High School Science Texts' (FHSST) project that aims to provide free science and mathematics textbooks for use in secondary schooling in South Africa.[17] Other

such initiatives include: BookPower,[18] California Open Source Textbook Project[19] and Textbook Revolution.[20] These initiatives should be supported and expanded, with better coordination encouraged between the projects and developing country governments.

Electronic journals, including open access journals, also have a far-reaching impact on access by readers to the latest research in many fields. The impact of electronic journals on the distribution of scholarship is explored in Box 7.2. Subscription fees for conventional academic journals can be phenomenally high in some specialized areas. Darnton (2008) notes that: '[C]ommercial publishers discovered that they could make a fortune by selling subscriptions to the journals. Once a university library subscribed, the students and professors came to expect an uninterrupted flow of issues. The price could be ratcheted up without causing cancellations, because the libraries paid for the subscriptions and the professors did not. Best of all, the professors provided free or nearly free labor'.[21] Another significant factor for educators and scholars is the growth of open access scholarship repositories into which more and more scholars

Box 7.2. Electronic journals and their impact on scholarly publications

Traditional journals provide a key service to scholars. They provide a peer-review process that evaluates and filters works while also enabling wide distribution of published works. In exchange for the rights to own and publish articles, the owners of journals provide the channels of distribution and the imprimatur of quality. The ability to distribute journals electronically has meant that the production and distribution costs of many journals have dropped by a significant factor. This also enables journal owners to deliver their journals to markets that were previously not worth the cost of servicing. The rise of free electronic journals provides an alternative mode of user access, while maintaining the crucial peer review and filtering mechanism.

Taking advantage of the 'freeing up' of distribution channels and the lowering of production costs, scholars in different subject areas are collaborating to produce free electronic journals that provide the advantage of peer review without the often high subscription costs (see Darnton 2008). In particular scientists and academics in science-related disciplines have taken the lead as they have experienced the increased costs of hard-copy journals more keenly as part of the general specialization and fragmentation of scientific work. This has, in turn, led to increased fragmentation of journals while major scientific work increasingly requires cross-disciplinary work. Physics scholars have led the way but have been followed by scholars in chemistry and biology-related disciplines. Some of these moves can be found in projects such as Science Commons,[22] BioMed Central[23] and the Public Library of Science.[24] These initiatives have been particularly aimed at addressing the certification/gate-keeping role of peer review. While major coordination and network costs remain, several methodologies have been found to be useful, including methods such as embedding a publication within educational institutions with professors as peer reviewers. All of these developments point to a more distributed process of certification that begins to approach the 'wiki' methodology where the value of a publication is determined by a combination of a larger number of examiners and constant examination and reflection on a document. To some extent, this distribution process may circumvent some of the 'gate-keeping' authority of established institutions and academic actors to determine who and what is published. However, the limits of the 'wiki' may need to be carefully analysed; improvements are needed to ensure that reviews and changes are not anonymous and that quality is better assured through citation formats which indicate the value of a source. Meanwhile, there is room for exploring and supporting more structures for peer review of open access journals. This would go some way in countering arguments that 'open access' does not necessarily ensure quality publications (see e.g. Elsevier

2004). While there are also arguments questioning the business viability of 'open access' models for publishing, Litman (2007, pp. 794–795) suggests that:

> Instead of asking whether open access journals can act like conventional scholarly journals without relying on the subscription revenues made possible by access restrictions, it's more useful to think about whether they can engender a less dysfunctional environment for scholarly publishing than the one we currently enjoy…universities and other research centers expend massive amounts of money to generate and support research, scholarship and scholarly publications. These expenditures vastly outweigh the modest operating budgets of even the most expensive scholarly journals…Where open access publishing can enhance the dissemination and impact of scholarly research, it seems like a good bargain for all concerned, for reasons that are primarily not financial…But making research more accessible, even if it generates no significant cost savings, seems likely to improve the quality of scholarly research across the board, and seems worth doing on these grounds alone.

Litman suggests that law journal publishing is one of the 'easiest cases for open access publishing' (ibid., p. 105).[25] She points out that: 'Nobody who participates in any way in the law journal article research, writing, selecting, editing, and publication process does so because of copyright incentives. Indeed, copyright is sufficiently irrelevant that legal scholars, the institutions that employ them, and the journals that publish their research tolerate considerable uncertainty about who owns the copyright to the works in question, without engaging in serious efforts to resolve it' (ibid.).

are placing their work. These repositories, while not necessarily peer-reviewed, frequently include papers published elsewhere in peer-reviewed journals. Works can be up-loaded and downloaded fairly easily for free. This enables 'two-way traffic' by allowing scholars to place their works in such repositories, and to access the most up-to-date writings in their field. In this way the commons of scholarship can grow; such articles and writing can provide a free access basis on which developing country scholars and educators can build reading lists, based on Global South scholarship as well as scholarship from developed countries.

There may be some tensions, however, between publishing in a high-impact paper journal and making a work available via an open access repository. While the two are not always mutually exclusive, it is not automatically permissible for journal papers to be made available via open access. This might entail hard choices amongst authors on whether to place their works on online repositories. Some potential for reforms exists. For example, if authors (as some are doing) were to put pressure on journals to permit sharing on online repositories (and employing institutions were to put in place policies to encourage their academics to do so), this could be persuasive in getting this eventually recognized as a norm.[26] Meanwhile, there are 'meta'-sites such as the Directory of Open Access Journals[27] that provide a crucial service by collecting the widely dispersed resources available on the Internet and making them available in a single place. These are generally not-for-profit ventures that rely on external funding to remain sustainable.

2.3.2. Peer-to-peer (P2P) distribution networks

The growth of P2P networks will inevitably transform the distribution not only of music but also other forms of digital content. This is a powerful distribution mechanism that bypasses the traditional media channels and enables digital content to be immediately available to many users

the moment someone places it on the network. These P2P networks are powerful tools for sharing information; P2P transfers now constitute almost half of all global Internet traffic (see Ghosh et al. 2006). The opportunity for developing countries (and by implication, for individuals and organizations within countries) is immense. While the advantages for the distribution of cultural commodities (e.g. books, CDs, DVDs) are clear, the advantages with respect to scientific research, health information, books, and other materials are even stronger. The ability to search many sub-networks for materials of particular concern to developing countries would be invaluable, especially for technology and knowledge transfer. The encouragement of the use of P2P networks for the distribution of such materials may be one of the most significant interventions states and organizations can make for creating access to knowledge.

3. Legislative developments and pro-access strategies

While ICTs present opportunities for better access by stakeholders to information products, including educational materials, there has been a trend towards a strengthening of IP protection around the world through the vehicles of treaty-making and free trade agreements (FTAs).

3.1. Legislative convergence on copyright subject matter

Along with the TRIPS Agreement, which sets minimum standards for copyright and other IP protection for a wide range of subject matter (see Chapter 1), many countries have signed up to the WIPO Copyright Treaty (WCT) and the WIPO Performances and Phonograms Treaty (WPPT).[28] Some implications of these treaties for access to information products are described in Box 7.3. These vehicles make way for legislative convergence in copyright protection between the North and the South, although some countries like the US have resisted similar harmonization in terms of copyright exceptions. Along with the increased copyright protection embodied in these treaties, there are also tendencies on the part of rights holders to seek stronger protection for software and for new subject matter such as databases. For pedagogy delivered digitally, protecting databases and software may increase significantly the cost of access and use.

Developing countries are in the process of implementing the copyright elements of the TRIPS Agreement as well as the provisions of the WCT and WPPT. Furthermore, there is a push in bilateral FTAs to have developing countries ratify and implement these international treaties. The US increasingly has insisted on the latter as part of its trade policy, and we have seen significant attempts by the EU to push the same agenda. In particular, in its negotiations with the seventy-six-member group of African, Caribbean and Pacific countries, the EU has demanded that these countries comply with the substantive elements of the WCT and WPPT. If all these countries sign up to the latter agreements, this will leave a handful of Latin American countries as the main actors pushing at the international level for a better balance between copyright protection and public access to information products for development.

Box 7.3. Expanding scope and term of copyright protection

The international copyright regime is less balanced than it has been at any point in the past. First, the range of rights granted to copyright owners has expanded. For instance, the 1994 TRIPS Agreement created a new right to control rental of copyrighted works and extended copyright to computer software. The 1996 WIPO Internet Treaties (WCT and WPPT) created a new right of

'making available', expanded the right of communication to the public and extended the right of reproduction into the storage of data in digital form.

Second, the length of copyright term has also expanded in recent years. Although the internationally harmonized term is 50 years after the life of the author, many countries have now adopted the higher term of life of the author plus 70 years (or in some cases up to 100 years), often as a result of recent bilateral trade agreements with the US and/or the European Community.

Third, while also creating new opportunities for the creation and dissemination of copyrighted works, new developments in ICTs have challenged the traditional balance embodied in the copyright system. The 1996 WIPO Internet Treaties required signatory countries to provide legal protection to technological protection measures (TPMs) – technologies that can be used by rights holders to control access to, and use of, digital copyrighted works. Private rights holders have been able to use legally enforced TPMs to control what level of access information users can have, and on what terms. As the US experience with the 1998 Digital Millennium Copyright Act[29] has suggested, overbroad TPM legal regimes can in cases override existing national copyright law exceptions and limitations. They can also hamper countries' ability to create new exceptions and limitations to meet their domestic needs.

Source: Hinze 2008.

3.2. Copyright implementation and technical assistance

Since technical assistance to developing countries on the implementation of IP-related treaties comes mainly from developed country agencies (e.g. United States Agency for International Development [USAID], US Patent and Trademark Office, European Patent Office, Japanese Patent Office) as well as from multilateral institutions (e.g. WIPO and WTO), much of the implementation has been modelled on the standards prevalent in developed countries. WIPO has been the primary vehicle through which the EU, Japan and the US have funnelled their technical assistance to developing countries. While ostensibly espousing a 'neutral' approach, such efforts tend to put in place the highest standards of IP protection beyond that strictly required under existing treaties. The nature, scope and independence of such technical assistance have been at the core of discussions on the Development Agenda at WIPO (see Chapter 9). In June 2007, the WIPO member states finally agreed on the Development Agenda to re-establish principles of neutrality and transparency and to establish a monitoring body.[30] This success has been the result of a coalition of developing countries and civil society actors.[31]

Many developing countries have not taken full advantage of the flexibilities enshrined in the TRIPS Agreement, the WCT and the WPPT. Nuanced implementation of these agreements according to developing country contexts and human development needs presents the next big challenge. Developing country coalitions and civil society organizations (CSOs) working on these issues have been developing strategies for monitoring and holding the WIPO secretariat and member states accountable for the standards set in the Development Agenda (see Chapter 9). Some organizations, for example, the International Centre for Trade and Sustainable Development (ICTSD), are identifying and evaluating the essential elements that would constitute a successful Agenda, in terms of technical assistance and other areas (Marchant & Musungu 2007).[32]

A spectrum of international CSOs and other institutions have sought in different ways to assist developing countries in building their capacity for nuanced policy-making and legislation relating to IP laws.[33] At the regional level the pro-access work of various organizations is significant as, for example, Enda Tiers Monde (Senegal), Trade Law Centre for Southern Africa (TRALAC, South Africa), African Trade Network (Ghana), Third World Network – Africa (Ghana), and Consumers International Asia Pacific. Pro-access groups in Europe, such as the Free Software Foundation Europe, have also made progress in initiating discussions on policy reforms with the European Commission, the European Parliament and the EU member states.

However, few organizations have placed themselves in a position to provide full technical assistance to developing countries at the national level. Technical expertise at the national level, which is sorely lacking, remains dependent on funds from developed countries, with an increasing amount coming directly from the US Patent and Trademark Office, the US Copyright Office and the EU, as well as industries with vested interests. A balance on the other side is crucially needed with sufficient funds to counter the dominant influences and to build the capacity of developing country stakeholders. This requires the participation of organizations with significant national constituencies and networks, across several regions. Several organizations strive to carry out such work. Examples include eIFL in the library sector, ICTSD in TRIPS compliance and CIEL.[34] Strong conceptual backup in the development of model laws and 'model' implementation is needed. Such capacities tend to be divided among different organizations. For example, academic institutions such as the Yale Information Society Project (www.law.yale.edu/isp) are carrying out some of the conceptual work, along with Geneva-based organizations such as CIEL, ICTSD, and the South Centre among others. Such work requires significant support and coordination, including comprehensive approaches at the national or regional level to ensure coherence.

3.3. Increased copyright enforcement

The EU and the US have focused increasingly on pushing enforcement of copyright by extending techniques of infringement detection and copyright enforcement to authorities in developing countries. In addition, developed countries seek higher enforcement standards such as the criminalization of copyright infringement (see Box 7.4). The ongoing negotiation by developed countries (including the US, Canada, Japan and the EU) of an Anti-Counterfeiting Trade Agreement (ACTA), outside of WIPO, has also emerged as an area for further scrutiny (New 2009, p. 34; Stratton 2009, p. 23). These developments coincide with the increased capacity of rights holders to carry out private quasi-judicial enforcement through TPMs and digital rights management (DRM). Few public interest organizations have formal plans to address the enforcement issue, possibly because it has little political traction and is difficult to frame for advocacy. Increased enforcement of IP may, however, be one of the most important developments with respect to the impact it may have on fundamental rights and local livelihoods. As Rens, Prabhala and Kawooya (2006, p. 30) have noted, the informal economy in developing countries is a crucial component of earnings for the majority of people, including those who use and sell technically infringing services and products. Other actors who will be affected by increased enforcement and the criminalization of infringement will be students, researchers and journalists. This will in turn affect learning, research and freedom of expression in society.[35] Enforcement without due regard to societal impact and adjustment costs will severely damage the economies of developing countries. In addition, the push for enforcement may pressure

developing countries to shift funds and personnel away from crucial welfare policies in health and other areas to spend on customs and border enforcement.

Box 7.4. Personal use, mass copying and criminal offences

Legislative tendencies in many countries have been towards toughening copyright laws and their enforcement, including a marked tendency to treat forms of copyright infringement increasingly as offences under criminal law (Munoz 2007). In some jurisdictions, criminal sanctions now apply not only to wilful infringement for commercial gain[36] or on a 'commercial scale',[37] but are also spilling towards cases of personal use of copyright-protected material.[38] While it is beyond the scope of this chapter to survey the expanding range of criminal sanctions for copyright in different jurisdictions (see Sugden 2009),[39] more scrutiny is needed of the increasing tendency to resolve civil disputes through criminal proceedings (see Tapper 2004; Laddie 1996). Noting how the criminal provisions in the UK Copyright Act are now 'being used in earnest', Sir Hugh Laddie (1996, pp. 14–15) observes: 'There is a great incentive to proceed in this way. The costs of the prosecuting copyright owner are usually paid out of central funds, even if the prosecution fails.…We have therefore reached the stage where taxpayers' money is being used to enforce private rights which many might think are more than adequately protected by civil remedies'.

Discussing criminal penalties under the US Digital Millennium Copyright Act of 1998 (DMCA) for wilful infringements other than for commercial purposes or financial gain (17 U.S.C. § 506(a)(1)(B)), Moohr (2003) suggests that the rationale for criminalizing what is effectively 'personal use' does not necessarily fit with the prevalent moral consensus in society nor accord with criminal law doctrines. She notes that: 'Criminal theory suggests it is appropriate to punish conduct that imposes a community harm or that breaches a moral standard…consensus that would condemn personal use is far from robust and the harm rationale provides only an equivocal basis for criminalization' (ibid., p. 732).

Moohr draws a contrast between personal use and what she describes as the 'predatory practices of competitors or [ ] the self-enriching facilitation of copying by file sharing services' (ibid.). Other commentators have gone further in questioning whether there is moral consensus across societies, with different cultural attitudes towards IP, that commercial copying and handling of copyright-protected works without authorization should be treated as criminal offences (Bullard 2005; Rens et al. 2006; Munoz & Waitara 2007).[40] As seen in the controversial negotiations of an Anti-Counterfeiting Trade Agreement (ACTA) by countries including the US, the EU and Japan, there is little agreement on the threshold for treating copyright infringements as criminal.

Meanwhile, Sugden (2009, p. 203) observes that 'the harmonization of criminal infringement of intellectual property rights relating to counterfeiting and piracy activities in Europe has been a difficult process as not all countries recognize or accept the criminalization of copyright infringements'. Discussing recent EU debates and reforms towards limiting the use of criminal sanctions to cases of intentional infringements of IPRs on a 'commercial scale',[41] he notes the difficulties in providing a numerically precise definition of what constitutes a 'commercial scale' (ibid., p. 203). Comparing current approaches in different jurisdictions around the world, he adds that: 'These variations in the meaning of the words "commercial scale" demonstrate the difficulties of defining in the technological age the boundaries between legitimate and illegitimate uses of a copyright work' (ibid.).

In a South Center paper, Biadgleng and Munoz (2008, p. 27) discuss border measures and customs legislation dealing with IP enforcement, including the development of model legislation

by the World Customs Organization (WCO). They warn that: 'One of the dangers of the increased focus on border control measures is the possibility that the powers given to customs authorities over intellectual property enforcement may be too broad if they have not been adequately trained to pass judgment on whether goods are actually counterfeit…'. Such border measures may create barriers to the flow of non-counterfeit products. Biadgleng and Munoz furthermore note that Interpol characterizes 'trademark counterfeiting and copyright piracy as serious intellectual property crimes' but does not provide a clear definition of the terms and what necessary elements must be present to constitute counterfeiting and piracy (ibid.). In their opinion: 'This is a serious concern for developing countries and consumers, given that the potential scope of the definition of counterfeit and piracy may be so wide as to include legitimate uses of works and cases where an individual may infringe an intellectual property right without knowing it'.

It is crucial that support is provided to developing countries for the development of strategies to combat enforcement approaches (e.g. through customs and border control) that ultimately serve external industries. Such strategies should explore win-win scenarios of enforcement which re-direct attention to the needs of domestic actors in developing countries (artists and creators especially) as well as enforcement against biopiracy and misappropriation of indigenous knowledge and cultural expressions (Kostecki 2006; see Chapters 4 and 5). While there are several organizations with the capacity to help develop strategies at the national level (a good example is Fundação Getulio Vargas Law School in Brazil), such approaches may be further pioneered by artists' associations and development aid donors, with potential partnering between academic institutions and other organizations.

The rising influence of collecting societies furthermore calls for scrutiny (see Chapter 9). Special attention will need to be paid to the structure of collecting societies to ensure that they are focused on domestic interests in a developing country rather than on foreign interests. What is needed is a counterbalance to the assistance provided to developing country collecting societies by foreign collecting societies, as well as the formulation of an international code of conduct for such groups to ensure that they do not unduly target educational institutions and libraries.

Further scrutiny is also needed on arrangements and guidelines encouraging self-enforcement by educational institutions and libraries of restrictions on reproducing and disseminating materials which may go beyond copyright law. For example, there are more and more contract-imposed limitations on institutions, including libraries, on the extent they can reproduce copyright-protected material. As noted by Heins and Beckles (2005), organizations representing owners of copyright and users of protected materials have also negotiated guidelines with specific limits on copying. Frequently used in education, these guidelines offer some security to teachers, and near-immunity from suit to the universities that follow them (ibid., p. 6). The authors note, however, how such guidelines are often ringed with arbitrary restrictions (e.g. numerical limits on the number of pages from a textbook, or words from a poem or story, that can be copied), and may ignore the flexibility provided by exceptions under copyright laws and conventions (ibid., pp. 6–7). Further attention is thus needed on the potentials and limitations of elaborating such guidelines in the field of education. In the US context, Jaszi warns in a publication by the Center for Social Media (2008, pp. 7–8) that:

> Today, some educators mistakenly believe that the issues covered in the fair use principles…are not theirs to decide. They believe they must follow various kinds of 'expert' guidance offered by others. In fact, the opposite is true. The various negotiated agreements that have emerged since passage of the Copyright Act of 1976 have never had the force of law, and in fact, the guidelines bear little relationship to the actual doctrine of fair use…many publications for educators reproduce the guidelines uncritically, presenting them as standards that must be adhered to in order to act lawfully.…

Jaszi argues that this is an area in which educators 'can assert their own rights under fair use to make these decisions on their own, without approval' (ibid.). He adds that 'in rare cases where doing so would bring them into conflict with misguided institutional policies, they should assert their rights and seek to have those policies changed'. As an alternative reference and 'counterweight' to guidelines, he highlights a set of best practices for media literacy educators (ibid.).

3.4. More multilateral and national emphasis on copyright limitations and exceptions

While there has been successful international harmonization of rights holders' norms over the last twenty years, this has not been matched by a parallel harmonization of limitations and exceptions that serve the public interest (Hinze 2008). Within the international copyright framework, the so-called three-step test currently governs exceptions and limitations to copyright. This is discussed in Box 7.5 (see also Chapters 6 and 8).

Box 7.5. Exceptions and limitations within the international copyright framework

Gwen Hinze[42]

The Berne Convention contains various exceptions and permits signatories to set limitations on the scope of copyright protection. It contains a mandatory and uncompensated exception to copyright owners' exclusive rights, permitting quotation of copyrighted works in accordance with 'fair practice', in Article 10(1). It also gives signatory countries the discretion to create uncompensated exceptions and limitations, subject to certain conditions, for use of copyrighted works for illustration in publications, broadcasts and sound recordings for teaching purposes (Article 10(2)); news reporting on current events (Article 10bis(1) and (2)); compensated exceptions and limitations for rebroadcasting (Article 11bis(1)) and for recording musical works (Article 13); and a special compulsory licence regime for reproduction and translation of texts by developing countries, subject to strict conditions (the Berne Appendix). These exceptions are available to signatories of the TRIPS Agreement, which incorporates the Berne Convention.

While the Berne Convention recognizes an exception for 'teaching' purposes in Article 10(2), there is presently no recognition in the international copyright framework for exceptions to facilitate education (which includes both imparting knowledge by educators, and the ability of students to learn by accessing and interacting with information), nor specific exceptions for libraries and archives, or uses by persons with disabilities.

The Berne Convention also allows signatories to create additional uncompensated exceptions to rights holders' reproduction right if they meet the controversial 'three-step test' (Article 9(2)). Article 13 of the TRIPS Agreement adopted the same test for creation of exceptions

to a broader set of rights, beyond the reproduction right. It provides that: 'Members shall confine limitations or exceptions to exclusive rights to certain special cases which do not conflict with a normal exploitation of the work and do not unreasonably prejudice the legitimate interests of the right holder'. To what exclusive rights Article 13 applies is still the subject of much debate. Legal commentators who take a maximalist approach claim that it applies to *all* exclusive rights of copyright owners, and conditions the creation of *any* new copyright exceptions and limitations on meeting that test (following the WTO Panel Decision in *United States – Section 110(5) of the U.S. Copyright Act*, concerning section 110(5) of the US copyright legislation). However, other legal commentators read it more narrowly, as applying only on top of existing Berne exceptions, when the test is compatible with the requirements of those in the Berne Convention. The history of the negotiation of the Stockholm Conference of the Berne Convention also supports the interpretation that the three-step test does not apply to those areas where discretion is given to Member States to create exceptions recognized in the Berne Convention, such as Articles 10(1) and 10(2). That view is also supported by the standard principles of interpretation in international law. As a result, there is a sound argument that countries can create exceptions for teaching purposes under Article 10(2) of the Berne Convention that do not have to be conditioned on a decision about satisfaction of the three-step test.

The three-step test was included in the 1996 WIPO Copyright Treaty (WCT Article 10) and WIPO Performances and Phonograms Treaty (WPPT Article 16) and governs the creation of exceptions and limitations to rights newly granted under those treaties. The WCT and WPPT formulation also applies to existing exceptions under the Berne Convention. Developing countries expressed concern during the negotiations of the 1996 treaties about the impact of this provision on national sovereignty over national copyright law exceptions (which the Berne Convention had traditionally reserved to Member States) and the ability of countries to create new exceptions and limitations to facilitate domestic needs. As a result, the Agreed Statements Concerning the WIPO Copyright Treaty were adopted by Member States, to make clear that the intention was to preserve countries' existing copyright law exceptions and give countries the flexibility to introduce new copyright exceptions and limitations appropriate for the digital environment in order to meet domestic needs, such as distance education. The Agreed Statements also expressly shield Berne Convention exceptions from scrutiny under the TRIPS Agreement's three-step test, affirming that Article 10 of the WCT does not expand or reduce the scope of existing exceptions under the Berne Convention (see Chapter 6).

However, in practice, the uncertainty surrounding the interpretation of the three-step test, and the linkage between national IP regulation and trade law under the TRIPS Agreement, has resulted in the creation of relatively low levels of exceptions and limitations, particularly in developing countries' national copyright laws.

Source: Hinze 2008.

In November 2004, the government of Chile (at the initiative of the Chilean Ministry of Education) asked WIPO to include the subject of exceptions and limitations to copyright and related rights (for the purposes of education, libraries and archives, and disabled persons) on the agenda of the WIPO Standing Committee on Copyright and Related Rights (SCCR) and 'to strengthen international understanding of the need to have adequate limitations, learning from existing models and moving towards agreement on exceptions and limitations for public interest purposes, which, like minimum standards, were to be envisaged in all legislation for the benefit of the international community' (WIPO 2004).[43] Along with other proposals for reforms, this has prompted significant emphasis at WIPO on exceptions and limitations to copyright.

In March 2008, the WIPO SCCR met in Geneva to discuss exceptions to, and limitations on, rights granted to copyright holders by international instruments, a topic which is of vital importance to developing countries. WIPO member countries universally supported keeping the topic of exceptions and limitations on the Committee's agenda. There has since been some progress in this area. Studies have been commissioned by WIPO, for example, on exceptions and limitations for libraries and archives (see Box 7.6), as well as for the benefit of educational activities, including distance education and transborder aspects.

Libraries and library associations are active in pushing for legal reforms (see Stratton 2009). For example, the Library of Alexandria has recently published a toolkit on 'Access to Knowledge' which highlights salient issues in copyright exceptions and limitations for libraries and archives (see Essalmawi 2009). IFLA, eIFL.net and the US Library Copyright Alliance (LCA) have also issued a joint *Statement of Principles on Copyright Exceptions and Limitations for Libraries and Archives* at the eighteenth session of the SCCR.[44] Stratton notes that 'this important document…sets out the library community's position on the barriers to the delivery of library and information services for access to knowledge in the 21st century digital age' (ibid.).

Box 7.6. Copyright limitations and exceptions for libraries and archives: The WIPO 2008 study

The WIPO-commissioned 'Study on Copyright Limitations and Exceptions for Libraries and Archives' (WIPO 2008) provides an overview of statutory exceptions for libraries in 184 WIPO member states, including library exceptions to the prohibition against circumvention of technological protection measures.[45] The statutory provisions surveyed primarily address such issues as reproduction of copyrighted works for purposes such as private research and study, preservation and replacement of materials, and document supply and interlibrary lending. Prepared by Kenneth Crews, the study noted variations among national statutes in nearly all respects, from the scope of applicable libraries to the specific activities encompassed.

The study notes that many libraries are struggling with issues such as large-scale digitization of collections and automated harvesting and collecting of Internet-based resources (see WIPO 2008, pp. 28–31). It provides case studies suggesting that libraries may have challenges interpreting the library exceptions under a domestic law (e.g. under Canadian law) and are active in bringing about legislative reforms in countries where the law provides no statutory provisions specifically applicable to libraries. For example, reforms have been considered [and recently passed] in Chile with far-reaching effects (ibid., pp. 30–31).[46] In a more extreme case, the study notes that 'librarians in South Africa have reported several examples of services that have been seriously hindered because of the lack of a provision in the S.A. Copyright Act that would clearly permit the making of even a single copy of a work in a digital format' (ibid., p. 35).

The study also draws attention to the prohibition against circumvention of technological measures under Article 11 of the WCT (ibid., p. 23). Under this Article:

> Contracting parties shall provide adequate legal protection and effective legal remedies against the circumvention of effective technological measures that are used by authors in connection with the exercise of their rights under this Treaty or the Berne Convention and that restrict acts, in respect of their works, which are not authorized by the authors concerned or permitted by law.

The study suggests that the language from Article 11 'references acts that may be "permitted by law"'. According to the study: 'That language opens an opportunity for countries to create exceptions to the anti-circumvention provision. Those exceptions have the potential of providing some balance and defusing some of the controversy surrounding the new law' (ibid.). The study notes that, of the 184 WIPO member countries, seventy-nine have a statutory prohibition against circumvention of TPMs (ibid., p. 31). Of those countries, twenty-six have an exception to the bar on circumvention that is explicitly applicable to libraries. Every country that has an anti-circumvention exception for libraries also has an exception to the economic rights for the benefit of libraries. Twenty-one of the twenty-six countries are EU members. The non-EU countries are Australia, Croatia, Norway, Singapore and the US.

Source: WIPO 2008.

As WIPO and its member states respond to new demands posed by the Development Agenda (see Chapter 9), other potential exceptions and limitations have been brought to the fore. This is evidenced, for example, by the November 2008 SCCR Information Session on a WIPO-commissioned study on exceptions for the visually impaired (WIPO 2007) and the treaty proposal for facilitating access to copyright-protected material by the blind, visually impaired and other reading-disabled persons (considered at the eighteenth session of the SCCR in May 2009). This treaty proposal was placed on the Development Agenda by the World Blind Union (WBU). The reception by WIPO member states to the proposal has been politically divided (Ress 2009, pp. 46–50).[47] Ress observes that: '[D]espite the emergence of new publishing and distribution technologies, enormous barriers in accessing copyrighted works confront persons who are blind or otherwise reading disabled…While some countries have limitations and exceptions in their copyright laws to allow authorized entities to make works accessible for persons with reading disabilities without prior permission of copyright owners, there is no legal certainty' (ibid., pp. 41–43). She notes that exceptions vary from country to country, and are often restrictive or focused only on a single older technology (e.g. raised paper Braille) (ibid.).

Further exploration of exceptions and limitations to copyright provisions, including digital exceptions, will be important in maintaining balanced access by the public to copyright-protected works. Various approaches proposed at the multilateral level towards elaborating or clarifying 'exceptions and limitations' relevant to education are mentioned in the following section. Some examples of national laws relating to exceptions and limitations for educational use are provided in Appendix D (see Chapter 6). Both developed and developing countries will continue to face the challenge of adapting their domestic copyright laws to: (1) implement existing exceptions for education and libraries under the multilateral framework or FTAs; and (2) formulate new exceptions that address educational and library uses of digital content.[48]

3.4.1. Towards internationally recognized mandatory minimum exceptions and limitations?

There seems to be growing consensus that a new multilateral means of creating mandatory minimum exceptions and limitations to international copyright law is required to foster education, libraries and archives, to facilitate uses by disabled persons and to rebalance the international copyright regime to serve the needs of all the world's citizens. Hinze (2008) notes that there are various mechanisms for providing formal recognition of an international consensus on mandatory minimum exceptions and limitations. One would be a treaty or other 'hard' norm, which would provide clear guidance for developing countries and serve as a strong

counterbalance to pressures from bilateral and regional negotiations outside of WIPO. This could take the form of a treaty on copyright exceptions and limitations, or be part of a broader Access to Knowledge Treaty.

Hugenholtz and Okediji observe (2008, p. 3) that 'despite over a century of international norm setting in the field of copyright, limitations and exceptions have largely remained "unregulated space"'. According to them, 'nothing in the international acquis would prevent parties to the Berne Union, the WCT or the WTO from entering into a special agreement listing in an exhaustive or enumerative manner those copyright limitations that are permitted within the confines of the three-step test' (ibid.).

Hugenholtz and Okediji suggest that a global instrument on limitations and exceptions could also be cast in soft law (ibid., p. 5). It could be broached, for example, through adoption of a 'soft' norm, such as a Statement made by the WIPO Standing Committee on Copyright and Related Rights, adopted by the WIPO General Assembly, adoption of WIPO Guidelines, or a Joint Statement made by the WTO TRIPS Council and WIPO Standing Committee on Copyright and Related Rights (ibid.).

While Hugenholtz and Okediji venture that an instrument for exceptions and limitations should be primarily couched in copyright law, other frameworks beyond copyright need to be explored (ibid., p. 34). As Hugenholtz and Okediji note:

> The framework of human rights bears some promise for an instrument on limitations based, in particular, on core fundamental freedoms, such as freedom of speech and right to privacy. The framework of competition law may provide the context for international norms on compulsory licensing concerning, for instance, software interoperability. The framework of consumer law has obvious potential for protecting consumers against unfair terms in standard licensing agreements and might contain norms that make private copying freedoms 'click-wrap resistant'. (Ibid.)

These frameworks need to be further debated and evaluated by civil society, academics and governments, along with the potential for a multilateral instrument governing exceptions and limitations. As Hinze (2008) notes, the first step towards a multilateral instrument is increasing understanding in the international community of the need for a rebalancing instrument, and the economic and social value that it would bring for all stakeholders.

3.5. Consolidated strategies for access to knowledge

Pro-access responses to the opportunities presented by ICTs for civil society, governments and international organizations are manifold, and it is impossible to do justice to all of them within the scope of this chapter. Some broad-based initiatives include the movement for a new Access to Knowledge Treaty, pioneered by a number of developing countries and civil society organizations including Knowledge Ecology International.[49] The conceptual framing for this movement has largely been carried out at some academic institutions – including the Yale Law School Information Society Project which has been holding Access to Knowledge (A2K) Conferences, Harvard Law School's Berkman Center for Internet & Society, Fundação Getulio Vargas in Brazil and the United Nations University-MERIT in the Netherlands.

Few organizations have developed a full digital agenda and strategy to address the impact of technological developments on knowledge and education. Most organizations are responding in a piecemeal fashion, depending on which aspect of the copyright landscape they are engaged with. Scenario planning is rare in this field. An exception is a study by the Berkman Center for Internet & Society (2005a) which suggested several possible scenarios for developments in the online environment, mainly in the US context, ranging from no change in present balances to the dominance of alternative methods of production and remuneration (see Chapter 9). The international supplement to this work[50] elaborates on some of the trends identified in this chapter. While academically useful, the scenarios remain to be further fleshed out in order to provide guidance on where developments are leading. An important follow up to this work is a 2006 paper by the Berkman Center entitled 'The Digital Learning Challenge: Obstacles to Educational Uses of Copyrighted Material in the Digital Age'.[51] This paper focuses on developments in the US and points to the problems that copyright poses for the use of digital content.

At the international level, the work of many organizations in this field has coalesced around the UN-based Internet Governance Forum (IGF), which developed out of the World Summit on the Information Society programme's work.[52] This summit has proven a valuable organizing force for addressing many of the issues surrounding digital and Internet content and access to knowledge. However, one of the major groups missing from these discussions and activities are educational institutions at the secondary level, especially teachers' unions and associations. This is a major lacuna which could be remedied by support for the attendance and participation of secondary level institutions in forums such as the IGF, the Yale A2K conferences, and discussions with library associations.

Meanwhile, organizations whose involvement in IP issues has arisen out of their work on trade issues may not have concerted planning scenarios for IP, and these organizations are thus unlikely to have given full consideration to the effects of digital and Internet content on knowledge and education issues. As Roffe (2007) has noted, outside the access to medicines arena, regional and national institutions do not generally engage in any significant planning or action on IP. Some exceptions do exist, however, as exemplified by the IP-related planning activities that have been carried out by the regional limbs of some international nongovernmental organizations. One such example was the 'Access to Knowledge' project undertaken by Consumers International Asia Pacific and funded by the Open Society Institute. Ensuring sustained and continuing regional or national strategies and actions on these issues in developing countries remains a challenge.

4. Conclusion

Given the broad range of actors and issues to be addressed in relation to pro-access implications of new technologies for knowledge and education, a unitary strategy can be difficult to discern. However, the cross-pollination and discussions engendered at the Yale A2K Conferences and the IGF have shown many organizations that they share the same agenda, especially on digital and Internet content. Many are beginning to work together, especially at the multilateral level. Serious capacity weaknesses at the regional and national levels need to be addressed, and some basic conceptual gaps in areas such as copyright enforcement need to be filled. A lot of work remains to be done and better coordination among actors is needed.

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Notes

[1] Invaluable inputs were received from Rosemary Wolson, Margaret Chon, Gwen Hinze, Graham Dutfield and Tzen Wong.

[2] See Article 13 of the International Covenant on Economic, Social and Cultural Rights 1966. See the interpretation in Committee on Economic, Social and Cultural Rights (CESCR) 1999, *General Comment No. 13: The right to education* (art. 13), UN Doc. E/C.12/1999/10 (1999), para 6(a). See also Article 28 of the Convention on the Rights of the Child 1989 (CRC).

[3] See Article 19 of the International Covenant on Civil and Political Rights 1966 (ICCPR). See the interpretation in Human Rights Committee (CCPR) 1983, *General Comment No. 10: Freedom of expression* (art. 19), reprinted in UN Doc. HRI/GEN/1/Rev.9, p. 181 (27 May 2008). See also Articles 13 and 17 of the CRC.

[4] See also Article 27 of the (non-binding) Universal Declaration of Human Rights 1948. Article 27(1) provides that: 'Everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits'.

[5] Committee on Economic, Social and Cultural Rights (CESCR) 2009, *General Comment No. 21: Right of everyone to take part in cultural life* (art. 15, para. 1 (a)), UN Doc. E/C.12/GC/21 (21 December 2009).

[6] See the example of South Africa in Adeya and Cogburn 2002, p. 22.

[7] See Waltner 2006.

[8] See the Public Library of Science (PLOS) website, available at: http://www.plos.org (accessed 20 April 2010).

[9] See the Social Science Research Network (SSRN) 'eLibrary' website, available at: http://www.ssrn.com (accessed 20 April 2010).

[10] Andersen et al. (2000, p. 9) argue that developing country artists may be able to take advantage of new technologies more easily as new entrants.

[11] An example is Creative Commons South Africa, website available at: http://za.creativecommons.org/ (accessed 23 March 2010).

[12] In the software community, there is a developed distinction between open source software (meaning software licensed under a licence meeting the open source definition that may be sold (i.e. not free as in uncompensated)) and free software, meaning software licensed under the GPL that has the four freedoms. See Open Source Initiative, 'The Open Source Definition', available at: http://www.opensource.org/docs/definition.php (accessed 23 March 2010). For an explanation on the four freedoms, see GNU Operating System, 'The Free Software Definition', available at: http://www.gnu.org/philosophy/free-sw.html (accessed 23 March 2010).

[13] See the Project Gutenberg website, available at: www.gutenberg.org (accessed 18 January 2009).

[14] Project Gutenberg is organized into separate national projects because of differing national copyright terms – that is, works can be under copyright in one country even if they are in the public domain in their originating country. The main Project Gutenberg project makes available works that are in the public domain in the US and has a disclaimer about reading them outside of the US. Project Gutenberg Australia was threatened with litigation in 2004 for making available a work that was in the public domain under the then current Australian copyright law, but not under US copyright law. See LibraryLaw Blog, '*Gone With the Wind in the Public Doman? Will Peter Pan Never Grow Up?*', 8 November 2004, available at: http://blog.librarylaw.com/librarylaw/2004/11/emgone_with_the.html (accessed 23 March 2010).

[15] See Massachusetts Institute of Technology, 'MIT Open Course Ware', available at: http://ocw.mit.edu/index.html (accessed 18 January 2009). The online courses range from Anthropology to Chemical Engineering and are available at both the undergraduate and graduate levels.

[16] This, of course, presumes that the costs of accessing and using the Internet are on a par with telephone costs, or even cheaper.

[17] See FHSST, 'Free High School Science Texts', available at: http://www.fhsst.org (accessed 20 April 2010).

[18] See the BookPower website, available at: http://www.bookpower.org (accessed 20 April 2010).

[19] See the California Open Source Textbook Project (COSTP) website, available at: http://www.opensourcetext.org/index.htm (accessed 20 April 2010).

[20] See the Textbook Revolution website, available at: http://textbookrevolution.org/index.php/Main_Page (accessed 20 April 2010); see also Wikibooks, 'Help: About', available at: http://en.wikibooks.org/wiki/Wikibooks_portal (accessed 20 April 2010).

[21] According to Darnton: 'The result stands out on the acquisitions budget of every research library: the *Journal of Comparative Neurology* now costs $25,910 for a year's subscription; *Tetrahedron* costs $17,969 (or $39,739, if bundled with related publications as a *Tetrahedron* package); the average price of a chemistry journal is $3,490…owing to the skyrocketing cost of serials, libraries that used to spend 50 percent of their acquisitions budget on monographs now spend 25 percent or less' (ibid.).

[22] See the Science Commons website, available at: http://www.sciencecommons.org (accessed 20 April 2010).

[23] See BioMed Central: The Open Access Publisher, 'Welcome to BioMed Central', available at: http://www.biomedcentral.com (accessed 20 April 2010).

[24] See the Public Library of Science (PLOS) website, available at: http://www.plos.org (accessed 20 April 2010).

[25] She also notes that (at least in the US) the majority of law journals depend on unpaid students to undertake the selection and copy editing of articles (2007, p. 105).

[26] This helpful insight is owed to Rosemary Wolson. Some publishers are also increasingly exploring modalities which enable contributors to publish through them in hard copy, while permitting the circulation of content (e.g. electronic drafts of articles) through online 'open access' repositories. The present book by the Public Interest Intellectual Property Advisors (PIIPA) is an example where such solutions towards ensuring some measure of 'open access' have been successfully explored with a mainstream publisher.

[27] See the Directory of Open Access Journals (DOAJ) database, available at: http://www.doaj.org (accessed 20 April 2010). Further electronic library websites can be accessed from the Electronic Information for Libraries (EIFL) website, available at: http://www.eifl.net/cps/sections/home (accessed 18 January 2009).

[28] WIPO Performances and Phonograms Treaty (Geneva, 20 December 1996), 36 I.L.M. 76 (*entered into force* 20 May 2002) [hereinafter 'WPPT'], available at: http://www.wipo.int/export/sites/www/treaties/en/ip/wppt/pdf/trtdocs_wo034.pdf (accessed 3 February 2010). WIPO Copyright Treaty (Geneva, 30 December 1996), 36 I.L.M. 65 (*entered into force* 6 March 2002) [hereinafter 'WCT'], available at: http://www.wipo.int/export/sites/www/treaties/en/ip/wct/pdf/trtdocs_wo033.pdf (accessed 3 February 2010).

[29] Digital Millennium Copyright Act (DMCA), Pub. L. No. 105–304, 112 Stat. 2860 (1998) (codified as amended in scattered sections of 17 U.S.C.).

[30] For further background on the Development Agenda and related proposals, see the WIPO website, 'Development Agenda for WIPO', available at: http://www.wipo.int/ip-development/en/agenda/ (accessed 23 March 2010). See also New 2009.

[31] This includes work at the South Centre, Knowledge Ecology International (KEI, formerly CPTech), CIEL, ICTSD, QUNO, Fundação Getulio Vargas Law School in Brazil, Electronic Frontier Foundation, Electronic Information for Libraries (eiFL) and the International Federation of Library Associations (IFLA), among other institutions.

[32] ICTSD has also been setting up Geneva-based and regional dialogues (e.g. workshops in the Pacific, West Africa and Southern Africa) on national implementations of the Development Agenda.

[33] Examples (non-exhaustive) include the Centre for International Environmental Law (CIEL), Oxfam International, Quaker United Nations Office (QUNO), Knowledge Ecology International (KEI), ICTSD, PIIPA and others.

[34] See the eIFL homepage, available at: http://www.eifl.net (accessed 18 January 2009).

[35] Some discussion on the impact of enforcement on freedom of expression is included in Chapter 8 of this book; see further Heins and Beckles 2005.

[36] For example, the US Digital Millennium Copyright Act of 1998 (DMCA) criminalizes 'willful infringement' for 'commercial advantage or private financial gain' (17 U.S.C. § 506(a)(1)(A)). Criminal penalties are not applicable to nonprofit libraries, archives, or educational institutions (17 U.S.C. § 1201(d)(3)).

[37] For a comparison of approaches to defining 'commercial scale' in different jurisdictions, see Sugden 2009.

[38] Under the US DMCA, criminal penalties extend to 'willful infringement' by the 'reproduction or distribution, including by electronic means, during any 180-day period, of 1 or more copies or phonorecords of 1 or more copyrighted works, which have a total retail value of more than $1,000' (17 U.S.C. § 506(a)(1)(B)). Moohr (2003, p. 13) suggests this includes the case of those 'who copy for personal use, who by definition do not act for commercial advantage…'. Loren (1999, pp. 862–864) provides hypothetical examples of how easily the threshold of US$1,000 may be reached in personal use. According to Sugden, the limits set in the US legislation 'mean that in the modern world of the internet, downloading individuals can breach these limits easily' (2009, p. 204; see also pp. 208–209).

[39] Some illumination may also be gained from the Federation Against Copyright Theft (FACT) website, available at: http://www.fact-uk.org.uk/ (accessed 23 March 2010), and the UK Intellectual Property Office homepage, available at: http://www.ipo.gov.uk/crime.htm (accessed 23 March 2010).

[40] Alford (1995) suggests there are cultural differences in perceptions of IP in his book entitled 'To Steal a Book is an Elegant Offence', which describes US-Sino discussions in the 1980s towards stronger IP protection and enforcement in China – although such differences may also be overstated (Shao 2007). For current IP-related laws in China, see the China IP Law Search Tool, available at: http://www.ipr2.org/ipsearch (accessed 23 March 2010). The gravity of some criminal sanctions in force in China is noticeable in an information document of the UK Intellectual Property Office, entitled 'China: An Enforcement Roadmap', available at http://www.ipo.gov.uk/chinaroadmap.pdf (accessed 25 February 2010).

[41] See text of the European Parliament A Series, Commission Report, sixth parliamentary term (2004–2009), no. 73 of 2007, available at: http://www.cr-international.com/2007_EU-Parliament_Report_on_Enforcement_Directive_27.3.pdf (accessed 23 March 2010). See discussion in Sugden 2009, p. 203.
[42] Extract from Hinze 2008.
[43] This summary was drawn from Hinze 2008, p. 1.
[44] IFLA, 'Statement of Principles on Copyright Exceptions and Limitations for Libraries and Archives', available at: http://www.ifla.org/en/publications/statement-of-principles-on-copyright-exceptions-and-limitations-for-libraries-and-archi (accessed 15 December 2009). See discussion in Stratton 2009, pp. 23–26.
[45] WIPO 2008, Executive Summary, pp. 7–8.
[46] The library provisions considered in Chile encompass the following possibilities: 'preserving or replacing a work that is part of the library collection, in case of loss or deterioration; substituting a work for another library or file that has become lost, destroyed, or made unusable, as long as the work is not available on the market; adding a work to the library's collection, if the work has not been available on the market for the last five years; making a copy of a work for a user's private study; making a copy simultaneously available to multiple users present at the library; translating a work if it has been published for three years and a Spanish or Castilian translation is not made available by the rightsholder' (ibid., pp. 30–31). Chilean Law No. 20,435, which amends Intellectual Property Law No. 17,336 (1970) and includes these exceptions for libraries and archives, was published and took effect on 4 May 2010.
[47] As New (2009, p. 30) notes, the issue of access to material for the reading-impaired 'has become a key focal point for some A2K activists who believe the effort will be difficult to oppose because of the combination of human rights and market failure in providing equal access'. Some developing countries are concerned, at the same time, that a move first to a treaty for the visually impaired may jeopardize other limitations and exceptions they consider as ripe for inclusion within a package for reform at WIPO (ibid.). The African Group, for instance, views broad support for libraries and access for all types of readers as essential (ibid.; see also Ress 2009, p. 50).
[48] For an example, see IFLA 2002, 'Limitations and Exceptions to Copyright and Neighbouring Rights in the Digital Environment: An International Library Perspective', available at: http://www.ifla.org/III/clm/p1/ilp.htm (accessed 26 June 2009).
[49] See the website of Knowledge Ecology International, available at: http://www.keionline.org (accessed 19 April 2010).
[50] See Berkman Center for Internet & Society and GartnerG2 2005b.
[51] See Berkman Center for Internet & Society 2006.
[52] See, for instance, the creation in 2007 of the Dynamic Coalition on Digital Education involving members of the Open Access and Educational Resources, Creative Commons and public interest digital copyright advocacy communities – Yale University, 'Proposal No. 23: Overcoming Obstacles to Effective Digital Education', available at: http://www.intgovforum.org/cms/workshops_08/showmelist.php?mem=78 (accessed 23 March 2010).