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**Commission on Intellectual Property Rights**

**Study Paper 5**

**Study on Intellectual Property Rights, the  
Internet, and Copyright**

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**This report has been commissioned by the IPR Commission as a  
background paper. The views expressed are those of the author and do not  
necessarily represent those of the Commission.**

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***Comments on this report are, of course, most welcome.***

## **Executive Summary**

The report, totalling 100 pages, is divided into six sections, plus four appendices; it focuses primarily, though not exclusively, on the use of access to copyright-protected materials for educational purposes in the 50 poorest and least developed countries (LDCs) as identified by the World Trade Organisation.

### **1 – Copyright and Poor/Least Developed Countries- An Overview of Some of the Issues** (8 pgs.)

Copyright should primarily serve the instrumentalist function of satisfying social goals and values: the creation, spread and sharing of knowledge and information, and public use and access. In the current era, and particularly with regard to LDCs, the presumptions of copyright are ripe for wholesale reconsideration. The biases and interests of developed countries are monopolising the international copyright agenda; the interests of LDCs have been ignored and, in any event, copyright, a Western concept, is not a prerequisite for the production of works in LDCs.

Industrialised countries, the main producers of copyright-protected works, have also been the nearly exclusive beneficiaries of expanded intellectual property protection. LDCs are primarily copyright users and have received minimal benefit. Increased copyright protection and enforcement in their countries, as mandated by the Agreement on Trade-Related Intellectual Property (TRIPS) and the Berne Convention, work primarily in the interests of developed countries and copyright holders, predominantly multi-national enterprises. Credible economic projections as to how increased copyright protection will assist LDCs are rare and particular. In the current conjuncture, greater copyright protection equals increased outflows of foreign currency from LDCs to developed countries.

The Berne Convention, established in 1886, represents a legal “hangover” from the era of direct Western colonialism. Neither its reform nor its amendment is a practical possibility; rather, a global movement aiming for its repeal should be launched.

The main tasks of the moment for least developing countries are to create exemptions to copyright restrictions, figure out creative way to avoid copyright presumptions, and improve affordable access to materials. And providing assistance to such endeavours is the main task of the developed world if they wish to help, rather than further dominate, such countries.

### **2 - Copyright, Proprietary and Free/Open Source Software** (15 pgs; 7 recommendations)

Copyright-protected proprietary software is not the answer for the computing needs of LDCs. Such software necessarily incurs very high licensing costs and encourages unauthorised uses, is inflexible, cannot be adapted to local needs, provides narrow training opportunities, creates further technology dependence, and raises anti-competitive practices outside the abilities of LDCs to curb. Free/open source software (F/OSS) by comparison, is a much-preferred alternative and represents a transfer of technology to LDCs that fosters, rather than limits, their development and access to and production of information, including on the Internet. But “switching” to F/OSS rather than “fighting” existing computer copyright laws is a more practical way forward.

*It is recommended that governments in developed countries should develop “a favourable bias” towards the expansion of F/OSS in LDCs, provide funds for the training of F/OSS technicians from LDCs, propose and fund an international conference of F/OSS developers to build links between various LDCs and developing countries, establish public-private partnerships with F/OSS developers and LDCs, lobby the World Bank, the IMF and other international agencies to stop tying aid to the use of proprietary software, and set a “good example” with their own increased use of F/OSS.*

### **3 – Copyright and the Internet** (13 pgs; 8 recommendations)

Internet access and usage still remains extremely low in LDCs compared to developed countries; copyright, however, is not the main barrier to access. Wider usage will not occur until improvements are made to basic communications infrastructure. In the longer term, the Internet could potentially bring great benefits to LDCs, such as the peer-to-peer creation and sharing of knowledge and information among all peoples of the world. What needs to be emphasised is that providing access in LDCs to copyright-protected online materials would result in neither lost revenues nor extra costs for rights holders in developed countries; further, because information is a non-rivalrous consumption good, there would be no diminished access by developed countries.

Yet even before the “Internet revolution” arrives in LDCs, there are worrying examples of information blockages being established, such as the proliferation of user-pay passwords (or tollgates) and laws outlawing anti-encryption technologies. Moreover, the Internet also poses certain “threats” to LDCs which could further stratify the world into “information-haves” and “information-have-nots”; these dangers need to be appreciated. There are, however, a number of positive and free-access online initiatives that do exist and should be encouraged.

*It is recommended that all UK-hosted and Internet-based data sets of the type normally available to the public (e.g. through libraries) should remain open and free for fair dealing and educational purposes (e.g. the making of non-profit educational course packs for students). The terms and conditions of digital licensing schemes should be subject to adjudication before national copyright tribunals. Governments in developed countries should provide financial assistance to groups that have created “best practice” models of free online access. Publications that are derived from government funded research should be freely available online. Governments in developed countries, as well as those in LDCs, should not enact similar legislation to the restrictive US Digital Millennium Copyright Act.*

### **4 - Copyright, Education and Traditional Printed Materials: Some examples from Sub-Saharan Africa** (17 pgs; 8 recommendations)

While copyright restrictions are not the main barrier to accessing “hard copy” materials, which remain the dominant format of urgently needed educational materials in LDCs, they reinforce economic hurdles and create a further barrier by themselves. Examples include the need to pay copyright royalty fees for literacy campaigns and for anti-HIV/AIDS health education, as well as difficulties in translating materials into the wide range of African languages, in accessing materials for distance learning programmes, and in transferring rights from publishers in developed countries to their African counterparts.

The 1971 Appendix to the Berne Convention, itself a major compromise by LDCs and effectively gutted in earlier drafts by developed countries, especially the United Kingdom,

was supposed to help remedy the global information divide. But the Appendix has been an abject failure and its narrow approach to copyright exemptions does not meet the information needs of LDCs. Nor should the Reproduction Rights Organisation (RRO) model be exported to LDCs as it creates further barriers, adds unnecessary transaction costs, and acts primarily as a revenue collector for rights holders in developed countries.

Rather than creating even more restrictive copyright regimes, LDCs should seek to strengthen users' rights in their countries. For developed countries, assisting in dramatically improved access to printed materials in LDCs will require a minimum of sacrifices -- indeed often none -- and, in fact, will be in their long-term interests.

*It is recommended that a new country-wide licence system be created for LDCs that would allow free use of copyright-protected, hard copy works from developed countries for an initial 20-year period; all non-profit educational, research, public health, and related uses would be exempt from paying royalties. RROs are not required for such a system and LDCs should actively discourage the establishment of RROs in their own countries. World Intellectual Property Organisation (WIPO) activities in LDCs should stress both the "pros" and "cons" of copyright, not only the "pros" as is done at present. UK legislation governing one-sided, unfair contracts -- such as those that require assignment of copyright to a publisher as a condition of publication -- should be amended to cover intellectual property transfers. The criteria for determining what is a "developing country" should be reviewed; South Africa has a strong case for inclusion.*

#### **5 – Copyright & Intangible Indigenous Heritage/ Knowledge** (6 pgs; 3 recommendations)

Developed countries are regularly misappropriating, without consent, indigenous traditional knowledge from LDCs; this practice is a direct threat to the continued cultural survival of indigenous communities. Current legislation is wholly unsatisfactory and proposed model laws remain simply models. Copyright and its presumptions (e.g. requirement of originality and fixation) do not provide a vehicle for effective protection.

*Acting in consultation with indigenous communities, it is recommended that governments in developed countries should enact domestic legislation that would prohibit unauthorised importation of such items and assist in the creation of sui generis protection systems for indigenous traditional knowledge.*

#### **6 – Some Related Issues and Final Observations** (3 pgs)

LDCs should not follow the example of the US and the EU which have increased the duration (term) of copyright. The possibilities of prosecuting anti-competitive copyright practices within LDCs seem slight. Concentrated and powerful western interest groups dominate the global copyright agenda and indeed, the whole field of copyright law and treaty making has been subjected to regulatory capture by these groups. As a result, inflexible and one-sided copyright laws threaten to keep LDCs in a marginalised position and unable to benefit from a range of quite stunning technological developments in this area.

## **Appendices ( 26 pgs )**

Three lengthy appendices focus on:

a) the negative impact (e.g. for literacy programmes, for distributing anti-HIV/AIDS health materials) of existing copyright regimes on educational access to hard-copy materials in South Africa and LDCs ( D.R. Nicholson -Copyright Services Librarian, University of the Witwatersrand, Johannesburg, South Africa)

b) the range of problems that copyright-protected proprietary software creates for LDCs and why free/open source software is highly preferred (Federico and Oscar Heinz- Fundación Vía Libre, Argentina)

c) the dangers of exporting Western concepts of technology to countries such as Botswana and Uganda ( “Algorithms in Africa”, Wayne Marshall -Guinea)

A fourth appendix provides October 2001 country-by-country statistics on PC and Internet usage (International Telecommunications Union Report).



## Preface

1. Over the last five or so years, the establishment of the World Trade Organisation (WTO) and the signing of the Agreement on Trade Related Aspects of Intellectual Property (TRIPS), as well as the greater interest shown by governments, NGOs, the media, academics, and others across the globe have given intellectual property, both domestically and internationally, a much greater visibility. Today, intellectual property is a growing site of conflicts and controversies as well as a new source of power and wealth due, in part, to its re-conceptualisation as a commodity of world trade and the enhanced profitability and access possibilities that digital technology has opened up. Yet, it is patent-related, rather than copyright-related, questions which have taken centre stage: the patenting of genes, biopiracy, patents on pharmaceuticals and related issues are flash points for governments and peoples of both the North and the South, including the poorest and least developed nations.<sup>1</sup> The work and priorities of the UK's Commission on Intellectual Property Rights reflect this same focus. But as I have argued elsewhere (Story, 2002), copyright is "the sleeping giant" on the international intellectual property agenda, especially for the poor and least developed nations, and it is to the credit of the Commission that it has decided, after some deliberation, to commission a study on copyright issues.

2. This report takes an essentially instrumental approach to the purpose of copyright, that is, it views copyright as the legal allocation of private property rights by the state to serve a range of public purposes (Drahos). The subject matter, duration, and scope of copyright protection permitted and the related enforcement mechanisms --- which, it should never be forgotten, act as copyright restrictions for the rest of society, sometimes including the original creator --- should only be those which are necessary for the instrumental purpose of satisfying other values and goals: the creation of knowledge, the spread and sharing of knowledge, wider patterns of literacy, public access, and public use. Further, copyright, as an intangible property right, expresses a power relationship between persons and represents not only the state's grant of sovereignty to a private person but also power *over* other people and future distributions of power and wealth (Cohen). "Information means power" may be a cliché, but it has particular resonance for the remit that the Commission has requested in the writing of this report. In the context of this research, these understandings mean that we must appreciate, quite specifically, how copyright (a right primarily held today by Western corporations and, much less so, by individuals in developed countries) can serve the varied goals of poor nations and poor communities within them, how copyright can impede the realisation of these goals, and what steps can be taken to reduce these negative effects; the latter will sometimes mean avoiding copyright restrictions or reconfiguring power relations among the various parties -- creators, rightholders, users, and governments -- within the overall "cycle" of copyright.

3. There are a number of instrumental purposes that international copyright can conceivably serve and, in a brief report such as this, it is hardly possible to enumerate and canvass them all. As this report will examine the situation of copyright in poor and least developing nations and as improved education attainment is one of the leading, if not the leading, levers of economic and social development, particular emphasis is given here to the critical

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<sup>1</sup> Over past decades, a wide number of terms have been used to designate or describe countries outside the developed world; these include "the Third World", "underdeveloped or less developed or developing countries" or "countries of the South." All of these terms are problematic in various ways, as is the term "poor and least developed countries" used by the Commission. In this report, the latter term is used; the countries within this category are listed on at the start of Section 1.

relationship between copyright and educational improvement and the global spread of knowledge more generally. Such a focused approach was also chosen given the time constraints within which this report was prepared.

4. One commentator has recently written:

Intellectual property law as a whole seems ripe for wholesale reconsideration, both nationally and internationally. One might start with its fundamental premise: that the system of rights it establishes enhances the goals of desirable innovation, creativity, and the widest possible distribution of ideas, information, products and technology in the most efficient and, generally, best way. This premise is of course empirically unprovable, even if we all agree on what the “best way” means. It assumes that throwing a private property right around every activity with potential value in exchange and creating a market in such rights ultimately benefits not only the right-holders but also, in equal or at least reasonable measure, the communities of which they form part... (Vaver, 1997.)

Those communities are more and more becoming --- or have the potential, technically, to become --- the global community and, although not the exclusive focus of this report, the denial of benefits resulting from a lack of access to ideas and information is demonstrable. The most recent International Telecommunication Union country-by-country statistics on access to the Internet and the use of PCs (see Appendix 4) shows how uneven is the global access to this wonderful technology. In the current situation, partially, though certainly not exclusively, due to copyright restrictions, “there is a kind of OPEC of knowledge in which a few rich nations [including the UK] have a great deal of control over how and where books are printed, the prices of printed materials, and the nature of the international exchange of knowledge.” (Altbach) At various moments in this report, I have proposed various remedies for this highly unequal access, which is the predominate situation faced by all poor and least developed nations; existing remedies or more commonly, the absence of remedies, are, in particular, “ripe for wholesale reconsideration.”

5. The Commission has requested that this study provide advice on both (i) national IP regimes and legislation in developing countries, (ii) the international framework of IP rules and agreements (See Appendix 1). At certain moments in this study, such advice is given. Yet, as soon as one recognises, to take one example, that the most recent revision to the Berne Convention, the leading international copyright convention, required more than two rancorous decades to complete --- with no resulting appreciable gains for poor and developing nations (see Sections 4 and 5) --- and that all changes to Berne (which included 148 countries as of 15 October 2001) require the unanimous consent of all signatories, proposing a “wish list” of possible changes and improvements to Berne seems of relatively limited practical use at the moment. The peoples of poor and least developed nations cannot wait another 20 years for improvements. Rather, this report particularly focuses on *actions and steps that the United Kingdom government, including the Department for International Development (DIFD), could take* --- if it has the intention and the political will --- to make meaningful, global improvements to access to knowledge, to education, and to inter-communications between the peoples of the world, the latter so obviously a priority given the current offensive against Afghanistan as a response to the events of 11 September in the US. *In the same vein, it is recommended that other developed countries could take similar actions.*

6. This study is entitled “Intellectual Property Rights, the Internet, and Copyright” and the initial terms of reference made little reference to copyright in traditional “hard copy” formats, such as books. The Commission has taken the correct position, I believe, in agreeing that any analysis of copyright in poor and developing countries must also look closely at copyright issues in traditional printed formats. Section 4 is devoted to a brief study of how such issues are currently being manifested in Sub-Saharan Africa.

7. Because copyright in poor and least developed countries is such an under-researched area of study and because “the real experts” in this field live precisely in such areas, it was necessary to conduct quite extensive research -- mostly via telephone interviews and e-mail questionnaires --- on several major questions. The co-operation that we received was truly outstanding and we were given a great deal of rich, “on the spot” material not available elsewhere. In several cases, it was impossible to attempt to summarise such responses in a sentence or two and instead, two longer appendices have been included. Appendix 5, “Algorithms in Africa” by Wayne Marshall, a UNIX computer programmer and technical consultant living in Guinea, West Africa, provides a particularly sensitive appreciation of the role of computers, the Internet and technical development schemes generally in least developed countries.

## **Section 1 – Copyright and Poor/Least Developed Countries- An Overview of Some of the Issues and Impacts**

### **1.1 Countries included in this report**

The countries covered by this report include primarily those on the World Trade Organisation's recently issued list of the 50 least developed countries.<sup>2</sup> On occasion, reference is also made to some "middle-ranked" (or developing) countries in South America, Africa and Asia where some similar economic, social, political (and copyright-related) conditions prevail, though recognising that important differences exist as well.

### **1.2 Rich countries are main IPR beneficiaries**

Numerous studies have concluded that "... industrialised countries are the main beneficiaries of IPRs." (World Bank 2001). Several sets of recent statistics demonstrate the validity of this conclusion as well as the current paucity of intellectual properties within the least developed world. According to 1999 International Monetary Fund figures on the global trade in royalties and licences ( primarily derived from intellectual property), the US received a total of US\$36.5 billion dollars on its global exports and had a net surplus of more than US\$23 billion.(IMF) The UK was second, but trailed far behind with a surplus of US\$900 million. No poor or even developing country had a surplus and, in fact, not a single poor country had any calculable intellectual property revenues whatsoever. But these IMF statistics do not distinguish between copyright and patent (or trade mark) revenues. Three other studies have shown that US "copyright industries" ( including movies, TV, home video, music, publishing and computer software) generate revenues that are, for example, five times the export revenues of the US drug and pharmaceutical sector and that the total foreign sales and exports of US copyright-protected products totalled \$US79.85 billion in 1999. The overall value of "copyright industries" to the gross US domestic product has increased an astounding 360 per cent between 1977 and 1999 and currently totals more than US\$460 billion. (Economists Incorporated, Valenti, The International Intellectual Property Alliance.) Such figures dwarf the total gross domestic product of all of the fifty least developed countries and indeed of numbers of such countries when aggregated.

### **1.3 But will poor countries benefit?**

As "industrialised countries are the main beneficiaries of IPRs and given the challenges facing developing countries [let alone the 50 least developed countries], the former may find it in *their interest* to provide assistance to the poorest countries for the implementation of TRIPS." (emphasis added) Further, "TRIPS decidedly shifted the global of the game in favor of those countries." (World Bank, 2001) These conclusions are also uncontroversial. Expanding the scope of copyright protection/restrictions, increasing enforcement mechanisms, and setting in place the wider infrastructure of a "mature" copyright regime (e.g. the creation of collecting societies and rights organisations) *within poor and least developed countries* is, in at least one sense, in the interest of rich countries. Higher levels of

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<sup>2</sup> These countries include: Afghanistan, Angola, Bangladesh, Benin, Bhutan, Burkina Faso, Burundi, Cambodia, Cape Verde, Central African Republic, Chad, Comoros, Democratic Republic of the Congo, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gambia, Guinea, Guinea-Bissau, Haiti, Kiribati, Lao People's Democratic Republic, Lesotho, Liberia, Madagascar, Malawi, Maldives, Mali, Mauritania, Mozambique, Myanmar, Nepal, Niger, Rwanda, Samoa, Sao Tome and Principe, Senegal, Sierra Leone, Solomon Islands, Somalia, Sudan, Togo, Tuvalu, Uganda, United Republic of Tanzania, Vanuatu, Yemen, Zambia.

copyright protection/restriction within poor countries definitely do offer significant market and profit opportunities for Western created and owned copyright works; China, which joined the WTO in early November 2001, is the most notable emerging market. (Of course, if such developments further exclude poor countries from the much heralded “information society” and make no appreciable difference, for example, in their levels of education or basic literacy, one can ask whether this is actually in the interest of rich countries in either the short- or long- term. As well, if overall income and literacy levels in such countries do not rise markedly, such markets will remain marginal as copyright users/consumers.) Yet, the central question we need to ask here is: how would the creation of such a “mature” copyright regime be *in the interest* of a Benin or a Bangladesh or the 48 other least developed countries?

Significantly, most conventional analyses of the relationship between expanded enforcement of intellectual property rights and growth prospects/ possibilities for the underdeveloped world focus almost exclusively on the supposed benefits of increased patent protection.<sup>3</sup> To cite one example, a 21-page chapter in the World Bank’s analysis of IPRs and developing countries devotes but a single paragraph to the *potential* growth prospects that expanded copyright protection *might* open up for such countries. (Indeed, one very much gets the feeling from reading this study that its authors concluded that *they had to say something* about copyright and economic development.) Some of the cases chosen – for example, how expanded copyright protection in neighbouring countries could assist the export prospects of Lebanon’s film and television industry - are highly particular and difficult to generalise. And another example cited, how the establishment of professional collecting societies in Jamaica and Senegal might provide incentives for local musicians to record their music, overlooks the critical point that collecting societies and rights organisation even in such more developed countries as South Africa act principally as revenue collectors for foreign rights holders (Section 4.5). Indeed, a number of the world’s least developed countries became signatories to the Berne Convention more than 25 years ago (e.g. Benin 1961, Chad 1971 ) and none have seen significant increases in their publishing industries or the level of copyright-protected works in subsequent decades. Finally, to cite an often-mentioned case, the United States did not recognise foreign copyrights for more than one hundred years after it was founded (and, in one sense, not until 1986 (Merges) ), based on the thoroughly understandable logic that the enforcement of foreign-held copyrights would primarily benefit non-US rights holders and that it was better to borrow without permission.

The research for this report did not find a single credible economic projection/model as to how increased copyright protection would *significantly expand* either economic development or usage *within the least developed world (or within the developed world)* of copyright-protected materials produced by least developed countries in the current conjuncture. One recent proposed World Bank model/projection provides a negative example. At a June 2001 in Washington, D.C., the World Bank held a “Workshop on the Development of the Music Industry” and, after noting that this industry was currently not “a significant revenue earner” in Africa, a number of contributors suggested that the history of Nashville, Tennessee, home of the multi-billion dollar US country music recording industry, provided a good model for poor countries to emulate. They called it the “Nashville in Africa” project. As Paul Collier, director of the World Bank’s Development Research Department explained:

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<sup>3</sup> Other seldom mentioned or cited analyses do challenge or problematise this patent/ economic development relationship (e.g. Oddi, Anderfelt).

You only need one or two real successes --- you only need a Nashville --- and you have transformed the export structure of an economy ( of most African states) away from primary commodity dependence and that will have major effects....The Nashville example is potent here in showing how a poor locality can be turned around. This is the sort of thing that can capture the politicians' imagination. (Collier, World Bank, June 2001).

This approach may capture the imagination of certain politicians in least developed countries --- but then so does creating and outfitting a modern army--- but it hardly likely to capture the imagination of serious economic researchers. What is first overlooked by the proposed "Nashville in Africa" project is the fact that Nashville is located in the centre of the world's largest market for recorded music...which is hardly the case with a city in Senegal or Mali. Second, this simplistic notion of cross-cultural and cross-geographical industrial "transplantation" has been widely criticised in the international economics literature. Third, while it all very well to talk about the need to the establish collecting societies and a better music industry infrastructure in Africa ( and indeed there are some insightful comments in this report), there are no figures provided as to whom will primarily benefit if a sophisticated collecting society infrastructure was to be established in Africa : Western-based recording companies, such as EMI,<sup>4</sup> operating either inside or outside Africa making money from African uses of their African and Western music within *or* local musicians and local companies.<sup>5</sup> Finally, the World Bank session rather overstated the economic prosperity of Nashville and Tennessee.<sup>6</sup> So again we need to ask: which countries will primarily benefit from expanded copyright protection?

As explained in Sections 2 and 4 in particular, copyright or the absence of copyright restrictions is *not* the main barrier to access or use of information --- let alone its production -- in such countries. As one interviewee put it, " when most schools across Africa do not have anywhere near enough books or a photocopier or even a single computer, copyright is not really an issue, I wish it was." (Darch) So the burden of proving that increased copyright protection, as envisaged and required by TRIPS, will be of demonstrable benefit to the poor and least developed countries remains with the proponents of TRIPS. The main beneficiary will be rich nations who, not coincidentally, are the main supporters of TRIPS.

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<sup>4</sup> See the comments of Gerard Seligman, EMI Records, London ( World Bank, June 2001).

<sup>5</sup> This point about the "non-discriminatory" nature of copyright is developed further in sections 1.4, 4.5 and 4.6. One participant at the session made an interesting point about the burgeoning world music scene and its increasing copyright-protected spread by recording companies such as EMI. " Just as the youth of America and Europe are becoming interested in African popular and traditional music, that same music is falling out of favour in Ghana itself. In Ghana, live drummers and horns-men are being put out of work. Synthesizers are replacing them." ( Collins, Professor of Musicology, University of Ghana, World Bank, June 2001).

<sup>6</sup> In 1998, Tennessee's median household income of US\$32,602 was far below the US national average of US\$38,233 and lower than that of six of the eight states which border it; even neighbouring Alabama, which few would consider a prosperous state, had a higher median income. (Tennessee Economic and Demographic Comparison) Within Tennessee itself, Davidson County, which is predominantly composed of the city of Nashville, had a per capita income in 1990 that was 25% below the highest county in Tennessee and 13 % of its inhabitants lived below the poverty line. (Tennessee County Profile, Davidson County.) In other words, creating a handful of country and western multimillionaires and multi-billionaire recording companies is far from the typical pattern and Nashville has hardly "gone from being dirt-poor before 1940 to an affluent center" as the managing director of the one of the workshop's sponsors claims. (Penna, World Bank, June 2001)

#### **1.4 Reciprocity in international copyright relationships**

Conversely, and taking proprietary software as an example, strict enforcement of copyright laws in poor countries would, at least for the foreseeable future, *dramatically decrease* the already low computing capacity in such countries given that most computers there currently run on unauthorised software. Already scarce goods would be subjected to further state-created scarcity, the main economic effect/consequence of copyright laws. Nor would strict copyright protection of proprietary software stimulate its local creation by a locally owned and locally staffed software development industry. In fact, the structural and market model of Western-owned copyright-protected proprietary software *directly discourages* such development. The choices facing many well-trained software developers in the poorest countries are: a) to become an installer of Microsoft's Windows, b) to leave the country, c) to join into the rapidly burgeoning free/open source software movement. (Section 2 and Appendix 3) If a copyright regime could be fashioned which gave copyright protection only (or even predominately) to locally created and produced works, increased level of copyright protection would potentially be a much more important catalyst for local economic development and potentially lead to a net benefit. Such a regime would, for example, rupture the current equation which means that increased copyright protection in poor countries = increased outflows of foreign currency to pay for the use of foreign produced works = further inequalities in the global balance of payments.<sup>7</sup> But, of course, this model is most definitely *not* the model of international copyright regimes which, to give one example, the Motion Pictures Association of America had in mind when it became such a strong proponent, indeed active lobbyist, for the TRIPS agreement. TRIPS is overwhelmingly concerned with protecting existing markets and opening up new ones for the "copyright industries" of the developed world and, despite the trade enhancing rhetoric found in the preamble to TRIPS, it is not aimed at either the creation of new producers in poor countries or giving them new markets in the developed world. In the relationship between the developed and least developed worlds, the possibilities of actualising the reciprocity principle of international copyright law remain essentially a theoretical and rhetorical one.

In this regard, we need to emphasise a key distinction between international copyright and patent protection. When the poorest and least developed countries became signatories to both the Berne Convention and TRIPS (and today, the two are intertwined), they were agreeing to protect within their own national borders all copyrighted works produced *essentially anywhere in the world* for, in most cases, a term of the life of the author, plus 50 years. Patent law, by contrast, does not operate on the same principle; patent protection generally remains limited to a single (and sometimes regional) jurisdiction in most cases. The main point is this: the presumptions of existing international copyright regimes underscore what Cohen meant when he wrote that property laws determine "future distributions" of wealth. Both the highly uneven national levels of copyright-protected works (see section 1.2) and the structural and long-term "lock-in" effects of reciprocal copyright protection make a compelling case for creating and carving out, at least for the next 20 years, significant copyright exemptions for the least developed and developing countries. For example, the necessity of establishing a broad copyright and illiteracy exemption for the poorest nations is explored in Section 4. Other key exemptions are mentioned at various moment in this report and they reinforce the overall theme of this report: *creating exemptions to copyright restrictions, figuring out creative way to avoid copyright presumptions, and improving affordable access are the main tasks of the moment for the least developed world. And*

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<sup>7</sup> It will be a very long time, for example, before the US market for African-produced films is even 1 per cent of the African market for Hollywood's works.

*providing assistance to such endeavours is the main task of the developed world if they wish to help, rather than further dominate, such countries.*

If such steps are neither theorised nor taken, the very first preamble to TRIPS – “desiring to reduce distortions...to international trade” will have no meaning in practice and, indeed, TRIPS will only *further distort* international trade, let alone income levels and levels of access to information and knowledge across our globe. As a South African entrant to an international intellectual property essay contest has written,

Woe is the life of the modern day student living in ‘Darkest Africa’ for obviously we are still being kept in the slave quarters of the world. Harsh words? My friends, try and live in a society where such Acts as the Intellectual Property Acts of the world impedes your advancement in life.” (Szente)

### **1.5 Copyright as a Western concept**

Two mistaken assumptions ground much of the published analyses of copyright issues in the least developed world. First, while access by such countries to knowledge, especially technical and scientific, produced in the developed world remains a key international goal, this does not mean that developed countries are the principal repository of ‘knowledge’ in the world or that the developing and least developed are somehow ‘backward’ and lacking in inventiveness and ideas (Gana). To think otherwise is a typical conceit of developed countries and closely linked to the notion that, without copyright and strict copyright laws, the expression of ideas and creativity would be severely stifled or would cease altogether. Many of these countries already possess vibrant cultures and create a wide variety of expressions. There are, for examples, hundreds of choirs in South Africa and their flourishing is completely unrelated to copyright protection (Darch interview).

Second, and in the same vein, it also needs to be appreciated that copyright, as a legal and philosophical concept, is the product of Western societal development at a particular historical moment and remains a foreign, indeed strange, concept in many other societies (Geller). For example, a number of societies, including indigenous societies, in the less developed world take a radically different approach as to “what constitutes property or what may be rightfully be the subject of private ownership” (Riley); such societies consider, for example, that the “copying” and sharing of expressions within a given community is a signal of respect and recognition, not of piracy or rip-off or the infringement of a private property right (Section 5). TRIPS thus is not only a trade agreement, it is also a multi-faceted project to export to all corners of the globe a particular set of values and presumptions about the need to “propertise” the expression of ideas and to universalise cultural and creative norms rooted in the developed world.

### **1.6 The contradictory premises of copyright**

When examining international copyright regimes, policy makers and rights holders generally make several other assumptions: a) there is a set of core copyright doctrines that *should be similarly followed* by all nations (or at least by all WTO members) and *are being followed* by all developed countries; b) that “harmonisation” of copyright is unquestionably *a fair and good thing*. A full-length law review article (and here taking the US law review meaning of the phrase “full length” e.g. 500 footnotes) would be required to do justice to each of these matters. Briefly, here are a few overview conclusions: Far more than mere commodities of



trade, let alone of international trade, writings, story telling, music, art, and other forms of expression are central to the cultures of all nations and peoples; these national cultures are, thankfully, not homogenous across the globe. Further, the meaning, use and protection of such expressions are also conceived of quite differently in different countries. To attempt to put in place an inflexible “one size fits all” regime for the encouragement, protection, and use of such expressions is an extremely fraught policy-making exercise. Although the developed countries expect less developed countries to apply some supposedly naturalised and universal copyright doctrine in basically the same way as the former do, what one discovers upon closer examination is that not only are there significantly different approaches to copyright among various developed countries, but that some national copyright regimes operate in blatant disregard of conventions to which they are signatories. In other words, national copyright regimes in developed countries are the product of quite different histories and, among other things, of the relative strength and bargaining/lobbying power of different groups and copyright industries.

Although the US is a signatory to the Berne Convention, which requires quite sweeping protection of moral rights (Art. 6<sup>bis</sup>), the US provides only the most marginal statutory protection of moral rights...and then only for visual artists (*The Visual Artists Rights Act*, 1990.) That TRIPS specifically exempts the requirement that moral rights be protected (Art. 9 (1) ) is not the result of logic, but again of lobbying power. The possibilities of relying on a parody defence to copyright infringement are very different in France, Spain, and the US in comparison with the UK. Similarly, because of the historic strength of the US restaurant, hotel and “juke box” industries, the “juke box” exception in that country has long required the compulsory licensing of music. (*US Copyright Act*, s. 116) Yet when Lebanon recently considered the possibility of the compulsory licensing of computer software (Section 2), the US stated that such licensing contravened international copyright law. Equally, the UK’s *Copyright, Designs and Patents Act 1988* (CDPA 1988) is not the product of consistency or logic.<sup>8</sup> As Porter wrote in an overview of the CDPA 1988, “copyright law is not derived from one overarching principle, but from the negotiation of a series of contradictory premises.” (Porter) These contradictory premises need to be appreciated by both the developed and least developed worlds.

When, in Section 4 of this report, the history of the bargaining behind the Appendix to the Berne Convention is discussed, it becomes clear that it was not the logic articulated by developing countries which resulted in such limited achievements but rather their relative powerlessness (*viz. a viz.* the copyright industries of the developed world) to successfully negotiate a substantive change in the international copyright regime. In the same manner, if the least developed countries, concerned about the wholesale importation of Western values, for example through books, films, or via The Internet, wished to establish a cultural exemption to copyright ( Section 4), they could logically rely on the provisions of European Council Directive 89/552 (1989), the “Television Without Frontiers” Directive, as a precedent. Whether they would be successful is quite another matter. More importantly, unless developing and least developed countries create a strong oppositional coalition around copyright issues in coming years and articulate their own exemptions to serve their own needs ( e.g. an “illiteracy exemption” from copyright) the increasingly rapacious demands of the entertainment and software industries of the developed world will continue to dominate

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<sup>8</sup> Examine, for example, S. 301 (the “Peter Pan” exemption) or how the traditionally equal duration of protection for broadcasts, sound recordings, and films was suddenly ruptured by the truly breath-taking “double leap” in the calculation of the duration of films (CDPA 1988, s. 13B).

the international copyright agenda.<sup>9</sup> What is a more important priority for our world as we begin a new century: outlawing circumvention devices for ebooks or allowing the tens of millions of illiterate peoples across the least developed world to read their first book?

As for the question of copyright harmonisation, the periodic review and amendment of regional and international laws and conventions has, *without exception*, always resulted in harmonisation with the highest existing standard protecting rights holders and...never in a lower one that would be of more benefit to users ( See, for example, the EC Harmonisation Directive). The duration is always increased, the scope of protection always widened. Hence, as poor countries are mainly users of copyright, their own national interests have repeatedly suffered from these harmonisation initiatives. Conversely, the US has given no intention that it favours the export of (or global harmonisation) with its own somewhat more liberal “fair use” provisions for copyright users in other countries.<sup>10</sup> Finally, in the case of the poorest and least developed countries, whatever international harmonisation occurred in the formulation of the Berne Convention took place at a time when most of them were the colonial outposts of various European countries and had no voice or input.

## **1.7 Repealing the Berne Convention**

To conclude this overview: For the countries of the least developed world, the Berne Convention represents a legal hangover from the era of direct Western colonialism. The imposition of a highly restrictive regime ---and most commentators agree Berne is “highly restrictive” --- may have had a certain resonance in some parts of the world in 1886 when Victor Hugo and other authors of the day successfully lobbied for its creation. But in the current era, Berne is increasingly anachronistic and inflexible, especially for the least developed nations of the world and their own priorities (Section 4, Appendix 2). As was mentioned above, the overwhelming majority of such countries did not exist as independent countries when it was established. Moreover and unlike some other international agreements which were reformed in the post WW2/independence era of the 1950s and 1960s (see Section 4), Berne represents an unreconstructed 19<sup>th</sup> century international regime which, as was mentioned in the preface, cannot essentially be amended; the latest set of amendments took more than two decades and , at that, represented mere tinkering. As “a minimum but no maximums” standards convention, Berne is, by its very nature, protectionist as well as trade distorting, especially for countries that are predominantly copyright users rather than producers. If tariffs on trade were treated in the same fashion as increased duration laws and WIPO treaties and directives are treated, the WTO’s dispute settlement mechanisms would rapidly become clogged.

Why, more specifically, is Berne anachronistic? It is the product of an era when authors, rather than large multi-national corporations, the “copyright industries” of the US and Europe, were the principal rights holders. And, of course, the digital and Internet eras, in which there are zero marginal costs for increased access and distribution, including to poor nations, were still more than 100 years in the future. Nor were the notions of intellectual property as a public good that is non-rivalrous in consumption fully appreciated in 1886, despite Thomas Jefferson’s insight of almost 75 years earlier that “He who receives an idea from me, receives instruction himself without lessening mine; as he who lights his taper at

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<sup>9</sup> See, for example, the anti-encryption provisions of the WIPO Copyright Treaty and, in the US, the *Digital Millennium Copyright Act* (DMCA).

<sup>10</sup> Moreover, copyright laws and practices in countries outside the US prohibit various educational uses of US-owned copyright material in these countries which are allowed in the US under its “fair use” guidelines.

mine, receives light without darkening me.” In the era of the Internet, it simply *does no harm whatsoever* to a publisher from a developed country, for example Reed Elsevier, if a Mauritian student reads and uses an online article from a Reed Elsevier journal without paying for it. There are neither extra costs of production or distribution nor lost market opportunities; that student’s library in Mauritius will, in all likelihood, be unable to afford a subscription to the hard copy version and the usually extra costs of a digital licence for the very same material (Section 3). We must break from the hegemony of the notion held by most publishers that all unpaid uses are illegal uses and represent lost sales. If this logic had prevailed in the 19<sup>th</sup> century, public libraries would never have been established. (Section 3.6) Finally, Berne is constructed from a romantic conception of authorship, which has not only been thoroughly discredited (Woodmansee) but has only marginal resonance within the cultures of the world’s least developed peoples (Coombe, Section 5). As detailed in Section 4, the provisions of 1971 Appendix to the Berne Convention, said to be Berne’s post-colonial reconstruction and a response to the “international crisis of copyright” in the 1960s (Johnson), have been a failure for poor countries. As Ricketson concludes, “it is hard to point to any obvious benefits that have flowed directly to developing countries from the adoption of the Appendix.”<sup>11</sup> 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 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.

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<sup>11</sup> At the same time, we need to probe the reasons behind Ricketson’s other related conclusion that “only a handful of developing countries have so far availed themselves of its provisions.”

## Section 2 - Copyright, Proprietary and Open Source Software

### **2.1 Introduction: The Copyright Context**

Beginning in the early 1980's, a number of governments in the developed world decided, after extensive lobbying by some (though not all) sections of the software industry, that computer software was analogous to the traditional copyright category of an "original literary work of authorship" and hence should be protected as a literary copyright.<sup>12</sup> Whether this an appropriate categorisation and whether software should receive the same protections, in terms of duration or scope of protection, as a novel, a short story, or a poem is still a subject of debate; in the opinion of this researcher, the establishment of *sui generis* regime would provide much more balanced protection/restriction, be more appropriate for this particular type of technology, and be collectively beneficial to society, certainly for users, but also for the many of the most creative sectors of the software industry itself, especially smaller companies. What is usually "forgotten" is that many of the "break-through" developments in computer software design occurred before software was protected by copyright and that some of the most exciting developments of the past decade, such as the Linux operating system, were explicitly established on a non-proprietary and, hence, sharable basis. Indeed, in the current conjuncture, as this section discusses, the two models of software --- one proprietary and closed source and the other based on a sharable source code --- face each others as "David v. Goliath" rivals; the ultimate victor will determine much of the future of software use and access, including for the least developed nations.

But to return briefly to the evolving legal regime, national copyright legislation in a number of developed countries, such as Japan, the US and across Europe, was amended in the 1980s to explicitly put computer software under the literary copyright umbrella; regionally, various treaties and directives (North American Free Trade Agreement, various EC directives) did the same thing, and internationally, both the 1995 TRIPS agreement (Art. 10 (1)) and the 1996 WIPO Copyright Treaty (Art. 5) state that computer programmes must be protected by copyright. Although TRIPS (Art. 66 (1)) states that least developed countries will not be required to apply this section (and many other sections of TRIPS) until 2006, this deadline is fast approaching and, in the end, they (and all other WTO members) will have no alternative but to protect computer software under their own national copyright laws. In any event, the WIPO Copyright Treaty provides no "transitional arrangements" for least developed countries.<sup>13</sup>

### **2.2 Closed source copyright-protected software is not the answer**

In both the analysis that follows and the recommendations made at the end, this report concludes that *copyright-protected closed source proprietary software is not an appropriate technology, in most cases, for least developed countries*, either for their basic computational

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<sup>12</sup> The essential argument is that the thousands or even millions of lines of binary code found in a programme -- the series of instructions ( that is, the symbols "0" and "1" found in infinite patterns in an object code) which are given to the computer hardware ---can be best understood, as a matter of legal classification, as forming a literary work.

<sup>13</sup> In a number of developed countries, patent law also protects software, but this is an issue outside the scope of this report. In the coming decade, we can expect that a number of developing and least developed countries will be encouraged/ pressured to embrace this standard as well; see, for example, the terms of the US-Jordan Free Trade agreement which require Jordan to protect software and business method patents under its national patent laws; even the countries of the EU have not yet gone as far as this in expanding the scope of their patent regimes to cover the latter type of software.

needs, including in the critical sphere of education, or for their wider economic development. Indeed, the fact that such software must be protected, either now or at least by the year 2006, as a private property right in such countries provides a further reason why copyright protection and the related rights of ownership (e.g. duration of protection continues until the life of the software “author”, plus 70 years) is so problematic. Instead, *free/open source software is a much-preferred alternative for these countries*. However, before we can commence this analysis, a brief (and highly simplified) technical background is required concerning the differences between the two basic types of computer software.

### **2.3 A brief technical background**

a) Proprietary software – How to protect or not protect the source code ( the internal programming language code) of software is at the heart of most legal, policy, and practical debates about software; the issue encompasses both operating system programmes (e.g. Windows) which manage the internal function of the computer, and application programmes ( e.g. Microsoft Word) which perform specific data processing tasks for users. The source code may be protected by trade secret law, by copyright law ---our focus here---, by patent law, or left as a sharable, non-proprietary resource.<sup>14</sup> The code of a programme is what makes it particularly valuable and transforms it ---potentially at least --- into a creative tool that can be used to solve a range of problems and to act as a catalyst or building block for further developments and new applications. In other words, the source code is what makes software a “living”, adaptable technology that is capable of improvement and modification and not simply a fixed and a pre-packaged solution.

However, giving copyright protection ( and trade secret and patent protection as well) to software programmes and their codes transforms them into closed source proprietary software with all of the traditional indicia of property ownership; unless special exemptions or licences are created (and they rarely are), this code cannot be copied, shared, modified, redistributed, or reverse engineered by other software developers or users. Usually such programmes are licensed rather than sold and the licence contains all of the above prohibitions, as well as others. The license may permit use of the software on a single computer or require extra charges for each additional computer using the software ( e.g. for schools and colleges.) Further, the code used for application programmes, which make up the bulk of computer programmes today, must be compatible with the code found in the operating system. “Ahead of the crowd, Bill Gates located the sweet spot in the business of bits and bytes; as a provider of a “platform”, Windows is essentially a collection of building blocks that developers need to create applications.” (Economist, 18 October 2001). Given the dramatic increase in computer usage over the past decade at least in the developed world (see Appendix 4 for country by country comparisons) and given the ancillaries that spring inherently from code “ownership”, especially for an operating system such as Windows that has become the world standard, we can see how closed source copyright-protected computer software can come to represent substantial *power over people* (Cohen)

b) Free/Open source software – A recent report entitled ‘Free Software/Open Source: Information Society Opportunities for Europe?’ gives a useful summation of the main

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<sup>14</sup> Perhaps the best exposition of these issues, including an illuminating technical exposition for those not familiar with computer software, and how the current legal regime developed can be found in Merges, Chapter 7 – Protection of Computer Software, 829-1036; although this book focuses on US law, the jurisprudence in other countries, such as the UK, is highly derivative of US law and cannot be understood without a background in US software statute and case law.

features that characterise free (open source) software. This alternative approach means that users have “the freedom to:

- Use the software as they wish, for whatever they wish, on as many computers as they wish, in any technically appropriate situation.
  - Have the software at their disposal to fit it to their needs. Of course, this includes improving it, fixing its bugs, augmenting its functionality, and studying its operation.
  - Redistribute the software to other users, who could themselves use it according to their own needs. This redistribution can be done for free, or at a charge, not fixed beforehand.
- It is important now to make clear that we are talking about freedom, and not obligation. That is, users of an open source program can modify it, if they feel it is appropriate. But in any case, they are not forced to do so. In the same way, they can redistribute it, but in general, they are not forced to do so.

To satisfy those previous conditions, there is a fourth one, which is basic, and is necessarily derived from them:

- Users of a piece of software must have access to its source code. (Working group on Libre Software).

To facilitate these various freedoms and to make sure that the source code does not become the private or exclusive property of any one particular software developer or a group of developers, the pioneers of the free software movement, and in particular the US computer programmer Richard Stallman, developed what is now known as the General Public Licence (GPL). Its main purpose is to ensure and reinforce a sharing ethos with the source code of programmes such as Linux ( the basic free/ open source operating system). Under the terms of the GPL licence, the user has the right to improve the code to her/his specifications but all such improvements must be shared with the general pool of users. “ Intellectual property is not a part of the business model so piracy is not at issue.” (Halbert)

It should be noted that open source software, that is, an application programme running on the Linux operating system ( e.g. Oracle) may be protected by copyright if its developer /owner requires or wants such protection. Linux, by itself, does not have the features of proprietary software. (As well, a great deal of free software, such as Apache, runs on Windows and there is plenty of free software that operates on a somewhat different licence than GPL.)

The import of these radical differences in approach will become clearer in the next section when we try to apply both paradigms to the least developed world.

#### **2.4 Why free/ open source software is the preferred alternative for poor countries**

There are a number of reasons why closed source proprietary software is not an appropriate technology for poor and least developed countries and why open source software (OSS) and GPL/ Linux systems are far superior, both in the short and longer terms. Among the more important factors favouring OSS and GPL/ Linux are the following:

##### **a) Proprietary software prices are beyond the reach of all but a small elite in the least developed countries.**

Proprietary software and the requisite licences (e.g. for schools) are extremely expensive, indeed beyond the capacities of all poor and least developing countries and the vast majority of developing countries. Mexico provides a particularly graphic example:

Mexico's Scholar Net project [involving 140,000 schools] .... estimates it would have cost at least US\$885 to install Windows 98, Microsoft Office, and a server running Windows NT in each school computer laboratory, which works out to about \$124 million for 140,000 laboratories *for software alone* (emphasis added). By comparison it costs US\$50 to purchase a single set of installation CDs and a manual for RedHat Linux which can be duplicated and reinstalled without limits under the terms of the open software license. [Installation costs must be added to this cost.] (White)

If Mexico, a developing country, has concluded it cannot afford closed source proprietary software for its schools, how can the least developed countries --- Madagascar, Malawi, Maldives, Mali, Mauritania, Mozambique, and Myanmar (to take the "M's" from the WTO's list of least developed countries) --- do so either? Microsoft generally follows a practice of charging the same price for its software products around the world *without regard to widely disparate average income levels* (Reuters, 16 October 2001; see also comments of Tony Roberts in section 2.5) The same is true with regard to educational software licenses; Microsoft licensing officials in Vietnam and Ecuador have confirmed that the "per seat licensing fee" for universities in those two countries is essentially the same basically the same as Microsoft charges Harvard or Oxford University; an elementary school in Soweto is treated the same way as is a school in a suburb of Boston.<sup>15</sup> In fact, numbers of our interviewees checked local prices of in countries such as South Africa and Argentina and found that prices were even higher than in the US ( e-mail correspondence on file); part of this price differential can be explained by higher hardware costs ( which included pre-loaded software) in these less competitive markets. And numbers also gave concrete examples where the high prices of software were the main barrier to the adoption of computer systems by local governments, hospital and health care facilities in poorer regions, and numerous other organisations.<sup>16</sup>

In comparison, the basic Linux software system can be downloaded from the Internet for free, though there will likely be follow-up and servicing/repair charges. But proprietary closed source systems also require and encourage service contracts. ( See also b) below.) Most importantly, individual licensing charges are not levied for use by each individual computer, this is software that is shared.

As numerous studies have demonstrated and as our interviewees emphasised, the high cost of proprietary closed source software is one of the leading causes of the extremely low level of computer use and ownership in poor countries (see Appendix 4) and the leading cause of the widespread unauthorised computer software that is used in such countries.<sup>17</sup> In least developed countries, copyright laws giving protection to closed source software act as a definite barrier to access, not as a facilitator of use or access.

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<sup>15</sup> One relevant statistical example: Windows and Office licences for 100 PC's at a university anywhere in the world would cost US\$5,500 (April 2001 e-mail correspondence)

<sup>16</sup> The costs of software are sometimes a "forgotten " item in the budgets of companies, organisation and governments in the developed world. But a recent study underlines the importance of software costs in poor and developing countries. "A software licence that costs say £500 is not a great barrier for most UK companies; it is worth paying to save a few days (or even hours) of employee time. In the developing world, this is not true and free desktop software looks much more attractive." (Peeling)

<sup>17</sup> "Any programme that supports proprietary solutions is counter productive and feeds the piracy malady which characterises computer usage in South Africa." ( Buccellato e-mail.)

b) Proprietary software does not allow access to or sharing of the all important source code

Whether and how the all-important source code can be used is critical to software for operating systems and application programmes. As mentioned above, the proprietary closed source model keeps this code a non-accessible code a secret and non-sharable; free/ OS software requires that it be made available to all that want or need it (or at least under the terms of the GPL and other licences.) Miguel de Icaza, a Mexican-born open source software developer who now is president of Boston-based Ximian, explains that

The beauty of free software...is that part of the freedoms you receive is the freedom to learn from other people's techniques, strategies, and focus on problem solving. Something that has been unheard of in this industry (although it is a pretty common thing in science). So people have a chance to join the effort, and be part of the team of people that are producing knowledge, culture and, as a result, wealth. (Miguel de Icaza Tells All)

It is this unrestricted access to the source code which not only creates the potential for a “spin off” IT sector to grow in developing and least developed countries ( see section (e) below), but also allows users and developers to create their own software tailored to their own needs and their own national and regional languages.<sup>18</sup> As well, access to the source code allows users or members of a users group to “de-bug” faulty programmes and builds self-reliance in permitting them to do their own repairs and servicing. (Developing such skills ,of course, does requires training.) This self-help approach, not permitted or feasible with closed source proprietary software, can dramatically cut ongoing computer usage costs, a factor of significance importance in poor nations.

c) Similar licences for widely disparate situations

A number of interviewees confirmed that the proprietary software licences made available in poor and least developed countries are, in most cases, exactly the same as the licences offered, for example, in the US or the UK; the same “one size fits all” restrictions apply no matter what are particular computing requirements, needs, and financial capacities of the end user, whether she/he is located in Accra or Atlanta.<sup>19</sup> The problem does not arise only with proprietary operating system software. A professor at the School of Architecture at the University of Natal in South Africa explained that, because of licensing restrictions, most of the schools poorer students, particularly from Zimbabwe, were not able to afford the purchase of home copies of the specialised 3-D modelling software needed for architectural design; the software licence restricts use to “at school” use. (Wang interview.) Such global market strategies and business models, let alone the underlying philosophy, can hardly meet the urgent computing needs of poor and least developed nations.

d) There is an absence of broad computer literacy and technical skills offered by proprietary software training schemes

Some closed source proprietary software companies, such as Microsoft, directly operate or fund or make significant “philanthropic” financial contributions across the globe to a range

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<sup>18</sup> Appendix 5, for example, describes how this individual tailoring has been done at the Kibaale Children’s Centre in southern Uganda.

<sup>19</sup> As a Ghanaian software developer told us, “ the market here is too small for locale-specific versions of software and consequently. We have UK/US versions resold here. As is.” ( Sohne e-mail)



of software training programme and schemes, including those located in least developed countries. Sometimes the contributions total in the tens of millions of dollars, such as a recent Microsoft contribution to the Mexican government. But as Federico and Oscar Heinz write:

The knowledge content of those programs, however, doesn't go any further than providing skills in the use of their proprietary software, and contributes little if anything to the comprehension of the general mechanisms that come into play. They don't teach the user how to use a word processor, for instance, but how to use a very specific, proprietary word processing program. Far from contributing to software literacy, these educational programs are marketing tools designed to produce users that are dependent on a particular program. People who attend these courses are typically unaware even of the existence of alternative solutions, and completely at a loss when confronted with a different program to solve the same need. (Appendix 3)

Similarly in Africa where computer Schools and “computer academies” are “a dime a dozen”, such institutions “use Microsoft as a matter of course” and graduating students lack broad computing skills. (Buccellato interview)

This is a serious problem. Not only is badly needed computer literacy not broadened in poor countries, but a technological “bias” is also created and students end up with a particular type of non-transferable tech/skills transfer from the developed to the less developed world. There is a long-time slogan in the international development movement that goes: “If you *give* a man a fish, you feed him for one day. If you *teach* a man to fish, you feed him for the rest of his life.” The closed source proprietary software training model re-writes that slogan: “Teach a man (or a woman) to fish, but only how to fish in your river and charge annual licensing fees every time he or she wants to put their net in your water.” Such proprietary software training schemes fail to live up the promises made in TRIPS that developed countries shall “provide incentives to enterprises and institutions” within least developed countries “for the purpose of promoting and encouraging technology transfer...in order to enable them to create a sound and viable technological base.” ( TRIPS Art. 66 (2) )

e) The inflexibility and technical “biases” of proprietary software further lock poor and least developed countries into a pattern of dependency and economic stagnation; open source systems promote technological self-reliance and independence.

But the essential problem with closed source proprietary software for poor countries extends far beyond the narrowness of training schemes for proprietary software. Here is how Miguel de Icaza, puts the case for the role of free software in developing countries ( and by extension in least developed countries.)

I believe that Free Software will help countries with developing economies (like Mexico) to get a competitive advantage that they have lacked for so long. Most of these countries missed the industrial revolution, and for one reasons or another, they depend on external technology to keep up with the times. Free Software helps in the fraction on depending on external technologies. For example, 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). The case of Mexico is the one I am most familiar with: Mexico does produce very little technology,

depends a lot on foreign technology and pretty much our main exports are raw materials. 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.(Miguel de Icaza Tells All)

Another open source pioneer, Ivan Moura Campos, prime developer of Brazil's Popular PC project, believes countries such as Brazil will not overcome the so-called "digital divide" by relying solely on imported technologies, such as copyrighted proprietary software. "We realised that this (the lack of access) was not a First World problem. We are not going to find a Swedish or Swiss company to solve this for us. We would have to do it ourselves." (Anderson) One of our interviewees underlined the "brain drain" problem and its relationship to the proprietary model. "Our human resources are limited in this regard and the last 6 or so years has seen a huge outflow of computer personnel from South Africa - mostly to Australia or North America. It's simply not an option; access and affordability are just not there." (Buccellato) Linux, originally developed by a Finnish programmer, and free software systems generally emerge as examples of genuine technology transfer, a sharing of computing resources originally developed in the developed world. And OSS developers are still permitted the freedom to acquire copyright in the particular programme they have created.

Ignoring here the complex question of the "network effects" of software (see Merges, Chap. 7), one example of the problems endemic to closed source proprietary software, especially in operating systems, is that a company such as Microsoft is permitted to bundle a wide number of other computing products into its Windows ( and now Windows XP) operating system. Such practices not only capture the global market in operating systems but many of the ancillary activities related to day-to-day computing as well.(See also 2.5 c below)

The nub of the case against the company is this: why should it be allowed to bundle products like media player into its operating system for "free" instead of being required to distribute them as stand-alone extras?...Who knows how much innovation, especially from smaller firms, has been stifled at birth because of the impossibility of competing with what Microsoft is bundling in free? (Keegan)

Once again, if software developers in technologically advanced countries such as the US and Europe cannot compete with Microsoft in the application programme market, how can software companies in the developing and least developed countries be expected to either? When one proprietary operating system such as Windows becomes the operating standard in least developed countries, no forward internal economic linkages created are created , a minimum of wider IT economic development is generated. All that results is the establishment of a local sales office for a proprietary software company.

f) If a company or operating system acquires a national or global monopoly position, the copyright restrictions of proprietary software, especially for operating systems, are transformed, into patent-like restrictions rather than the traditional “limited monopoly” restrictions of copyright

The copyright paradigm does give a “limited monopoly” property right, for example, to the particular expression of a particular song(X). But the strong presumption is that other composers can compose different songs which will compete with X, if not on quality at least on price.( It is inconceivable that Beethoven or The Beatles could have acquired copyright in “the symphony” or “the pop sing” respectively.) But if one copyright-protected operating system, such as Windows, establishes a global monopoly--- and estimates suggest it currently has 95 per cent of the global PC operating systems market ( Keegan) --- then this becomes a monopoly that operates outside market pressures or traditional copyright presumptions. Speaking about how its operating system (Windows) is most responsible for Microsoft’s financial health during the current downturn in the fortunes of many high-tech companies, a Merrill Lynch high-tech analyst explains that “ [s]ince Microsoft has a monopoly in its core business, the company is not vulnerable to the stiff price competition that can hurt other tech leaders in time of weak demand.” (Glasner; see also *U.S. v. Microsoft Corp.* ). If this dominant position is problematic in the US, it is even more serious for poor and least countries which have a much smaller and even less competitive market and are often dependant on aid packages for computerisation ( which sometimes require the use of Microsoft systems).

One concrete example shows how difficult it is for developing countries to challenge or even slightly modify the powers of closed source proprietary software monopolies. In Lebanon, there was vigorous opposition in its Parliament during both 1997 and 1999 to draft government legislation on the subject of computer software. A number of MPs argued that software should not be protected by copyright and, in particular, that copyright owners, such as Microsoft, should be required to grant a compulsory software licence to poorer students and to educational institutions in Lebanon. As a result of pressures applied by Microsoft, Adobe, and other software multinationals, Lebanon was put on a US Trade Representative Special 301 Watch List ( that is, given a warning that the US could decide to impose trade sanctions) for considering such a reform...and in the end, Lebanon was forced to comply. (The International Intellectual Property Alliance, *‘Lebanon’*) This episode reveals, again, the lack of flexibility and absence of users’ rights in international copyright regimes with regard to software in poorer countries.

g) Poor and least developed countries are unable to curb anti-competitive practices stemming from the monopoly position of certain proprietary software within their borders.

A recent study notes:

Making IPRs stronger invites consideration of competitive rules to discipline anti-competitive practices.... Claims that a rights holder has engaged in anti-competitive behaviour are complex, and resolving them requires significant judicial and legal expertise. Administrative costs may limit a country’s ability to undertake competition enforcement....(World Bank. 2001)

This conclusion requires little commentary. If the sophisticated anti-trust mechanisms and personnel of the US Department of Justice proved unable to significantly challenge the

monopolist practices of Microsoft within the borders of that country, one can hardly believe that the Attorney General's department (or relevant authorities) in any of the 50 least developed countries in the world would be any more successful, assuming, in the first instance that commencing such an expensive and complex action would be a prosecutorial priority for any of these countries. Further one can safely predict that such a prosecution would likely be a trigger for a Section 301 sanction by the USTR. By contrast, free/ open source software raises none of these anti-competitive concerns.

## **2.5. Three contrasting computing solutions for poor countries**

These contrasting approaches can be made more concrete by comparing three contemporary computer examples: a) a new portable Indian open source computer, Simputer; b) the software decision recently made by the UK-based Computeraid International; c) the recently-launched new Microsoft operating system, XP-Windows/Net.

a) Simputer - Simputer is a pocket-sized computer recently developed by four Indian computer technologists that allows online access, basic word processing, text-to-speech capabilities, and operation in four Indian languages. The projected cost is less than \$US200 which necessarily means it is using open source rather than proprietary software. Although the word Simputer stands for simple computer, MIT sociologist of science Kenneth Kensington says, "I don't know of anyone else in the world who is producing a comparable computer at this price." (Stikeman) A prototype Simputer has already been built and its backers expect that sales will commence in March 2002 if sufficient capital can be raised and commercial licences, currently being negotiated, can be signed. Certainly Simputer will not replace a desktop PC, but members of the non-profit development trust behind this new "Third World appropriate" technology expect it will become popular in rural India, an area essentially cut off from the new information age, and will be purchased by neighbours banding together to buy the machines for communal use. "We are quite used to sharing here," explained one member of the trust. (Stikeman, Matthan interview)

b) Computeraid International- Computeraid International is a small London-based charity whose main mission is to distribute used personal computers ( that is, still-working computers surplus to the current requirements of UK organisations and individuals), to groups and individuals in poorer countries. (There are similar organisations in other developed countries.) Computeraid does excellent work and has distributed thousands of computers to more than 60 poorer countries; schools are one of the priority recipients. Most of the machines they receive come "loaded" with proprietary software ( particularly Windows) and, until quite recently, Computeraid technicians re-loaded these computers with Windows and a software package such as Word and sent them across the globe. As Tony Roberts, director of Computeraid explains,

Until recently, there really was no other choice...but now there is. Instead of using proprietary software, we now re-load all of the machines with open source software; it is much cheaper for us and the end-users and is a much appropriate technology for use in places such as Africa....With the exception of a few parts of South Africa, there is not a single government or a school system *anywhere in Africa* ( emphasis added) that can afford the costs of a Microsoft licence for their school systems. (Roberts interview)

c) The New Windows XP/.Net operating system- The problems which closed source proprietary software creates for users in poor and the least developed countries are brought into sharper focus by the technical and economic characteristics/presumptions which are manifested – or perhaps “bundled” would be a better word --- in the recently-released Microsoft Windows XP/.Net operating system. Writing for a US audience, a number of commentators and detailed studies have shown that this new operating system will mean:

- a) because of new licensing restrictions, users will be required to purchase separate XP software for each PC they own;
- b) the use of Windows XP will require 265 megabytes of hardware memory, an uncommon amount on computers older than one year; as one Business Week computer expert noted “Windows XP...will place a lot more demands on your computer, so millions of people, especially with those more than two years old, may need new ones.”
- c) Windows XP gives a decided preference to its own peripheral and Internet connection products and leads to consumers to incur recurring subscription fees rather than a one-time licensing fee. (There is a range of other technological, privacy, and “bundling” issues related to copyright-protected Windows XP/.Net, but as the cost of software is such an overarching issue in poor countries, these have been omitted from the analysis.)

Again, if these are legitimate criticisms in the US context, they are even more telling ones for poor and least developed countries and reveals the decided disadvantages of this newest piece of closed source proprietary software for such countries. (Reuters, 26 October 2001; Wildstrom; Cooper and Murray, Buckman)

## **2.6 Switching from proprietary to free/open source software**

There is a long list of other organisations, governments, and other bodies across the developed, developing and least developed world which have decided, for a variety of reasons, to switch to open source and free software. A short list includes: four Brazilian cities (Amporo, Solonopole, Ribeirao Pares, and Recife) have passed laws giving preference to or requiring the use of OSS (including from service suppliers); China has a policy commitment to use Linux across all government departments; researchers in the computer science department at Brazil’s Federal University of Minas Gerais have created a US\$250-300 computer called the “Popular PC”; Mexico has announced a five-year programme to install Linux operating systems in the computer labs of 140,000 elementary and middle schools; by 2003 (see 2.4 a), it is expected that all Mexican government database systems will be Linux-based and the results of the recent Mexican election were computed with OSS; the Computer Science section of the prestigious Indian Institute of Science’s uses Linux software; Banco Mercantile, one of Argentina’s largest banks, is in the process of switching to Linux systems; IBM has invested \$US200 million in Linux ventures in Asia and is now essentially a Linux-based company.

A number of national and municipal government have debated or passed resolutions favouring OSS, including France, Florence Italy, Mexico, and Argentina. And if any further convincing is needed that open source software is neither “an experiment” nor the software simply for “nerds”, “geeks”, “hackers” or “Microsoft phobes”, consider the following:

- a) The European Commission’s initiative “eEurope – An Information Society for all” states that “during 2001, the European Commission and Member States will promote the use of open source software in the public sector...” (Cabinet Office (UK))
- b) In December 2001, the UK Cabinet Office released a document calling for public consultation on the use of open source software within all branches of the UK government. At the same time, it also released a detailed study that recommends far greater use of open

source within government and predicts, for example, that “within five years, 50 % of the volume of the (global) software infrastructure market could be taken by OSS.” (Peeling)

c) Some sections of corporate America are also starting to break away from the hold of closed source proprietary software on their operations and are growing increasingly concerned how the “software vendors’ revenue model --- with its perpetual licences, forced upgrades and pay-up-front maintenance contracts ---- actually encourages buggy products.” (Festa, Matthan interview; White, Rebeto, Levinson)

## **2.7 The computer policies of DFID and USAID in poor countries**

What is DFID’s own policy on the closed source proprietary software issue, especially with regard to overseas development schemes?

Our current policy is, where possible, to take a pragmatic approach to funding the software component of ICT bid elements: if the project is likely to function in a predominantly Windows environment or be focused on skills development for people likely to work in this environment the appropriate funding would be made. If, however, the project is breaking new ground, we would consider steering it towards open source. (E-mail from DFID official.)

The US government and, in particular, the Leland Initiative of USAID (which has spent millions of dollars on the expansion of computer access in poor countries, including Africa), takes a rather contradictory view. On the one hand, “ We usually purchase PCs and Microsoft products when we furnish systems of this type (for developing countries).” (E-mail from lane Smith, Co-ordinator, Leland Initiative, Washington, DC). Yet, on the other hand as Smith explained, “ On balance we are for the cheapest and most affordable approach for the Africans, which would be open source.”

## **2.8 Computer copyright as a tax on poor nations**

For poor and least developed countries, the copyright protection accorded to closed source proprietary computer software once again reminds us, to paraphrase two lines from Macaulay’s well-known 1841 speech to the House of Commons, that:“ The principles of computer copyright is this. It is a tax on computer users for the purpose of giving a bounty to multinational proprietary software companies.” In the context of poor and least developed countries, this “tax” means that hundreds of millions of people cannot afford software, that they are not given the freedom to use, modify, and further develop this software for their own particular requirements, and that they will be structurally tied and indebted, both financially and technologically, to developed countries for decades into the future. Important reforms are urgently needed.

## **2.9 “Switching” rather than “fighting”**

To significantly improve computer use and access in poor and least developed countries, one obvious recommendation would be to suggest that major amendments be considered as to the protection of computer software within relevant national laws of the UK or poorer countries, within the TRIPS Agreement ( e.g. Article 10 (1) ) or the WIPO Copyright Treaty (Article 4). Certainly a compelling and intellectually coherent case could be made for such reforms, particularly with regard to the current and long-term requirements of poor and developing countries, whether with regard to the scope and duration of copyright protection ( the

“literariness” and function of Java script is rather different from that of a Salman Rushdie novel) or the inclusion of special usage exemptions for such countries. Or legislation could be proposed that would prohibit closed source code being imbedded in copyright-protected software; that is and not unlike the requirements of patent law, the “societal-given” right acquired by obtaining copyright protection necessarily entails taking up “the societal responsibility” of allowing others access to the code.<sup>20</sup> However, given that the multi-national software industry is one of the strongest lobbying forces in the world today, as evidenced by its impact on the copyright provisions of the TRIPS Agreement (which, for example, does not include a single measure strengthening the public domain or users access rights to computer software), making such recommendations at this juncture seems rather beside the point. The current approach to software protection had its origins in the US and as a 1994 article concluded,

[T]he United States government devoted substantial effort over the past decade to browbeating most of the developed world into following its path. Neither the US government nor the many entities desiring uniform protection for their products across national borders are interested in starting a new fight. ( Menell)

More recently, poor and least developed countries have also been browbeaten. If developed countries were unable to challenge such a regime ( or, in most cases, were unwilling to), there is obviously little chance that individual poor countries could successfully alter the software status quo, despite the fact that it is so highly detrimental to them. In the main, then, copyright reform recommendations have been omitted. Rather than attempting “to fight” software copyright ( or specifically, closed source proprietary software), the UK government could play a supportive role in the growing movement within the developing and least developed worlds “ to switch” software and to provide both users and software developers with *a choice* as to which type of software best meets their needs. The current predominance of closed source proprietary software does not give them such a choice

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<sup>20</sup> Permitting such dichotomies to exist is another reason that copyright is not a proper legal category under which to slot closed source software.

## **Recommendations:**

**1. The UK government should develop “a favourable bias” towards the use and expansion of free/ open source systems in poor and least developed countries. This should include a thorough cost-effectiveness review of all its international development programmes that include a closed source proprietary software component. Other developed countries should consider similar initiatives.**

The decision taken in the TRIPS Agreement (and elsewhere) to protect computer software as a copyright-protected literary work represents, among other things, an extremely valuable legal subsidisation of the multi-national software industry; that is, the provisions of TRIPS and laws of individual states ( and the resulting penalties for infringement) determine the distribution and allocation of current and future wealth, nationally and internationally, as well as access or non-access to computer technology. These laws and treaties represent a market/wealth creating intervention. An alternative approach would have had significantly altered these distribution and access patterns, including for poor and least developed countries. The negative impact (or non-impact, given the still extremely limited ownership and use of PCs in poor countries- see Appendix 4) of closed source proprietary software in the countries, documented above, suggests that a slight policy “tilt” in favour of open source software is warranted. The costs to the UK of developing such a policy are relatively small and the potential benefits to the peoples of poor and least developed countries potentially very significant. As one study concluded, “ [d]eveloped countries can make cost-effective contributions to less developed countries by helping them adopt free software technologies. Since there is no royalty or per-copy fees, the cost of this transfer is really low for the contributor country. Contributions could be focused in training, localisation, and adaptation to local needs, with a great multiplier effect.” (Working Group on Libre Software.)

**2. Specifically, the UK government should provide funds for the training of technicians and computer users groups in poor countries in free/ open source computer systems. Other governments should consider similar allocations of their development assistance funds.**

Articles 7 and 8 of TRIPS, found in its “basic principles” section, as well as Article 66 (2), mandate the transfer of technology, and specifically, in the latter article, “ to least developed countries.” Yet since 1996, such tech transfer schemes have been established on very spotty basis and a commitment that the developing countries viewed as a significant concession in TRIPS has become a matter of only tertiary concern to developed countries. In the “Africa Group” proposals ( 4 October 2001) for an “alternative text to the Draft Doha Declaration”, these nations agreed that “developed country Members shall put into *immediate effect* meaningful incentives for the purpose of promoting and encouraging technology transfer.” (emphasis added.) As detailed in the main body of the report, the use and export of closed source proprietary software does not represent technology transfer to the world’s least-developed countries, whereas free/open source software does. The provision of funds for the training of technicians and software groups in the least developed world on open source software methods and computer programming in general would represent one step towards fulfilling one of the UK’s tech transfer obligations under the TRIPS agreements.

**3. Working in close consultation with open source developers and user groups in poor and developing countries, the UK government should propose the holding of a**



**conference of free/ open source software developers in 2002 from these countries and assist in the costs, such as transportation, of such a conference.**

In launching the UN Development Programme's "Human Development Report 2001", its author stated that "[t]he long term solution to innovations for development priorities and conditions of the developing countries will come from the south." (Fukuda-Parr). Closed source proprietary software is very much a technology of "the north." Facilitating a "south to south" dialogue and the trading of experiences between OSS developers, users, and entrepreneurs in Latin America, Africa and Asia would be a worthy international development objective for the UK to undertake. Other projects might follow; one interviewee (Chapparo) proposed the establishment, with appropriate funding, of an international 'software clearing house' (such as sourceforge) at governmental level so that developed and Third World countries could exchange applications and expertise.

This is a particular pressing development issue for poor and developing countries as, according to one recent study, "open source software on the desktop may soon become a significant player on the desktop in the developing world." (Peeling)

**4. The relevant departments of the UK government, such as DFID and the Department of Trade and Industry, should be encouraged to contact government and free/ open source developers in poor countries with a view to establishing public-private partnership between the UK government and computer entrepreneurs and investors.**

There are a number of "up and coming" open source software projects that are soliciting funding from investors in the developed world. India's Simputer project is one such project and the lawyer for the Simputer development trust said that he would be pleased to speak with either UK government representatives or private investors from the UK.

**5. The UK government ( and governments in other developed and least developed countries) should lobby the World Bank and IMF, as well as international aid agencies, to stop tying their aid packages to the use of closed source proprietary software and to stop discriminating in favour of proprietary software in the distribution of their own document and in access to web-based documents.**

To access many of the documents posted on the web sites of both the World Bank ( e.g. poverty statistics in Africa) and WIPO ( e.g. the date on which countries became signatories to the Berne Convention), an Internet user is required to have Microsoft's Windows as her/his computer operating system. One World Bank/ Microsoft document states: "The World Bank's mission is to fight poverty with passion and professionalism. To achieve its goals, the bank is using Microsoft technologies in innovative ways." A World Bank grant to a number of African countries for statistical gathering required them to use Microsoft software to acquire that grant. As a United Nations agency, WIPO is required to post its documents in the various UN official languages; when it comes to computer languages, why should one language (and a privately owned language at that) be privileged over other non-proprietary languages? For the reasons explained in the main body of this section, requiring (or favouring, by default) the use of closed source proprietary software reinforces the control of developed countries and their technologies over the least developed world. The current policies of USAID with regard to the provision of software "aid" in poor countries provides other governments in the developed world with a negative example.

**6. The Department for International Development should create a mirror of its existing website using open source software.**

One of the more common responses we have heard as to why there is still a limited use of OSS in poorer nations is this: “if this type of software is so good, why are so many organisations, companies and governments still hooked on proprietary software? Are the alternatives second-rate?” DFID could set an excellent example and give an important boost to the status of OSS systems in poorer nations if it decided to give OSS equal-billing its own external communications... and, in fact, it might decide, as have Amazon.com and the US Pentagon, for example, that using Linux and OSS systems could lead to significant cost and efficiency savings over proprietary software.

**7. The Department for International Development should commence discussions with organisations such as Computeraid International and other NGO’s interested in computer and access to information issues to determine how it assist and help finance their important work.**

Further commentary on this recommendation is not required.

*See also the excellent recommendations made by Federico and Oscar Heinz at the conclusion of Appendix 4.*

## Section 3 – Copyright and the Internet

### 3.1 Taking maximum advantage of the Internet

In the context of national and international copyright law, the main question this section addresses is “how can least developed countries take maximum advantage of the Internet and its potential, especially for their educational requirements?” ( This question also raises closely related issues of encryption.)

### 3.2 The highly unequal patterns of Internet access and use across the globe

What immediately becomes clear is that there is, at present, highly unequal access and use of the Internet across the globe as demonstrated by the year 2000 figures found in Appendix 4. Taking a sampling of developed, developing, and least developed countries, we find the following statistics:

Country	Internet Users /10,000 inhab.	Total # of PC Per 100 inhab.
UK	2,576.72	33.78
US	3,465.78	58.52
Algeria	16.19	0.65
Egypt	70.89	2.21
South Africa	549.38	6.18
Trinidad & Tobago	772.58	5.42
India	49.39	0.45
Mozambique	15.24	0.30
Rwanda	6.47	...
Myanmar	0.21	0.11

And what also becomes immediately clear is that copyright is *not* the leading cause of or barrier to this highly unequal Internet access in least developed countries (and within such countries). Hence, loosening copyright restrictions will not, in the short run at least, significantly increase access in least developed countries, though they certainly would in countries such as the US or UK. Nor will further increasing copyright restrictions protection, which might mean the wider use of encryption measures, mean much difference either. Only a tiny minority is, at present, connected and this should be kept foremost in our minds when we examine (later in this section) various Internet “toll gate” and fencing measures, such as those included in the WIPO Copyright Treaty (e.g. Article 11), the provisions of the 1998 US Digital Millennium Copyright Act (DMCA) or other “access to content” blocking mechanisms. Pervasive arguments that rights holders will suffer significant harm without the introduction of such measures simply are not true in the case of least developed countries because access and usage of online materials is currently so limited. In other words, what may or may not be valid justifications for the introduction of such restrictive measures or business models (e.g. toll-gated and proprietary Internet-based datasets) in the developed world are certainly not valid justifications in the least developed world. (This is explored in more detail below.)

### **3.3 Other factors beside copyright are more important.**

A numbers of other factors are much more significant than copyright laws and policies in explaining the relatively low access and usage ---and , in some cases, almost non-existent usage--- of the Internet in poor countries. Briefly canvassing these other explanatory factors, they include (and not necessarily in their order of importance because many of the factors are inter-related):

- 1) Low per capita incomes in least developed countries.
- 2) Internet access and computer use is much less of a policy priority for many governments in least developed when more basic issues such as access to food, shelter and health care remain so critical.<sup>21</sup>
- 3) The high costs ( at least relatively) of computer hardware and software. <sup>22</sup>
- 4) Serious limitations of telephone and telecommunication systems, including bandwidth.<sup>23</sup>
- 5) Weaknesses of national electrical power grids and uneven patterns of electrification, especially in remote, rural, and least developed regions of poor countries.

So the issue of Internet access and usage in least developed countries is a complex one. Yet behind all “the hype and fervour about the digital divide”, “what is clear is that disparities between the “haves” and the “have-nots” are growing ...” and while “all countries, even the poorest, are increasing their access to and use of ICT ( information and communication technologies)”, “ the information have’ countries are increasing their access and use at an exponential rate that, *in effect*, the divide between the countries is actually growing.” (emphasis in original) ( bridges.org.) . Or as one report worried back in 1995, which is a long way back in Internet history, “ The Internet and the South: Superhighway or Dirt-Track?” (Panos)

### **3.4 The Internet as a new communications model**

What then of copyright issues on the Internet for least developed countries and, given the geographically seamless nature of the Internet, *how are copyright regimes established by developed countries effecting them?* Noting how digital technology and the Internet have “transformed the nature of copyright so that it now applies to everybody’s everyday behaviour” [assuming, of course, that “everybody” has access to that technology], one commentator has written that “ more than ever before, our copyright policy *is* our information policy.” (emphasis in original) ( Litman). The digital/Internet era creates many challenges to Gutenberg-derived copyright and information policies and, indeed, arguably makes many of them incoherent and anachronistic. Both the costs and ease of distribution of information and the costs and ease of access --- both, of course, only a potential “ease” if the technology itself is not accessible --- have been transformative. On the production side, new computing technologies have changed the speed and method of knowledge/information creation and led to new peer to peer relationships that are “superior to both market-based and hierarchical

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<sup>21</sup> Least development countries can legitimately ask why there is a sudden interest among development countries about their rates of connectivity: is it because they represent new markets for e-commerce wares or because developed countries want to spread and attempt to universalise their culture values or to propagate the view on the English-dominated Internet that English is *the* world language? ( See also Appendix 5).

<sup>22</sup> Internet access obviously requires computer access and until there is a tremendous increase in the number of PC’s (and other type of computers such as Simputer) in least developed countries, Internet access and usage figures will only creep upwards. Lowering the costs of software, as explained in Section 2, would be one key factor in increasing computer ownership and usage and thus the possibilities of wider Internet access. (Recommendation 2)

<sup>23</sup> As one report notes: “In the entire continent of Africa, there are a mere 14 million lines – fewer than in either Manhattan or Tokyo.” ( bridges.org)

managerial processes.” ( Benkler) While the first US copyright statute (1790), for example, gave copyright owners *the sole right* “ of printing, reprinting, publishing and vending”, today “the threat and the promise of network digital technology is that every individual with access to a computer will be able to perform the 21<sup>st</sup> century equivalent” of these same tasks and others as well. (emphasis added) (Litman) In many ways, then, an entirely new model of communication, of education, of sharing, of empowerment, and of building --- communities, relationships, networks, local, national or global projects --- is being constructed in cyberspace (with important spin-offs on *terra firma*.) This model has inspired comments, sometimes slightly exaggerated, about “the explosion of creativity” and about the coming (or already realised) “global village.” What further needs to be appreciated is that the resulting vast information “commons” was “built into the very architecture of the original network. Its design secured a right of decentralised innovation.” (Lessig) Traditional copyright notions played a minor role in that design. Certainly the argument that copyright protection is a pre-condition or required incentive for the creation of works has once again been refuted. As one commentator perhaps somewhat whimsically suggested --- and this even before the “era of the Internet” had fully arrived ( at least in developed countries), “in the absence of the old containers, almost everything we think we know about intellectual property [ and especially about copyright] is wrong.” (Barlow)

### **3.5 Barriers to the maximisation of Internet usage**

Yet to fill out this vision ---- frightening to some, liberatory to others ---- and the unprecedented educational and informational opportunities they bring, including for least developed countries, we must add three other key elements. In many ways, and despite a number of technological and economic post-Gutenberg transformations, the digital/Internet era is also seriously threatening access to information. In the hard copy era, it was (and still is) impossible to prevent the photocopying and sharing of materials... and hence the realisation of key copyright users’ rights such as fair dealing/fair use. A user only had to visit a good library and a wealth of materials was freely at hand. Or a friend or colleague could lend you a book. But if Internet-distributed materials are fenced in by passwords and encryption technologies, copyright-protected ( or, in fact, non-copyrighted) content becomes inaccessible for fair use/ fair dealing and related purposes by the public unless all members of the public have access to the all-important password; this closed, “by admission only” orientation (and business model) flatly contradicts the long-standing and much praised “copyright bargain.” As the International Federation of Library Associations and Institutions has written:

we now know that technology also has the potential to further stratify society into the information-haves and the information-have-nots. If reasonable access to copyright works is not maintained in the digital environment, a further barrier will be erected which will deny access to those who cannot afford to pay. (IFLA)

In fact, the very nature of these encryption technologies make them more effective than traditional intellectual property protection mechanisms and rightholders can achieve “ virtually absolute control over their works, unencumbered by the limitations embodied in copyright law.” ( Denicola ) Second, the world of digitalised information operates in at least two spheres, the sphere of sharing and peer-to-peer production (Benkler), but also in a sphere which may, for example, require an author to assign all rights ---not only copyright but also digitalisation rights--- to a publisher *as a condition of publication*. Reproducing such relationships in cyberspace is far from liberatory, either for information producers and

authors or end users. Given the “information power” of the Internet, publishers gain even further power to determine the use of and access to information when compared to traditional hard-copy materials. And given that providing Internet access to already formatted materials or widening existing access to new users materials has *zero marginal costs* for information distributors (unlike, for example, the paper and printing costs of hard-copy materials), profit-making opportunities increase exponentially. Third, and after surveying recent and proposed international and domestic (US) copyright and encryption technology laws, Lessig argues --- quite properly in the view of this researcher --- that the Internet is “under siege” and that “under the guise of protecting private property [ particularly copyright], a new series of new laws and regulations are dismantling the very architecture that made the Internet a framework for global innovation.” Perhaps somewhat too pessimistically, Lessig suggests that “the Internet revolution has ended just as surprisingly as it began.” For our purposes here we need to ask: “will these new laws and processes benefit least developed countries?” and, if Lessig is correct, “will the Internet era end for least developed countries before it has really begun for them? ( Section 3.2) All of these issues require further, if brief, exposition.

### **3.5 Not a profit-making opportunity in poor countries in present circumstances**

Copyright rights holders (and here concentrating primarily on large multi-national enterprises such as publishers, the music recording industry, software companies and the other “copyright industries” in the developed world because they own and control the majority of copyright-protected material on the Internet) have approached the Internet with essentially two attitudes: a) as a threat and challenge to their power over information resources; b) as a new profit-making opportunity. The latter response can be dealt with summarily. Especially in the context of education-related materials, poor and least developed countries *do not offer* (and will not likely offer for some years) *significant profit-making opportunities* for rights holders . Both average income levels and Internet connection levels are too low (Appendix 4) and if no school systems or governments in Africa, for example, can afford the costs of Microsoft licensing fees at their schools (see comments of Tony Roberts in Section 2.5 b ), they will hardly be able to afford digital licences for toll-gated proprietary datasets and journals.

In this regard, we should certainly welcome *some aspects* of the July 2001 initiative of the WHO and the world’s six biggest biomedical publishers to allow free online access to hundreds of their journals for as many as 600 institutions in least developed countries (WHO Press release). (Developing countries will pay reduced rates compared to those charged in developed countries.) This initiative has, for example, established the principle of “tiered pricing.” But what also needs to be appreciated is that this initiative:

- a) does not represent any significant financial outlay to publishers because of the zero marginal costs of increased Internet access (in this case to poor countries) ;
- b) does not represent lost sales or profits because there was no significant existing market in least developed countries due to the high costs of such journals. ( For example, a yearly subscription to Elsevier Science’s “Brain Research”, one of the journals included in this initiative, costs US\$17,000; further we should note that commentary is quite misleading when it suggests that these publishers “have put profits aside” with this new initiative);
- c) means that publishers are distributing materials which they have received at no cost from academic authors and researchers; it is the latter who are making the actual “donation”. (See also recommendations in Section 4).

Alternative models, including for medical information, are discussed below in the “Internet access/copyright models” section.

### **3.6 The Internet as a “threat” and a “challenge”**

The issue of the Internet “as a threat and a challenge” requires more elaboration as this orientation has animated a range of restrictive copyright-related laws, treaties and measures of recent years. In the “threat” context, it is first worth recalling a quotation from London bookseller James Lackington (1746-1815) when circulating libraries were starting to be established in the UK:

When circulating libraries were first opened, the booksellers were much alarmed, and their rapid increase, added to their fears, had led them to think that the sale of books would be much diminished by such libraries. But experience has proved that the sale of books, so far from being diminished by them, has been greatly promoted, as from those repositories many thousand families have been cheaply supplied with books, by which the taste of reading has become much more general, and thousands of books are purchased every year by such as have first borrowed them at those libraries, and after reading, approving of them, become purchasers. ( Steinberg)

While similar alarmist talk about the Internet by latter day booksellers and publishers has, of late, diminished (though not completely as can be seen on some publishing-related e-mail lists), it is certainly true that “suddenly we are paying a lot of attention to the claim that individual end users do not observe copyright rules in their daily behaviour.”( Litman) This claim, to take one instance, ignited the 2000-2001 Napster copyright litigation in the US. But as we have seen, dozens of less “removable” and de-centralised new “Napsters” have sprung up in its place while, at the same time, global CD music sales have hit record levels; “sampling” of one free music cut often leads to the sale of one complete CD and allows seldom-exposed musical artists to get exposure (and fans) that the “big five” music companies have not accommodated. As one commentator has written, “ far from being a victory” for the recording industry, the Napster copyright infringement litigation is “the beginning of the industry’s end” as it is being challenged by alternative sharing models that often by-pass music publishers, but still allow artists to receive remuneration.” (Moglen) Technological changes regularly have forced outmoded business and copyright models to change (the VCR provides a good example) and the same will likely occur in the music and publishing industries.

A second “threat” comes from the perception that free access to copyright-protected materials on the Internet represents “lost sales”, that is, that “unpaid” uses are lost sales, potential or actual. The library model exposes the fallacy in such thinking. There is not the space here to discuss “lost sales” in the context of developed countries and, has already been mentioned above, this is *not* a significant issue in least developed countries because the costs of most online toll-gated materials are already far beyond the means of all but the most affluent in such countries. In fact, unless a range of “free” or very low costs means of accessing copyrighted materials are developed for the citizens, teachers and students in these countries *will seriously suffer* from Internet access restriction measures (albeit controversial measures, see below) designed to “lock up information” by encryption technologies and protect markets in developed countries. That is, users in poor countries will be unable to access either non-encrypted Internet datasets because they will not exist in significant numbers and will be unable to access or purchase copyright-protected paid materials because they will not be able to afford the user-pay admission charges.

A third perceived “threat” is based on the notion that all potential “leakage” of Internet-based information must be plugged by publishing industry practices, particularly by contracts with authors, and by international treaties and national statutes. In the case of authors, one of the more important developments in recent years has been the addition of “digitalisation rights” clauses to the standard form contracts that publishers require authors to sign. Under this arrangement, unless an author assigns not only copyright and first publication rights, but also digitalisation rights, to the publisher, the article (which, it should never be forgotten are given for free, in most cases, to the publisher ) will not be published. (Story 2000) A slight variation, often used with free lance commercial writers for magazines and newspapers, is to refuse to pay compensation to such writers when digitalised materials they wrote are re-sold or licensed to a third party. Both mechanisms significantly change the author-publisher power relationship to the former’s detriment, increase the revenues of publishers, and give publishers even greater power over the use of and access to copyright-protected information, including --- and of particular interest for this report --- the power to stop its use on the Internet and to solely determine the costs, if any, of such access. There are, however, welcome signs of change in this area. In June 2001, the US Supreme Court ruled in the case of *Tasini et al v. The New York Times et al* that freelance writers have the right to claim remuneration for electronic reuses of their work and that granting of first publication rights does not include the granting of digitalisation rights as well. By analogy and as is explored in Section 4 in more detail, requiring academic authors, who are one of the main producers of education-related materials for use in least developed countries (and elsewhere), to assign to publishers anything other than first publication rights is equally “unreasonable.” A change in the current regime would potentially open access to vast *free* stores of information and knowledge on the Internet, including for poor countries. As various studies have shown, few academic authors are not interested in direct financial remuneration for their academic writings; their main interests lie in the “psychic” benefits of publication, the widest possible exposure of their work, and the indirect financial rewards of career advancement. (Association of Learned and Professional Society Publishers)

On the information distribution side, the main impact of this perceived “threat” has been a series of strong moves to significantly tighten the restrictions on access to Internet-based materials and to ban --- and in some cases, criminalise the use of --- devices which allow “the circumvention of effective technological devices [e.g. encryption technologies] that are used by authors in connection with the protection of their rights.”(Article 11, WIPO Copyright Treaty; see also the US DMCA). Such anti-encryption measures, encryption technologies more generally, and the powers given Internet Service Providers to unilaterally shut down websites which, in their opinion, contains copyright-infringing or other illegal materials, have been issues of sharp controversy in the US following passage of the DMCA and the July 2001 arrest in the US of a Russian programmer, Dimitry Sklyarov.<sup>24</sup> Certainly some of these issues lie outside the scope of this report, but we should note that the DMCA has extra-territorial implications ( e.g. the US has the largest number of web servers in the world and so non-US mounted sites may be affected) and that encryption technologies make no distinctions between fair and unfair uses ( See Recommendations 1 and 6).

### **3.7 The Internet as a threat to poor countries**

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<sup>24</sup> Sklyarov had developed in Russia, where there are no DMCA-like restrictions, a computer code which opened up Adobe’s eBook programme and allowed users to transfer eBooks from one computer to another and permitted blind users to “read” aloud the books they had purchased (Lessig). In exchange for agreeing to testify against his employers, the prosecution of Sklyarov was recently deferred.



As we look more closely at developing patterns on the Internet, we can start to appreciate some of the ways that the Internet is, in fact, creating a number of “threats” to least developed countries, and in particular, to their educational programmes. First, there is a growing trend for publishers to cancel print-only subscriptions to their journals and offer instead electronic-only subscription packages. For example, this is what a leading academic publisher, Cambridge University Press, has started doing in the autumn of 2001. “The library market is moving to electronic-only subscriptions. There has been a rapid shift over the past year, so our selling models have had to change,” a CUP manager explained. (Davis) The electronic-only model presumes, of course, that users/customers have excellent access to both computers and the Internet, as well as the financial resources to pay for such access; as detailed above, these presumption are not valid across the least developed world. Of course, it would be alarmist to suggest that the world of hard-copy materials is shrinking rapidly, but there are a number of worrying signs. If these trends become more pronounced, such a reduction in printed materials will not be in the interest of least developed countries where libraries still rely predominantly on hard copy materials and, and as they have very limited funds for book purchases and journal subscriptions, “survive on gifts and exchanges and soft money from overseas donors.” (Darch)

Second, encryption technologies will dramatically reduce the possibilities of making donations or sharing books. The ebook model, for example, is based on the view that each individual user should purchase her or his own copy; sharing is not allowed and encrypted technology ( of the type that Dimitry Skylarov “cracked”) tries to make sure this does not happen. If it becomes widespread, such a phenomenon would not only prevent donations from overseas but, more importantly, also block the widespread pattern of sharing and re-using books and similar resources in poor and least developed countries. (Though in some ways the product of necessity and low incomes, this “ sharing ethos” represents a positive social/cultural value that should be cherished, especially when compared to the individual consumer culture of the developed world which regards second-hand goods as inferior ones.) The vast majority of African libraries are already suffering badly --- in part because their funding is often a low priority with governments in poor countries --- but the “era of the Internet” may make the situation even worse unless there are dramatic changes to our information access policies and the Internet’s liberating possibilities actually realised. As one librarian with long-standing experience in more than five African countries has written,

The commodification of information in the global economy is a gloomy prospect for librarians who have been trained in the liberal tradition of the free flow of information as well as for scientists who believe in full disclosure as the basis for scientific method. It seems that we will not be able to enter the electronic library of the future without a credit card. ( Darch)

### **3.8 Internet access/ copyright models**

It is now worth briefly examining several different copyright and Internet access models that currently exist and considering whether or how they can be beneficial to least developed countries, their peoples, and their educational needs. Certainly a number of sites and projects follow a “best practice model”; a few examples include the following:

a) **Project Gutenberg** (<http://promo.net/pg/>). This project and site contains more than 4,000 out-of-copyright book ( i.e. in the public domain) that are available for free downloading and use. It is simply a tremendous resource and an excellent site for teachers to use to find

materials, especially works of fiction, for their students.

b) The British Medical Journal ( <http://www.bmj.com/>) The BMJ online site allows free access to the full text of all articles published in the weekly BMJ from January 1994 to present. The fact that this site receives tens of millions of visitors annually from across the globe is a testament to its value; it is indeed a world model and an exception to the far-from-rosy picture of online access at UK-hosted sites. It is recommended that discussions should be started to enquire if the BMJ's sister publication, *Clinical Excellence*, which would also be of great use to medical personnel in least developed countries, could also be encouraged to provide free online access. ( A US-based site, PubMed Central, <http://www.pubmedcentral.nih.gov/>, which is a digital archive of life sciences journal literature managed by the US National Library of Medicine, should also be noted in the medical field. It allows free full text access to more than 40 journals in this area. )

c) The Free Online Scholarship Movement – This is a rapidly burgeoning movement across a number of academic disciplines which again allows free full text access to scholarly materials. For example, academics may post their articles to an “open archives” on the Internet just before sending it off to a publisher for publication ( and transfer of rights) in a hard copy format. The best guide to the FOS movement, edited by Peter Suber, is available at <http://www.earlham.edu/~peters/fos/guide.htm>. A growing number of journals now allow free full text access and use and, in an interesting development, the entire editorial board of more than one journal has resigned when a commercial publisher refused to allow free online access; the same board then established a new journal based on these principles. Such existing projects and other potential projects are worthy of UK government support and should be further publicised in least developed countries. (See Recommendation 4)

But there are a number of other models which are of only partial, very limited, or of no use to the least developed countries. These include:

a) The practice of many publishers to allow free online access only to the abstracts or summaries of article but require payment for access to the actual article. (Oxford University Press is but one of many publishers that follows this practice.) This approach, which is essentially a means of advertising goods for sale, negates by a technological measure ( i.e. a reader/user is not able to see the whole article) statutorily protected users rights.

b) An increasing number of publications are issuing their materials in both hard copy and digital formats, which is a positive development. Given that the mailing costs of hard copy publications from developed to less developed countries are often quite steep or delivery is slow, the possibility of getting essentially immediate access is to be welcomed. However, this is potential benefit is negated because a number of journals charge often excessive “double billed” rates for the digital access version of hard copy materials (which are themselves prepared in a digital format) and “credit card” phenomenon mentioned by Darch (above) comes into play. There may also be restrictions on the use of such digitalised materials by distance learning students, a growing student constituency in both developed and least developed countries. Because of a statutory loophole, however, such practices cannot be challenged legally. (See Recommendation 2)

## Recommendations:

**1. To ensure the protection of users' rights (e.g. fair dealing access for educational and research purposes) with regard to copyright-protected/restricted materials, the UK government should investigate the possibility (and potential technical, legal, and economic hurdles to overcome) of requiring that all UK-hosted and Internet-based information datasets normally available to the public (e.g. through a licensing agreement or available in hard-copy format in a public library) be made available to the public through a fair dealing "channel"/port/connection. Governments in other developed countries should investigate similar initiatives. Governments in least developed countries should implement complimentary measures with UK government help and assistance. In particular, this right should allow the making of multiple copies for non-profit educational use by teachers and other involved in educational-pursuits in all fields ( e.g. literacy campaigns in local resource centres) in least developed countries.**

Article 10 of the WIPO Copyright Treaty gives clear authority for national governments to enact legislation that provides for limitations and exceptions to the rights granted to authors -- more appropriately understood as facilitating users' rights ---- that "do not conflict with the normal exploitation of the work and do not unreasonably prejudice the legitimate interests of the author." The WIPO member countries that enacted this updated treaty, intended to cover Internet-based materials, rejected claims that "digital is different." (IFLA). Just as fair dealing is an expected user right with hard copy materials found in a public library or other public facility, so too should digitalised materials be made available on the same basis. It has long been recognised that this practice does not prejudice an author's rights (more commonly, a publisher's rights) to allow a student, researcher or teacher to photocopy a chapter from a book. The same should be true on the Internet and specifically, as the IFLA states, "For works in digital format, without incurring a charge or seeking permission all users of a library should be able to: a) browse publicly available copyright material; b) read, listen to, or view publicly marketed copyright material privately, on site or remotely; c) copy, or have copied for them by library and information staff a reasonable proportion of a digital work in copyright for personal, educational or research use." This right of browsing and fair dealing with a work should be extended to members of the public accessing Internet-based works directly in their own homes, as part of distancing learning programmes or through community, medical, and similar centres in least developed countries.

This right of access to Internet-based materials is essentially similar to the right to use a library, the right to an education, or the British "right to roam" in the countryside (roaming, in this case, the collective knowledge of past and current generations ). Unless such a right can be made effective very soon, the fact that more and more materials become available in a digital-only format will be a cruel hoax, especially for poor countries, and the promises and potentials of the Internet will not have been. Also without such a right of access, we can predict that a new generation of encryption circumvention devices will spring up to protect this increasingly privatised information fortress. Laws that tell the information-hungry peoples of poor nations "no access without payment" will rightly seem unfair to them. What should be emphasised is that *permitting such access will result in neither lost revenues or extra costs for rights holders* . Nor, because information is a non-rivalrous consumption good, will there be any diminished access for either free or paid users in developed countries.

Allowing educators in least developed countries to make multiple printed copies of such materials for educational purposes is the digital equivalent to recommendation 1 in Section 4.

It is especially important in least developed countries due to the low number of computers currently available for use in schools and universities.

**2. The UK government should amend Section 116 of the Copyright Designs and Patents Act 1988 to include, under the definition of “licensing schemes”, those licensing schemes ( including for digitalised materials) which are operated directly by publishers. This definitional change would permit references to the Copyright Tribunal of the terms of such digital licensing schemes under Sections 117-143 of the Act and allow government oversight over the terms and scope of such licences under the provisions of Section 137. Such a statutory change has the potential to be of great benefit to least developed countries.**

Under Section 118 of the CDPA 1988, organisations representing licensees ( or potential licensees) of a copyright licensing schemes operated by “a licensing body” may make a reference to the UK Copyright Tribunal, a statutory body, as to the terms, including the cost and the scope, of such licensing schemes. (After a hearing of the parties, the Tribunal is given authority to establish the terms of such schemes.) However, the Act restricts the term “licensing body” to a “society or other organisations which has as its main objects, or one of its main objects, the negotiation or granting...of copyright licences.” When this statute was written, it was aimed at the regulation of licensing schemes of materials in traditional hard-copy format operated by organisations such as the UK Copyright Licensing Agency (CLA). The CLA, a reprographic rights organisation (RRO) was created in 1982 and operates a number of licensing schemes in hard-copy format on behalf of publishers and authors in the educational, business and government sectors. It was the statutory provisions of Sections 117-143 of the Act which, for example, allowed Universities UK to making a reference in July 2000 to the Copyright Tribunal about the terms and scope of the licence operated by the CLA for copyrighted materials used by British universities and colleges.

However, since 1988, copyright licensing patterns have changed dramatically and, in particular, a) digital licensing schemes ( accessed via The Internet or sometimes on CD’s) are today much more prevalent, and, b) such schemes are primarily negotiated and operated directly by publishers, that is, RRO’s such as the CLA have generally been by-passed and the licence is between a publisher and an organisation such as university or school or business. But because many publisher do not have as their “main object” the granting of copyright licences, there is no opportunity for licensees (or potential licensees) to challenge the terms and scope of such licences or the one-sided, standard form contract terms on which the “negotiations” are based. (Arguably, companies such as Westlaw and Lexis in the legal field *do have* as their “main object” the licensing of copyrighted materials, but certainly many publishers do not.) Hence these sections of the 1988 Act are anachronistic in that they do not include any statutory regulation over what is rapidly becoming the most important form of licensing of materials. Yet the same rationale which led to the establishment of copyright tribunals in many countries to cover hard-copy materials, such as books and journals, is equally valid for digital and Internet-based materials, in fact, it is even more valid because of the difficulties of fair dealing access mentioned above. The rationale is this: Just as there is a public interest in the provision of water, electricity, television, and railways --- and hence regulatory oversight ---- so, too, *there is a public interest in access to and use of information.* Further, there are valid worries about the monopoly powers of publishing companies and RRO’s; large multinational publishing companies such as Reed Elsevier own hundreds of journals and other publications.

Opening up the possibility of references to the UK Copyright Tribunal about the terms and scope of digital/Internet licences --- whether double-pricing, the scope of exemptions or coverage, restrictions on distance learners or other relevant provisions --- could then be used as a precedent by least developed countries as well because they must deal with many of the same multi-national publishers and are often offered similar terms and conditions for digital licences. ( It should be noted here that libraries face another digitalisation problem: document delivery, taking a photocopy of material from the collection of one library and delivering it to another, was once considered a fair use photocopying activities; document delivery is increasingly moving to commercial document delivery companies which charge \$10 and upwards for a single article (Darch e-mail).) Further, these countries could argue that the tiered pricing structures in the WHO-six medical publishers' initiatives (see section 3.5), which will mean that they will receive free access to certain medical journals, could then be used as a precedent for free access to non-medical publications. In other words, "normal exploitation of the work" in least developed countries would mean, in the case of digitalised works, free access and use. For example, Elsevier Science would be hard pressed to argue that " free access" is allowed for medical journals but not allowed for legal journals published by Butterworths, another arm of Reed Elsevier.

But unless such data-base licensing schemes, whether in developed or least developed countries, are subject to regulatory control, least developed countries will be required to rely on the benevolence of multi-national publishers. Educational improvement in such countries cannot wait for the business and access models of publishers in the developed world to be adjusted.

Governments in other developed countries should, where necessary, similarly amend their own domestic copyright statutes to permit the regulation of digital licensing schemes.

**3. The UK government, governments in other developed countries, and governments in least developed countries should encourage and facilitate the far wider use of free/open source software as a key means of allowing greater Internet access in least developed countries.**

The rationale behind this recommendation is detailed in Section 2 and is not repeated here.

**4. The UK government and governments in other developed countries should open discussions with and, where necessary, provide financial assistance to groups that are currently following "best practice" models of free Internet access (see section 3.8 above) to assist them in providing both a wider and broader range of materials and in making their free services better known across the least developed world.**

The creation of online archives of freely available materials ( including to least developed countries) requires a great deal of labour; much of its freely and generously donated. (The creation of the actual materials is, of course, the product of both paid and unpaid labour.) Yet there are certainly significant costs in establishing and operating such projects and it would be of significant benefit (to both developed and developing countries) if the governments of the UK and other developed countries provided some funding for the computer software and labour required to set up distributed and interoperable archives of such freely accessible materials. Further, it would be of assistance to educational programme and teachers and students in developed countries if the existence of such projects was more widely publicised; raising the profile and use of Project Gutenberg could save schools and universities in poor

nations significant amounts of money annually. Moreover, giving an increased profile to such archives in least developed countries might also encourage academics and scholars from these such countries to make their own works available for free online; at present, such authors are significantly under-represented in the various online archives.

The UK government should also consult with primary and secondary school teachers' organisations here in the UK and, working with an organisation such as Education International (a world-wide trade union organisation representing 280 teachers' unions and professional organisations with 24.5 million from all sectors of education; <http://www.ei-ie.org/>), try to foster what we could call on FOTM ( Free Online Teaching Materials) movement focusing specifically on the needs of primary and secondary school students and the first-rate reaching materials they require. To be successful and beneficial, such a movement would require the participation of teachers from a wide variety of cultures, countries and subject areas. The potential is vast and, to take but one example, it would highly instructive for British students to learn how African history is taught in Africa and for African students to learn how African history is taught in this country.

One added note: Users located in developing and least developed sometimes pay royalties to publishers and "rights holders" ( more accurately, purported rights holders) in the developed world for works, such as those found on the Project Gutenberg site, that have already passed into the public domain. The extent of this practice is unknown. But given that Internet access is very limited and that there would be significant printing costs involved if a teacher in a least developed country wished to print out a classroom set of, for example, a play by Shakespeare, a government printing facility or a private publisher in these countries could legally download such a play from Project Gutenberg, change the formatting and typeface, and, using modern reprographic processes, make such works available to teachers and students in their countries at greatly reduced costs. (Private publishers should not be allowed to use this opportunity to avoid the payment of unnecessary royalty fees to developed countries as an occasion for their own excessive rent-seeking.)

**5. When the UK government or government-funded agencies provide grants and other forms of financial assistance for research, academic or otherwise, the terms of such financial agreements should require that all publications based on (or derived from) that funded research be disseminated free online. The same should apply to the research publications of staff employed in government-funded institutions, including Higher Education institutions. Governments in other developed countries should take similar steps.**

The rationale for such a recommendation is quite simple: when British taxpayers pay for research, why should they be required to pay a second time to read and use it? Yet, this free access requirement is seldom required in the UK; for example, the Office of Science and Technology(OST) (of the Department of Trade and Industry), which provides funding to seven of the major research councils in the UK, does not make this a condition of accepting research funding. An official at OST said in an interview that " the widest possible dissemination of research findings" was one of its principle aims and agreed that the Internet was the best possible method of widespread access; yet without requiring free online access, this objective cannot be realised. (There was not sufficient time, however, to conduct detailed investigation into this specific issue.) By comparison, a greater and greater volume of US federally funded research is going online with free access and its government helps to pay for a number of Free Online Scholarship initiatives. As one knowledgeable members of this

movement explained, “in the US, the federal government has generally been a good friend of the FOS movement.”(Suber e-mail). Without a requirement of posting research online with free and open access, copyright in government-funded research output must generally be assigned to publishers as a condition of publication ( again, they usually receive the article at no cost) and they --- and they alone --- then have the power to determine costs of access, including on the Internet, and this means access restrictions in least developed countries. This “give away” policy represents a double subsidisation of publishers, that is a free transfer for both hard copy format and digital/Internet format, and with publishers such as Reed Elsevier making extremely large profits already, such state subsidies cannot be supported. The example set with government-funded research could prompt privately funded foundations and trusts to adopt a similar policy.

If and when such conditions were applied to government-funded research, peoples of poor countries could then also get Internet access to such materials. This would be an example of *cost-free development aid* to such countries and would have great use in fields such as education and medical care.

It is recommended that other developed and least develop countries also review their own granting mechanisms and require research that they fund follows similar conditions.

#### **6. The UK government and least developed countries should not enact similar legislation to the US Digital Millennium Copyright Act.**

Passage of such draconian legislation is not required under the provisions of the 1996 WIPO Copyright Treaty, and specifically Article 11. As explained above, encryption technologies do not discriminate between fair and unfair dealing or uses and , in fact, often override users rights long established by national copyright legislation and international conventions. Rather than forbidding such devices, “circumvention of technological measures for non-fringing activities should be enabled.” (IFLA) This is particularly critical for educational improvement in least developed countries. .

#### **7. The UK government and governments in other developed countries should propose an amendment to Article 11 of the WIPO Copyright Treaty ( the article dealing with “obligations concerning technology measures”) which would state that all copyright encryption devices must permit the “fair dealing” in copyright protected works or that such works will lose copyright protection.**

This recommendation is a complimentary to recommendation 1. The “copyright bargain” *presumes* that there will be access to and fair dealing/ fair use with copyright –protected materials. If publishers and other rightholders employ encryption technology and hence break their part of “the bargain”, we can well ask: why should society uphold that part of the bargain which benefits only rightholders?

#### **8. The UK government should amend the *Unfair Contract Terms Act 1977* to allow authors to challenge the requirement that they must assign their digitalisation rights to publishers as a condition of publication. Such a requirement is “unreasonable” and a successful challenge would provide significantly greater free access to materials on the Internet.**

The rationale behind this recommendation is explained in Section 4 and is not repeated here.

## **Section 4 Copyright, Education and Traditional Printed Materials: Some Examples from Sub-Saharan Africa**

### **4.1 The primacy of traditional printed materials**

As Appendix 4 makes clear, the “Internet revolution” has not arrived in least developed countries. In fact, it is not even on the horizon in many places and the computerised information accessing methods and World Wide Web resources that we who live in developed countries take for granted essentially do not exist in poor countries, except for a tiny elite. Hence, any study of copyright in least developed countries must also examine copyright questions related to traditional hard copy ( i.e. non- digitalised ) materials such as books and journals. In the education sector, as every one of our interviewees and e-mail respondents from Africa emphasised, traditional printed materials remain of paramount, indeed, often of nearly exclusive, importance. In its Basic Learning Materials Initiative, UNESCO states “In poor countries, with untrained teachers, the textbook becomes the most important, if not the only vehicle for the curriculum.” (UNESCO) On this question and a number of others, the reader is also referred to the first-rate report on South Africa and Africa generally prepared by Denise Nicholson, Copyright Services Librarian, University of the Witwatersrand, Johannesburg and the recommendations that she makes (See Appendix 2). Numbers of issues that Ms. Nicholson raises are not repeated here, particularly as she has extensive “on-the-spot” experience. This section of the report, although somewhat specific to Sub-Saharan Africa, raises issues that are common to a number of least developed countries.

### **4.2 Copyright as an access barrier**

Again taking an instrumental approach to copyright, the research for this section of the report revealed a wide variety of circumstances in which copyright laws have created and continue to create serious access barriers to printed materials. And although it should be stressed that *copyright restrictions are not the main barrier to use and access*, they reinforce other problems and certainly do not assist in the resolution of more critical access problems, whether it is the cost of materials, overall economic conditions within such countries, limited school purchasing budgets, illiteracy, access to health care information, and, in the case of schools, the relative paucity of photocopiers to reproduce and assist in the wider distribution of existing materials. Nor has copyright in these countries assumed any type of central role as an incentive for the creation of works. Certainly the formula espoused by some commentators and organisations, especially in the developed world, that resolution of the “copyright problem” in least developed (and developing) countries and resolution of the lack of access problem = the establishment of stricter laws and enforcement mechanisms --- and this is the essential message of the TRIPS agreement --- is far wide of the mark, this research report concludes.

### **4.3 A sample of some selected copyright and education issues in Sub-Saharan Africa**

In a relatively brief report such as this one, it is obviously impossible to provide a complete picture of the copyright situation of hard-copy materials in Sub-Saharan Africa. Here is a brief sample of some of the problems that we uncovered, either through already published materials or by interviews and e-mail correspondence:<sup>25</sup>

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<sup>25</sup> The problems and issues are not listed in any particular order, such as the frequency of occurrence or overall strategic importance.



a) In Southern Africa, nursing teachers, public health nurses, and other medical personnel who wish to distribute copyrighted materials to students and patients about HIV/AIDS, how to avoid becoming infected, and how to deal with the symptoms are required to pay copyright royalty fees. As a result, circulation of such information is seriously restricted. (Szente e-mail following discussions with South African government officials.) Most such fees are paid to publishers in developed countries. In the face of the HIV/AIDS pandemic in this part of the world, it is difficult to refrain from an editorial comment that this is simply “scandalous.”

b) Both the cost and availability of printed works remain central problems, especially in the poorest African nations (various interviews, Appendix 2). African public and most academic libraries are severely under-resourced. “Libraries in Africa have been shown to be hard to sustain ... the reality (is) empty shelves and worn-out book stock.” (Darch)

c) The traditional limited Berne exemptions such as the right to use quotations (Art. 10, (1)) or the “fair practice” use of works “for teaching” (Art. 10 (2) ) fail to appreciate the much wider access requirements to materials across Africa ( various interviews and published studies.)

d) Distance learning is an increasingly common approach to the provision of educational opportunities in Africa, in part because of internal transportation and communications barriers. Distance learning students are particularly in need of good access to materials because they cannot easily visit a library at their school or university. Yet, copyright use allowances often are restricted only to those that occur within the physical location of a school or a library and hence tens of thousands of students and their teachers cannot access badly needed print materials.

e) There is a major problem with the translation of materials. This is particularly serious as many African countries have more than ten languages.(various e-mails and interviews) In the production of materials across Africa, “ local languages are ignored in favour of English, French or Portuguese.” ( Darch) There are also few translations of works from one African language into another ( e.g., from Bantu (South Africa and elsewhere) into Edo, Yoruba or Hausa ( Nigeria) or vice versa.) Generally the right to make a translation must be individually acquired for each translation into a different language. The overall situation reinforces the inequality of languages, privileges European languages, and means that tens of millions of Africans are unable to get access to or read books and articles published in languages other than their own.

f) British universities which seek to establish linked (“sister”) educational programmes in least developed countries run into a number of copyright restrictions; for example, materials cleared by the UK Copyright Licensing Agency for domestic UK use cannot legally be used by overseas students. (e-mail on UK copyright users list)

g) Copyright clearance officers in schools and universities must regularly engage in heated negotiations with publishers, especially international publishers, regarding the cost and use of works to be photocopied for student use. The rates charged are “extremely expensive” and most copyright clearers generally tend to prefer dealing with local publishers where copyright fees are less expensive.( Szente interview)

h) Under existing copyright laws, people in Africa who are illiterate can only access materials under restrictive “fair dealing” provisions. Hence, a facilitator working in a local resource centre, which is not considered “a library”, cannot legally make multiple copies of materials to assist illiterate persons in learning how to read. Given the importance of the need to improve literacy in least developed countries, this is particularly serious restriction.<sup>26</sup>

i) Publishers in Africa face a range of problems in acquiring reproduction and translation rights from publishers in developed countries. “If someone is sitting in London who is in charge of rights and permissions and that person is dealing with someone in, for example, Germany who will pay a large fee for rights and someone from a small African nation where they have to give discounted or free service, obviously you know what happens.” (Altbach interview) Multinational publishers, especially British ones, often expect African publishers to be their local agents and salespersons, not “real publishers.” Acquiring reprint and translation rights remains an overly complicated process and, as one Kenyan publisher explained, “in the few exceptional cases where European publishers grants rights to their African counterparts, this is usually done on harsh and unfavourable terms.” (Chavaka) A British publisher who prints a UK-priced medical text may make only limited sales, for example, one copy each to the 39 medical schools in Egypt, which then become the source for hundred of photocopies; a much preferable alternative ( both for British and Egyptian publishers) would be to licence rights to a local publisher to bring out that same text at a cheaper local rates. (Zielinski) Some British publishers are much easier to deal with than others are and have acquired a better appreciation of African conditions and the situation of African publishers.

#### **4.4 - The ineffectiveness of the Appendix to the Berne Convention**

Some of the copyright-related problems which publishers in developing and least developed countries face (see Section 4.3) were supposed to be addressed by the provisions contained in The Appendix to the Berne Convention (Berne Art. 21, Appendix Art. 1-6) which came into force in 1971 after nearly a decade of often heated debate and lengthy drafting and re-drafting sessions. It is obviously impossible in a few pages to adequately summarise the complex negotiations and the various often radically different drafts of the several precursors to the actual Appendix, such as the Stockholm Protocol of 1967.<sup>27</sup> But even a brief look at this history will reveal why the provisions of the Appendix have, in subsequent decades, been of such minimal practical benefit to publishers ( or readers) in developing (let alone least developed) countries and why, at least in hindsight, the “Appendix model” has failed to overcome the severe information divide in printed materials between rich and poor nations.

As is well known, a great number of countries in Asia and Africa gained their political independence in the late 1940’s, the 1950s, and early 1960s. Economic growth and development often led the list of their national priorities. Their needs in the information field --- greatly expanded levels of literacy, the rapid establishment of schools and universities at all levels, getting even limited access to printed materials, especially in technical and scientific fields --- were very different from those of rich nations. And their proposed solutions were very different as well. For example, the position of India was that “ the high production costs of scientific and technical books standing in the way of their dissemination

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<sup>26</sup> For more on the barriers to access which copyright creates for illiterate and visually impaired persons in Africa, see Denise Nicholson’s WIPOUT essay listed in the bibliography.

<sup>27</sup> The best summaries of these negotiations, though neither is particularly sympathetic to the position articulated by developing countries, are Johnson and Chap. 11 of Ricketson.

in developing countries could be substantially reduced if the advanced countries would *freely allow* their books to be reprinted and translated by underdeveloped countries.” (emphasis added) (Johnson) But they quickly realised upon joining either the Berne Convention with its “traditionally very high” standards (Johnson) or the somewhat looser the Universal Copyright Convention (1952) --- or not joining because the standards required for membership were too demanding --- that international copyright conventions had not been set up with their particular interests or requirements in mind. “Their opinion of the world copyright situation as of 1963 was that it was essentially European in orientation and....opposed to their interests.” (Johnson)

As a follow-up to several UNESCO-initiated discussions in the early 1960’s, representatives from 23 African countries met in Brazzaville Congo in 1963 to begin formulating proposals to reform international copyright conventions in such a way that the needs of “new” African nations (and developing countries more generally) could be accommodated. Over the next several years, a number of proposals were drafted; they included a reduction in the duration of copyright, translation rights, easier acquisition of licensed reproduction rights from Western publishers, national jurisdiction over the regulation of uses for educational or scholastic purposes ( by contract, Berne did not and does not contain a basic education exemption), the protection of folklore (see Section 5 of this report), and some other related matters. Although there was some sympathy among certain organisations in the developed world to the particular needs of developing countries and all governments “with the possible exception of the United Kingdom” ( Johnson) agreed to some concessions, the copyright access proposals of the developing world were further restricted and further qualified, conference by conference and draft by draft, over the next few years. And even a supposedly final draft, known as the Stockholm Protocol of 1967, which had removed many of the key earlier proposals of developing countries, still was not acceptable to authors’ organisations, publishers, and other rightholders in the developed world. The sharpest difference between the developed and developing countries occurred, according to Ricketson, over the educational use issue. Although the term “educational purposes” was strictly defined in the Protocol, the addition of the words “in all fields of education” was “wide enough to apply to mass literacy and adult education campaigns extending far beyond the confines of the classroom.” (Ricketson).

Among governments in the developed world, the United Kingdom was “the Protocol’s principle opponent.”( Johnson) On the one hand, UK’s official representatives did speak with a certain honesty and forthrightness in its commentary on the Stockholm Protocol. The UK said that “[t]he Berne Convention is an instrument primarily designed to meet the needs of countries which have reached a certain stage of development.” (Johnson)<sup>28</sup> On the other hand, most British publishers did not mince their words. Sir Alan Herbert, chairman of the British Copyright Council, called the Protocol “a delayed action bomb of dangerous principle into the flagship of copyright; a tunnel under the walls of the copyright fortress.”( The Times, 3 and 11 August 1968, Johnson). To continue with this military metaphor, the Stockholm Protocol and its principles sank with little trace when it confronted with such an onslaught by the well-armed legions from the richest nations. The final set of copyright proposals aimed at meeting the needs of developing countries became the 1971 Appendix to the Berne Convention. But the Appendix contained no provisions for free educational use or for any reduction in duration of copyright. Nor did it adequately address the indigenous knowledge

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<sup>28</sup> This conclusion does prompt one to ask why least developed countries are today required, as a condition of membership in the WTO, to become signatories to Berne principles (TRIPS, Art. 9 (1) ) when most have still not “reached a certain stage of development.”

issue. (Section 5) It did, however, permit the possibility of invoking the compulsory licensing of works if voluntary negotiations over translations and reproduction rights --- available only under very qualified conditions---were not successful.

Since 1971, it is uncertain how many times these compulsory licensing provisions have been invoked. Writing in 1987, Ricketson stated that “only a handful of developing countries have so far availed themselves of its provisions.” Certainly the Appendix’s complexity hardly encourages its use.<sup>29</sup> And if it had led to significant benefits for publishers in developing and least developing countries, one can assume that news of its value as a negotiating lever would have spread. Without wishing for a moment to denigrate the knowledge of two leading experts on publishing in the developing world, their responses to our specific questions about the Appendix are telling. Richard Crabbe of Ghana, who is president of the African Publishers Council, said in an interview that he had only learned recently about the existence of the Appendix. And when we asked Professor Philip Altbach of Boston College (USA), who is editor and author of numerous books on publishing in Africa,<sup>30</sup> why so few publishers in the developing world had availed themselves of the provisions of the Appendix, he replied that he honestly did not know the answer. We can safely conclude that the Appendix today has a very low profile and can agree with Ricketson that there have been “no obvious benefits” to developing countries.

There are at least three weaknesses to the “Appendix” model that, although they may not have been obvious in 1971, certainly are apparent three decades later. Rather than creating any type of blanket licensing system, the Appendix operates on a “rights and access model” much preferred by publishers and RROs, that is, separate contracts, separate permissions, separate arrangements for each translation into each different language, and often separate negotiations for each and every use that is made of individual articles or books obtained through licensing. To use an analogy, the rights are “counted out”, one by one, much in the same way that jellybeans were sold in old-fashioned confectionery store ( and this in the era before measuring scales existed.) Such systems necessarily entail huge transaction costs and, in this case, the negotiations and exchanges of correspondence occur between parties located on different continents, not over a candy store counter. The implicit aim is to discourage rather than encourage the use or licensing of rights (Story 2000). Given the basically hostile views of publishers in developed countries to the Appendix, some, though not all, publishers in the developed world put little effort into licensing agreements with poor countries, especially when much greater returns can be derived from the sale of books or from negotiating licensing deals with parties in rich countries (Altbach interview, Chavaka).

The second weakness revolves around the question of power relation in compulsory licensing schemes more generally. The Appendix presumes that there will be voluntary and co-operative bargaining between rightholders and copyright licensees in poorer countries and that the compulsory licensing component will remain “ in the background...as a threat to be brought into operation if there is a reluctance to co-operate.” (Ricketson) On the one hand, it is true that one cannot judge the effectiveness of any compulsory licensing scheme simply by the number of times it is evoked; for example, very few compulsory licence applications are made for patents in the UK ( there were, for example, no applications made in the years 1991 and 1992) but the threat of obtaining a licence may strengthen a potential applicant’s negotiating position in voluntary licensing.(Phillips and Firth) Yet, on the other hand, the

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<sup>29</sup> The Appendix is a detailed and complex document and contains so many access exceptions that, as Ricketson points out, it “exceeds the original Berne Act in length.”

<sup>30</sup> See Altbach and the International Book Publishing: An Encyclopedia ( New York: Garland, 1995).

compulsory licensing model presumes that the potential licensee possesses some bargaining power and, for example, can both contract to use the rights and the potential to acquire national market penetration in their own country. But to take the case of Uganda, the overwhelmingly majority of US donor aid money intended for the publishing of primary school textbooks in that country was contracted to the local branch offices of multinational publishers in that country.<sup>31</sup> Increasingly, rights, for example, in textbooks are simply “transferred” from the London office of a UK publisher to its Kampala office ---which, of course, is no transfer at all --- and it would be foolish for a local Ugandan publisher to try to obtain rights to the same textbook (and likely to be undercut on price) distributed in Uganda by that UK-based publishing company. The Appendix, in other words, gives local publishers in poor nations scant bargaining power.

Third, the Appendix model was negotiated in the pre-photocopier era and presumes that the only way to increase access to materials is to transfer rights to local publishers as they would be the only parties with the capacity to reproduce materials. The “photocopier era” has, of course, changed all this, though admittedly there remains a relatively low number of photocopiers in many poor countries compared to richer countries. But teachers, schools, and universities in least developed countries are not “publishers” nor are they in the business of selling books and so the provisions of the Appendix are of no use whatsoever to them. What they primarily want are easy and cheap ways to reproduce materials themselves on a non-profit basis for the use of their students; yet again, the Appendix makes no provision for this. We can conclude that many least developed countries in Africa want and desperately need today is the same as what they wanted in 1963 at Brazzaville: free access to materials to be used for wide range of urgent educational and development tasks. Recommendation 1 (below) is, this report suggests, a far superior way to achieve this goal than the restrictive and expensive “Appendix model.”

#### **4.5 Exporting the RRO Model to Africa**

The main purpose of a reproduction rights organisation (RRO) is to collect copyright royalty fees from users on behalf of rightholders, both publishers and authors. Such fees are mostly generated through licensing schemes between RROs and user groups; educational institutions are the predominant licensees and the principle source of revenue for RROs. Hence RROs deserve particular attention in any assessment of copyright and educational issues in least developed countries. At present, there are a total of 33 RRO national organisations, mainly in the developed world. Three RRO’s currently exist in Africa: the Dramatic, Artistic and Literary Rights Organisation (Pty) Limited (DALRO) in South Africa, Zimcopy in Zimbabwe, and Kopiken in Kenya. (IFRRO website) One of the key functions of national RRO’s is to ensure the collection and transmission of copyright fees to foreign rightholders and, to facilitate such distributions, national RRO’s are members of the International Federation of Reproduction Rights Organisations (IFRRO). A number of bodies, in addition to the IFRRO and individual RROs in the developed world, are encouraging the further spread of the RRO system and philosophy, including to least developed countries. At its centenary meeting in April 1996 in Barcelona, Spain, the 25th Congress of the International Publishers Association passed a resolution calling for the creation of RROs in *every country*

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<sup>31</sup> .... over 90 per cent of all the books distributed in Uganda schools are published by British-based multinational houses whose presence in the country is merely symbolic. Although each of the multinational companies has a local counterpart the partnership is lopsided. The whole editorial process and the printing take place abroad. The local companies are only used for marketing...Most local printers rarely get the opportunity to handle the lucrative textbook tenders ( Tumusline).

*of the world* (IFRRO 1997). WIPO copyright education programmes in poor countries and various World Bank reports also encourage, in the context of improving or building copyright administrative systems and enforcement regimes, the establishment of national RROs within these countries. The question is: in the current copyright and publishing conjuncture, should the RRO model be exported to Africa?

The experience of the South Africa RRO, DALRO, is instructive. According to the latest available financial data 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 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.<sup>32</sup> 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 country, 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.*

For the establishment of a national RRO to make economic sense, that is, to facilitate some level of inter-jurisdictional equality in distributions, a country must, if it is required to pay significant royalty revenues, also have a significant publishing and publishing export sector. For example, the UK's CLA received a total of £3.6 million from non-British RROs in 1998-1999; in that same year, the CLA distributed £3.5 million to non-British rightholders. In the 1999- 2000 financial year, the US Copyright Clearance Center, which represents 9600 US publishers and tens of thousands of authors, collected \$US79 million and distributed an estimated \$US57 million to its own national rightholders.<sup>33</sup> The conclusion: the publishing and copyright picture in a country such as Senegal or Zimbabwe bears no relationship whatsoever to that in the UK, US or even South Africa. The RRO model simply does not fit, it is an artificial transplant from another copyright and publishing climate. In fact, there is so little enthusiasm for the RRO model in other parts of Africa that Kenya's Kopiken or Zimbabwe's Zimcopy , the two other African RROs and both established in 1995, did not make *a single financial reprographic collection during their last financial year* according to documents published on their websites.<sup>34</sup>

If the above analysis is not sufficient reason to reject the idea of exporting the RRO model to least developed countries of Africa (or elsewhere), the experience with the RRO model in developed countries should provide further warning. The so-called "blanket licences" that RROs usually offer to users do not include such key educational requirements as the distribution of non-profit student course packs --- extra royalties are added for such

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<sup>32</sup> Here is the math (slightly rounded):  $73,000 - 20,000 = 53,000$ ;  $137/53 = 2.5$ .

<sup>33</sup> Interestingly, the posted CCC's documents do not state how much was distributed to non-US rightholders.

<sup>34</sup> Repeated attempts to contact both organisation and discuss their operations were unsuccessful.

materials --- and the users, such as schools and universities, bear most of the expensive transaction costs of administering such schemes. (Story 2000)<sup>35</sup> Devoting already scarce educational resources within poor countries to administering such schemes on behalf of foreign rightholders simply does not make economic sense. Denise Nicholson's report on South Africa further exposes the severe access problems such schemes create, especially for poorer students; the problems that illiterate persons face because of the RRO model (and restrictive copyright legislation) has been mentioned above. Finally, as textbooks make up approximately 90 per cent of book publishing in Africa and as such texts are relatively inexpensive, wide-scale photocopying and distributing of infringing copies of African-produced textbooks is not a serious problem today. It would be difficult to reproduce photocopied texts more cheaply than the original; "it costs more to photocopy books than buy books." (Crabbe interview) And as Crabbe also noted, his Ghanaian-based company depresses its prices further to a break-even basis for export to some of the poorest African countries. So the creation of a national RRO would not significantly increase the royalty revenues paid to African-based publishers for the photocopying of their own publications. Recommendation 1 and even Recommendation 2 (below) are much-preferred solutions and do not require RROs to carry them out.

#### **4.6. A central international copyright conundrum**

The analysis above and particularly the recommendations that follow point to a central conundrum for least developing countries when international copyright regimes and the expansion of such systems are considered. On the one hand, the existing and highly uneven global patterns of ownership and production of copyright-protected work, as well as the range of new protections that developed countries and their publishing industries are demanding and often successfully gaining (both for materials in hard-copy and digitalised format) have worked and will continue to work primarily to the benefit of developed countries. (Section 1.2; World Bank 2001) For example, establishing stricter copyright enforcement measures in these countries, as required by the WIPO Copyright Treaty and TRIPS, will essentially create greater protection for the copyrighted works produced by rich nations. The same would be true if the RRO model is exported. But neither of these legal or institutional responses will allow greater access to this information because, in the first instance, *the overwhelmingly majority of peoples in poor countries or their school systems cannot afford to purchase such materials*. And even if they could afford such purchases and even if they do comply with "stronger norms of international protection of intellectual property" which the WTO is demanding, "the effect will be a large transfer of resources from net users of ideas (often in poor countries) to net developers of ideas (e.g. America)... governments of poor countries are being asked to co-operate in a redistribution of global income that will cost them hundreds of millions of dollars." (The Economist, April 2001) As this article concludes: "an unwarranted presumption that intellectual-property rights should, as a matter of natural justice, be as strong as possible also leads people astray in thinking about trade and development." Yet, on the other hand, some publishers and artists and their representatives from poorer nations are also asking that stricter copyright laws be enacted and their enforcement be strengthened in least developed and developing countries so that they can be protected from unauthorised uses and can earn greater incomes (interviews with several African publishers; Daley).<sup>36</sup> But

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<sup>35</sup> As a result of the 13 December 2001 interim decision of UK Copyright Tribunal, the CLA will now be required to include the provision of course packs within the blanket licence it offers to British universities and colleges.

<sup>36</sup> Further some of them believe that widened copyright protection will greatly assist them in preventing unauthorised uses of their work in developed countries as well. What needs to be appreciated, however, is that

the wider problem is that copyright regimes laws are generally non-selective and non-discriminatory, that is, they make no distinction as to who owns works or where they are created. And the protections they offer arise “automatically” ( i.e. they are no registration requirements and hurdles for copyrightability are low) and extend essentially on a global basis ( i.e. to all countries which are members of Berne or the Universal Copyright Convention). The main point: *greater restrictions within least developed countries on the use of works published in poor countries necessarily means, as well, greater restrictions on the use of imported works published in developed countries*; there is a significantly greater quantum of the latter and, moreover, the rightholders of such works have far superior abilities to enforce their rights.<sup>37</sup>

And so this is the conundrum: unfortunately, most least developed countries --- and here looking at the national interest of such countries and not merely the interests of particular sectors such as publishers --- are not currently in an economic position to benefit significantly from more expansive copyright laws or their stricter enforcement within their own borders. (Developing countries are in a somewhat better position.) Recognising, a) that copyright regimes are non-discriminatory by their very nature, b) that international copyright is, to put it colloquially, “a game” that only the powerful can play effectively, c) that poor countries have particular priorities and needs, including education and literacy, *the main reform effort should be aimed at improving access and strengthening users’ rights*. Given that copyright is non-rivalrous in consumption and remembering the aphorism of Thomas Jefferson (section 1.7), *dramatically improving such access to hard-copy materials will require a minimum of sacrifice by the developed world and, in fact, will be in its long-term interest*.

In the same vein, it should be recognised that the contemporary importance of access to information and the fortress-like barriers which international (and national) copyright regimes create for that access in least developed countries are issues that still have little purchase in contemporary policy debates. These issues were not mentioned, for example, in published reports of Prime Minister Tony Blair’s “Partnership for Africa” speech in October 2001 at the Labour Party Conference.<sup>38</sup> Nor, and here applying the popular “rights and responsibilities” paradigm, do the responsibilities of copyright holders to poor nations receive attention; instead international forums and treaties are dominated by calls for ever stronger guarantees for the protection of their “rights.” Yet, a number of our interviewees, mostly people on “the sharp end” of information access problems, did appreciate the significance of these issues. One South African IT expert and interviewee, for example, commented in detail on the role of copyright treaties and the attitudes of publishers:

these agreements and rules tend to be focused on the protection of information and do not give adequate recognition to the fact that it is information, and access thereto, that will separate the haves from the don’t haves... Unfortunately publishers and

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intellectual property rights are only as strong as one’s ability to enforce them (see Galanter on the wider issue of enforcing “rights” and the radically different power positions of “repeat players” and “one shoters” ) and that, unfortunately, most publishers and artists in least developed countries lack such financial ability and power...and there are few signs that authorities in developed countries are interested in assisting them in such endeavours.

<sup>37</sup> Compare, for example, the global financial and lobbying resources of the US-based Business Software Alliance with the Jamaican Artists and Craftsmen’s Guild, the latter justifiably concerned about the unauthorised use of artistic works.

<sup>38</sup> Mr. Blair warned that “the state of Africa is a scar on the conscience of the world. But if the world as a community focused on it, we could heal it. And if we don’t, it will become deeper and angrier.” (McGreal).



those with commercial interests tend to believe that they need to be protected at any price.... There is little benefit for the developing world because these copyright holders do not see their mandate as including the distribution of knowledge... Access to information enables so much growth and knowledge that it is frightening and to put the same restrictions in items of “entertainment” as those articles of knowledge development is very restrictive (Watermeyer e-mail).

Denise Nicholson’s analysis in Appendix 2 raises related concerns. These and similar messages must be transmitted to policy makers in developed countries and acted upon if government in the developed world are really interested in assisting African countries to progress.

While least developed countries are, not surprisingly, very interested in setting in place the conditions that will encourage the publishing of more indigenous works, including technical and scientific works, the development of more and better trained authors to write such works, and the spreading of knowledge, *it is the creation of a better educated and skilled citizenry that will be a much greater catalyst for such developments than more and more restrictive copyright laws.* ( This rationale lies behind Recommendations 1 and 2.) A much more realistic appreciation of the incentive function of copyright is needed, as is a better understanding of the relationship between copyright laws, access to information, and national economic development in least developed countries (see Recommendation 5). If least developed countries wish to improve the quality, quantity, and diversity of works produced --- and there is every reason to believe they do--- this report recommends that their government significantly increase financial and other support for their own national publishers, for academics and researchers at their own schools and universities, and for individual writers.<sup>39</sup> Such measures are a much-preferred alternative to the further expansion of national and international copyright regimes; they are already too restrictive for least developed countries and their needs.

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<sup>39</sup> The African Publishers Association, for example, has a number of suggestions as to how the publishing industry in Africa could be improved (Crabbe interview; see also work of Altbach.) Chapter 5 of UNESCO’s “Basic Learning Materials” initiative gives other proposals.

## Recommendations

**1. The UK government should work with British publishers (and other rights holders) and with the governments of least development countries to establish a new system under which the latter (and local non-profit institutions) are allowed *free use*, for an initial trial period of 20 years, of copyright-protected hard copy materials for all non-profit educational, research, public health, and other public interest related activities. All literacy programmes and illiterate persons in whatever setting or situation --- a library, a classroom, distance learning, local resource centre, individual user—should similarly be exempted from all copyright restrictions and receive free access. Rights of translation into all national and local ( i.e. non-European) languages should be included. Other developed countries should commence a similar initiative.**

This recommendation broadly follows the principles laid down in the 1967 Stockholm Protocol. Unfortunately, the needs that prevailed in the 1960's and which were articulated at the 1963 Brazzaville conference still exists today: least developed countries urgently require access to a wide range of educational and other hard copy materials to assist in fulfilling a number of their educational, literacy, economic and social development objectives. The provisions of the Appendix to the Berne Convention have failed to meet these requirements and any attempts to revise the Appendix to take account of these needs would likely require at least a decade of deliberation given that, as an initial matter, any changes to the Berne Convention requires the unanimous consent of all signatories. Establishing RROs in least developed countries to manage such a new system would add significant transaction and administration costs and, in any event, this system is not designed to generate any revenues for either publishers or RROs.

This proposed new system would, arguably, be compliant with both the Berne Convention and the WIPO Copyright Treaty and would be, in fact, a concrete application of the preamble to the WIPO Copyright Treaty: "Recognising...the large public interest, particularly education, research and access to information, as reflected in the Berne Convention." The two principle conditions for establishing any limitations on authors' rights (again, better understood as primarily the rights of rightholders, who are usually not the authors, and conceptualised as the exercise of users' rights) are that such limitations "do not conflict with *the normal exploitation* of the work" and "do not unreasonably prejudice *the legitimate interests* of the author" (emphasis added) ( Berne, Art. 9 (2); see also WIPO Copyright Treaty, Art. 10). The "normal exploitation" of works printed by publishers from developed countries is, within least developed countries, *non-exploitation*. A range of factors, including the price of such materials (for either libraries or private purchasers), the inaccessibility of many such works, the number of illiterate people, and the non-translation of these works into the hundreds of languages found in the least developed world, means that such works are, in the main, not purchased, not used, not "exploited." The experience of two RRO's in Africa (Zimcopy and Kopiken) reinforces this point. Major medical journal publishers also recognised this "non-exploitation" reality as well when they offered free online access to their journals (see Section 3); it is unlikely that they would have agreed to such an arrangement if they considered free access undercut an existing or potential market in such countries. Indeed, this "zero-pricing" initiative provides a precedent for the establishment of a free access system in hard-copy materials as well.

In the same vein and because of this typical pattern of "non-exploitation", the "legitimate interests" of authors would not be damaged as they are, at present, not able to exercise such

financial interests. In fact, such a new system would potentially strengthen the interests of many authors. It is in the “legitimate interest” of many authors, for example academic authors who produce education-related materials, to have the widest possible exposure of their work, including within least developed countries. This proposed free access system could improve such access as the current “non-exploitation” model does not allow the exercise of their “legitimate interests.” Moreover, few authors will suffer significant financial losses ( at present, publishers of journals receive the lion’s share of copyright royalties ( Story 2000) ) and most education-oriented authors would, we can surmise, like to play their own small part in encouraging open access to information and the attainment of educational objectives in least developed countries. This would become an added “psychic benefit” of writing.

One interest group that might object is publishers, although as noted, they would not suffer significant losses because the existing market is so marginal. In any event, non-authorial interests, that is, the interests of publishers, do not receive explicit protection under the terms of Berne or the WIPO Copyright Treaty. Without exception, the Berne Convention states (e.g. in the very first sentence of the preamble and repeatedly in latter sections) that its aim is the protection of the “ rights of authors.”

Finally, such a voluntary free access system does not jeopardise the short-term interests of either authors or publishers in developed countries and will, as the library model cited in Section 3 reveals, operate in their long-term interests. That is, a significantly wider audience of literate persons and readers of many tastes would be introduced to a new range of reading materials, for example during their school years, and they would then be encouraged to later purchase a greater volume of books or seek to translate books into many other languages. Improving such access is particularly important in the fields of science, technology, and the improvement of basic literary levels as these areas are central to the future economic well-being of less developed countries and are more “culturally neutral” than materials produced in the humanities and social sciences (See recommendation 7).

After a 20-year trial period, the duration of one generation, such a system would need to be reviewed and, if required, extended for a further period or modified.

One can only hope that British publishers would take a more broad-minded and generous approach to access matters today than they did in the 1960’s when they led the successful fight to gut the access and use proposals begun at the Brazzaville session.

**2. Although Recommendation 1 is certainly the much-preferred solution to this severe lack of access problem, an alternative is to establish a system of nation-wide blanket licensing schemes between individual publishers (or perhaps a consortium of publishers) from developed countries, including the UK, and least developed governments. One annual payment would cover the use of all printed materials from these publishers for all non-profit educational, research, public health, literacy programmes, and other public interest related activities, including the translation of works. The licensing rates would be kept low and publishers in developed countries would be encourage to donate whatever profits they receive ( which would likely exceed the profits they now receive from the sale of their material in least developed countries), to writers’ organisations, educational institutions, selected public-interested publishers or other worthy groups in least developed countries. Such transferred royalties would encourage the wider production of fiction and non-fiction works in these countries and in a range of non- European languages.**

The reasons why attempts to reproduce Western-style RROs in least developed countries to administer licensing schemes do not need to be repeated in detail here. To require, as is done by RRO's in many developed countries, that each user in least developed countries fill out an individual permission form for each and every article used, for example in an educational course pack, would be counter-productive and lead to a wide variety of communications and administrative problems in least development countries. A countrywide and all-inclusive blanket licensing system is the only feasible approach to take.

A significantly greater number of photocopiers and small-scale offset presses would need to be made available, especially in educational institutions, if this recommendation ( or recommendation 1 ) is to have a significant impact. (Giving assistance for the purchase of such photocopiers would be a welcome donation from developed countries.) The amount of money that publishers lose as a result of photocopying, for example, by students is often exaggerated; a common assumption made is that photocopied and freely distributed materials represent lost sales when, in fact, if such photocopied materials were not available, there would usually be no access to nor any sales of the original whatsoever. One expert in publishing in the developing world who was interviewed explained that the amount lost by photocopy was “ not that significant” and “ would be outweighed by the benefits” (Altbach).

As the publishing industry has one of the highest rates of return on equity of any commercial sector (Wyly), it is indisputable that publishers, especially large multinational publishers, could afford to return licensing royalty payments to assist creative activities in less developed countries. For example, the pre-tax profits of Reed Elsevier in its 1999-2000 financial year were £690 million. By assisting in the creation of more works, publishers might make contacts with new writers whom they could publish. Some might suggest that the UK government or governments in other rich countries should, as part of their international development activities, assist in the payment of such licensing fees by least developed countries; such suggestions should be rejected as this has the potential to increase the level of licensing fees publishers might request and could lead to unnecessary subsidisation of the publishing industry in rich countries.

**3. It is recommended that, where necessary, other developed and least developed countries should amend their current copyright legislation if such legislation prevents or limits the implementation of Recommendation 1 or 2. As is mentioned above, such a scheme is compliant is arguably compliant with the Berne Convention, though obviously further analysis on this point is required.**

There was not sufficient time to conduct a detailed study of the existing copyright legislation in least developed countries in order to suggest the particular statutory changes that might be required to implement recommendations 1 or 2. For example, copyright legislation in these countries typically does not include exemptions for public health and literacy programme uses.

**4. Least developed countries should discourage any attempts by local entrepreneurs to establish national RROs and should not provide for their creation in national copyright legislation.**

The rationale for this recommendation is explored in some detail in section 4.5 and is not repeated here.

**5. In its discussions with and visits to least developed countries about the role of copyright, the World Intellectual Property Organisation should provide a rather more balanced and realistic view of the role of copyright within these countries, meet with a wider range of local officials, including librarians, educators and other user groups, and, recognising that copyright policy is information policy, enquire as to their specific requirements regarding access to information, including costs and information “blockages”, and provide assistance to help them meet these needs.**

WIPO officials regularly visit least developed countries to discuss intellectual property matters. For example, Kamil Idris, Director General of WIPO visited Senegal, a least developed country, in April 1998. The agenda items discussed during that visit is typical of what occurs at such sessions in other least developed nations. A WIPO news release issued after this visit to Senegal stated that WIPO had agreed, in the area of copyright, to “WIPO financing of a national project with emphasis on the following aspects: a) training of trainers; b) strengthening of the protection apparatus; c) promotion of awareness of the fight against infringement; d) support for the introduction of software in connection with the implementation of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement)” ( WIPO 1998). As the analysis contained in this and other sections of this report underlines, such a narrow and one-sided orientation to copyright overlooks a number of key issues for least developed countries. The approach taken by WIPO in such countries primarily reinforces the interests of foreign rightholders, whether Reed Elsevier or Microsoft.

**6. The UK government should amend the *Unfair Contract Terms Act 1977* by removing S. 1 (c) from Schedule One; this section exempts all contracts relating to the creation or transfer of intellectual property from the “reasonableness” requirements of contracts covered by this Act. Such an amendment would allow an author or academic or, more likely, groups of authors and academics, to challenge the reasonableness of current standard forms contracts which most publishers require authors to sign *as a condition of publication*. Such contracts require that an author assign to publishers all rights, including copyright, re-publication, and digitalisation rights. It is recommended that governments in other developed and least developed countries should amend similar legislation if it exists.**

As has been explained in various sections of this report, one of the major barriers to wider access and usage of works, whether in digital format (e.g. on the Internet) or in traditional printed format, is that publishers’ often guard their property rights in information and printed expressions very jealously, including when least developed countries wish to use them. If challenged, publishers often evoke the supposedly trumping phrase “ this is my/our property”. What is seldom asked is: how did that information or expression become their property, what were the mechanisms involved in acquiring this property? To answer these questions, we must look at the terms of the contract signed by some (though certainly not all) authors, who are the creators and first owners of copyright (subject to the employment exception which, in the UK, is found in CDPA Section 11 (2)) *and* publishers; specifically, we need to find out whether an assignment of copyright ( and other authors’ rights such as re-publication or digitalisation rights) has occurred. ( Certainly and by tradition, a majority of fiction writers and a smaller percentage of non-fiction writers of books retain copyright (though not necessarily other rights) in their own works. And some other authors voluntarily assign copyright and other rights to publishers.) A significant percentage of other authors,

including authors providing education-related materials, are, however, required, *as a condition of publication*, to assign copyright (and other traditional or new author's rights) to a publisher. If only some publishers followed this practice and others did not, an author who wished to retain her/his author's rights could submit her/his work to the latter group of publishers, that is, they would retain "the freedom" that a competitive market economy claims to hold as its highest value. If, however, the "assignment as a condition of publication" practice is followed by almost every publisher in a field, as it is, for example, by commercially-owned academic journals in the UK, then authors have no choice but to assign rights in their work and lose any control over the subsequent use and access of their work. It is a classic situation of "unequal bargaining power." This report has concluded that publishers only require first publication rights which is the situation that prevails, to take one example, with author's publications in US law reviews.

Without arguing the matter fully or providing case law references, such contracts, it is suggested, are "unreasonable", defining "unreasonable" as meaning "exorbitant", "immoderate", "arbitrary", or "confiscatory" (Black's Law Dictionary, 6<sup>th</sup> edition). Here is the nature of the unreasonable economic exchange that occurs: the publisher receives at no cost a copy of the article, increasingly in a proof-read and digitalised format, and acquires all rights in that work, including first publication, copyright, republication and digitalisation rights. The author receives no direct financial compensation, though certainly indirect financial rewards in the form of possible career advancement and a higher salary. Further, not only does not the author lose all control over the further use of or access to this work (in fact, until the Copyright Tribunal interim decision of December 2001, a teacher in the UK was required to charge a copyright royalty fee to her/his own classroom students if she/he wished to distribute to them her/his own article), but universities, who have paid the salary of the academic author, must buy back from publishers and RROs what they have given away for free. Indeed, under the terms of copyright licensing schemes for universities, they must buy back what they have given away for free as many as four times: first, to purchase of the actual book or journal; second, to allow "fair dealing" photocopying by students in a university library (and it should be added that why a university has to pay for the right to undertake "fair dealing" with a work remains controversial, to say the least); third, to place a photocopy in a university short-loan collection; and fourth, to use the material in a non-profit classroom course pack printed at a non-profit university print centre. (Because of this final point, the logic expressed in the US case of *Basic Books v. Kinko's Graphics Corp.*, 758 F. Supp. 1522 (S.D.N.Y. 1991) does not apply.) Not only is this a rather questionable business model for universities--- to understate the absurdity of this situation --- for the production and distribution of knowledge, but it also dramatically decreases access to and use of that knowledge. And it is the signing of an "unreasonable" contract that lies at the centre of this tangled and inequitable web of copyright power relations and limitations on access.

In the UK, as in many other jurisdictions, including in least developed countries, "unreasonable contracts" are considered as contracts that are contrary to public policy and "unreasonable" terms in such contracts are unenforceable, that is, they can be breached without penalty. The UK legislation governing such contracts is *The Unfair Contract Terms Act 1977*. Parties who consider that they have signed an "unreasonable" contract can, if necessary, commence a legal action to have "unreasonable" terms in such a contract declared unenforceable. (See S. 3 (2) (b) and S. 11). Initially then *The Unfair Contract Terms Act 1977* might seem to provide the statutory basis for a challenge as to the "reasonableness" of certain contracts which some authors are required to sign with publishers as a condition of getting their work published. There is, however, a key exemption (or colloquially, a "loop-

hole”) that prevents such challenges: Section 1 (c) of Schedule 1 of the Act states that Section 3 of the Act does not extend to any contract that relates to the “creation or transfer of a right or interest in... copyright”(or other types of intellectual property) Hence, such contracts cannot be challenged by aggrieved authors. It is recommended that the UK government amends Schedule 1 of the Act and brings contracts dealing with the transfer of copyright within the scope of this unfair terms act.

At first glance, such a statutory change might appear quite remote from the issue of how to improve access to printed materials in least developed countries. In fact, it is not. Academic authors are primarily interested in the widest possible exposure of their work. Given that neither copyright nor the promise of direct financial reward are motivators for their work in academic journals (Association of Learned and Professional Society Publishers) , it is the rare academic indeed who would refuse the request from a publisher in a developing or least developed country for wider circulation of that academic’s work. The same spirit would, undoubtedly, animate an academic if a teacher in a least developed country wished to photocopy such articles and distribute them for free to her/his students. Nor would few academic say “ no” if a teacher wished to download that author’s article from the Internet and distribute it on a non-commercial basis. In this regard, no academics or researchers objected (at least to the knowledge of this researcher) when the six major medical publishers announced that they would permit free access in least developed countries to the articles that the academics wrote. Rather, the principal opponents of free access to and use of academic and journals articles are RROs and some, though not all, publishers. And because they are the parties in “the copyright driving seat” so to speak --- the latter holding copyright and the former acting as their royalty collectors --- they are the parties who have been given the legal power to block access to and use of such articles, either by the photocopying of the hard copy version or by downloading of a digital version from the Internet. Removing such a roadblock opens up the possibility of much greater sharing of knowledge, not only in least developed countries, but also in developed countries by allowing the work of Third World scholars to get more attention and access in developed countries. (These unreasonable contracts are one factor, though of course not the only one, limiting such access.)

**7. As some governments in least developed countries are concerned --- to varying degrees ---about the sizeable importation of Western values and Western approaches to issues that are necessarily embedded in most Western-published books ( as well as movies and in materials posted on the Internet), they may wish to consider the imposition of a tax on all books imported from developed countries. The taxes collected under such a scheme should, it is suggested, be used exclusively to assist in the writing and publishing activities in least developed countries.**

As one of our interviewees explained , “when the only books that the developed countries can access are from the West, with Western notions of law, history, family, society, economics and politics, are the children of these developing countries not, in effect, being held captive to Western oriented, Euro-centric notions and values? Worse, it is a one-way trade. African books have little or no chance of getting into Western classrooms as part of the core curriculum. There is no reciprocity.” (Crabbe) Section 1.2 of this report backs up this notion of the global one-way “traffic” in intellectual property, including in copyright protected materials.

No doubt some developed countries would object to this recommendation and consider it as a barrier to the widest possible circulation of copyright-protected materials. However, “

cultural exemptions” are permitted under international copyright regimes and least developed countries could use the EC’s “ Television Without Frontiers” Directive as a precedent.

**8. There should be a re-examination of the criteria used to determine what is a “ developing country “ in international copyright regimes. South Africa has a particularly compelling case to make on this question.**

This issue is discussed in more detail in Appendix 2. Surely the countries of the world who have been so willing to welcome South Africa back into the comity of nations should also be willing to recognise that this country is, in many ways, still a developing country and needs to educate its children who have been so disadvantaged and disenfranchised by its colonial and apartheid past. To declare South Africa a “ developed country”, as the Berne Convention does, and hence not able to get special copyright exemptions as a “developing country” is an injustice and again demonstrates the inflexibility of Berne.



## **Section 5 – Copyright and Intangible Indigenous Heritage/ Knowledge**

### **5.1. Indigenous knowledge as a copyright issue**

When intangible indigenous heritage/knowledge (formerly and narrowly labelled “folklore”) is examined as an intellectual property issue, it is often considered as solely falling within the purview of patent law; indeed, the Commission has commissioned a patent-oriented study on this very issue. Yet, intangible indigenous knowledge and its protection --- or more accurately, its lack of protection --- also has a number of global and domestic implications for copyright law and policy; explicating a few of these copyright-related strands and making several recommendations on this contentious topic are the main aims of this rather brief section.

### **5.2 A brief history of international law making on indigenous knowledge**

Since at least the early 1960s, both African and Asian countries have attempted to put the issue of indigenous knowledge on the international copyright agenda. At the 1963 UNESCO-organised “African Study Meeting” held in Brazzaville (Congo) which dealt with a range of copyright issues in the recently-independent African countries, “the inclusion of special provisions safeguarding the interests of African countries in respect of their own folklore” was one of three most important issues raised by delegates. (Johnson) At the 1967 Stockholm Revision Conference (of the Berne Convention), the Indian delegation proposed that works of folklore be specifically enumerated as literary and artistic works under Article 2(1) of Berne (Ricketson). This effort failed and the only specific change made to Berne was the addition of current Article 15(4) covering “unpublished works” by “unknown” authors; as this section makes no reference to the specific issues faced by indigenous peoples, it has proved a wholly unsatisfactory, “grab bag” approach to convention and law making. The section mandates the creation of national “authorities” to regulate with such matters, but as recently as 1995, none had been established (Githaiga).<sup>40</sup> The 1976 Tunis Model Law on Copyright for Developing Countries did establish a definition of folklore, appreciated that national folklore “constitutes an appreciable part of cultural heritage” of developing countries, and proposed that folklore need not be “fixed in some material form” to attract copyright protection. But Tunis has remained simply “a model law.”

In the 1980s, spurred by the growing consciousness of indigenous peoples on a number of continents, the issue was re-conceptualised as a matter of indigenous peoples’ self-determination, collective rights, and cultural preservation. Another model provision, the 1985 UNESCO Model Provision for National Laws on the Protection of Expressions of Folklore Against Illicit Exploitation and Other Prejudicial Actions (UNESCO 1985 Model Provisions), recommended the passage of national statutes prohibiting a range of actions (e.g. wilful distortion of folklore); to my knowledge, not a single country has enacted such provisions. In this same decade, academic commentators in the West also began commenting on issues such as misappropriation and cultural health (Jabbour). In the first half of the 1990s, numbers of important UNESCO/WIPO conferences were held and declarations issued by indigenous communities following their own conferences, such as the 1993 First International Conference on the Cultural and Intellectual Property Rights of Indigenous Peoples in Aotearoa, New Zealand. More recently, the first session of WIPO’s “Intergovernmental

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<sup>40</sup> It should be noted here that Section 61 of the *Copyright, Designs and Patents Act, 1988* incorporates similar wording to Berne Article 15(4) and is equally ineffectual.

Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore” was held in late April and early May 2001 in Geneva. Preparatory documents noted that “as of January 1, 2001, at least 23 countries and three regional integration organisations had made, or were in the process of making, available specific legal protection for traditional knowledge-related subject matter.” (WIPO, March 2001)<sup>41</sup> Yet, the issue is far from settled...and with the increased commodification of knowledge (discussed in earlier sections), with globalisation, and with dramatically improved communication technologies, the misappropriate/misuse issue appears to getting even more serious.

### **5.3 A few examples of the problem**

A few examples highlight the problem.

a) Back in 1996, a German rock group named Enigma put out a hit that was near the top of the international pop charts for more than six months. ‘Return to Innocence’ sold more than five million copies world-wide, put the term ‘world-beat’ on the musical map, and even was featured as background music for advertisements promoting the 1996 Olympic Games in Atlanta. ‘Return to Innocence’, however, was *not* Enigma’s song. Here is what happened (Riley): a group of more than 30 indigenous singers from Taiwan was invited by the French Ministry of Culture to perform Taiwanese tribal songs at concerts across Europe. The French Ministry recorded the concerts and issued a CD which the German music magnate Michael Cretu (aka ‘Enigma’) heard and liked very much. He decided to use significant sections on this Taiwanese song in his own musical recordings; to accomplish this, Cretu purchased the rights to this music from the French Ministry. When recorded by Enigma, this music was called Enigma’s ‘Return to Innocence’. As for the Taiwanese folk singers, they received neither recognition nor financial compensation; in fact, they were not even told about any of these dealings.

b) In Australia, the indigenous arts and crafts industry brings in annual revenues of almost Aust\$200 million, but indigenous people, the actual creators, only receive about 25 per cent of this return. (Githaiga).

c) Noting that African oral literatures and traditions cannot be claimed as the “intellectual property of anybody in particular”, Kenyan publisher Henry Chavaka explains that “as soon as this (area) is researched into, and the material compiled and published by the researcher (most of them from developed countries), it becomes his [or her] copyright, and no one can use it without his permission.” (Chavaka) The ‘no one’ includes local publishers and classroom teachers who may want to teach their own students the cultural history and traditions of their own country or invite a local storyteller into the classroom; if copyright law was followed strictly, both groups would be required to pay a sizeable copyright fee or risk being the defendant in a copyright infringement action if they copied this expression, now owned by a Western-based rights holders, without permission.

d) Another commentator has written that “ [f]or western designers the whole universe of decorations and images of artists from the Third World constitute an inexhaustible reservoir

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<sup>41</sup> It should be noted, however, few such laws involve copyright protection.

by which they serve themselves, shamelessly and for sure, without adequate payment to the source of their ‘inspiration’. ” (Stroter)<sup>42</sup>.

#### **5.4 Why copyright presumptions are ill-equipped to deal with this issue**

As a significant number of commentators and conference reports (Coombe, Riley, Puri, Githaiga, UNESCO May 2001) have concluded, existing copyright presumptions are ill-equipped, on both a doctrinal and philosophical level, to deal with the growing concerns of indigenous peoples about the protection of their knowledge and heritage. Among the problematic conceptions:

a) The Requirement of Originality: - Many forms of indigenous arts do not arise from the distinct creative style of an author and, indeed, are not “originated” by a person in the sense articulated, for example, in the well-known UK copyright case of *University of London Press v. University Tutorial Press* [1916] 2 Ch. 601.

b) The Western Copyright Notion of the Single Author - By their very nature, indigenous expressions are predominately derived from a wider culture and community. It is seldom possible to identify a single author (UNESCO, May 2001). Indeed, “the lauding of individual artists is very much a western response to Aboriginal art, and a facet of Aboriginal artistry which Aboriginal people find quaint.” (Puri)

c) The “Fixation” Requirement - Many indigenous works (e.g. by the Taiwanese folk group) have not been fixated in a material form (i.e. either written down or recorded) and are considered in the public domain...and hence susceptible to uncompensated and non-consensual appropriation. Oral, rather than written, traditions predominate in indigenous communities.

Other problems occur in relation to duration of copyright and derivative works. On a wider level, “(indigenous) art is considered to be precious and valuable not as an object, but for its life-sustaining qualities. The languages it uses – the signs, the symbols and the codes may all be information necessary for survival.” (Githaiga) “Cultural property is the very soul of Indian tribes... (and their) indigenous works fail to fulfil individualistic notions of property rights that underlie the structure of Western law...” (Riley) The central philosophical justification for copyright, creating an inventive structure so that more works can be created and, hence, so that the public domain will become richer and fuller, is also incoherent in the context of indigenous works. Creating their expressions in the absence of copyright laws, indigenous communities have, for centuries, developed a rich and varied cultural heritage and, in fact, one that is much richer than what is called “popular culture” and entertainment in many developed Western countries today.

There is a further problem with regard to the enforcement of rights. Considering both the paucity of either domestic or international protective legislation and the fact that intellectual property rights are, in most instances, only as strong as the ability of a rights holder to enforce them (Galanter), indigenous communities are, in the current conjuncture and legal vacuum, relatively powerless to enforce such rights by themselves.

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<sup>42</sup> During a recent vacation in Morocco, this author saw fabric designs created by a Marakkesh textile designer and manufacturer whose exact designs, as I informed him, could be found in the catalogue of leading British textile house; he assured me his fabric design had been used without his knowledge or permission

## **5.5 The conclusions that can be drawn**

We can draw several conclusions. First, there is widespread misappropriation of indigenous culture across the globe, including, we can safely surmise, by British-based companies and individuals. Second, this widespread misappropriation is a direct threat to the continued cultural survival of indigenous communities across the globe and communities, we should add, which are often the most economically poor communities within some of the poorest and least developed nations. Third, copyright is the wrong vehicle for the protection of indigenous knowledge “(Copyright) has in the end proved to be inadequate and unable to guarantee protection for the intangible cultural heritage...”(UNESCO, May 2001).“Any attempts to mould western copyright law to accommodate indigenous notions of communal property would compromise the former and stifle the latter.”(Githaiga)

## Recommendations

**1. The UK government and governments in other developed countries should give a significantly higher profile priority, both as a global justice and “equitable users” issue, to the protection, preservation, and misappropriation of indigenous knowledge.**

The fact that the UK itself does not contain “indigenous communities” (in the sense being discussed here) should not mean that the situation of indigenous communities elsewhere deserves to be somehow forgotten or ignored by the UK government as “somebody else’s issue.” Just as there are growing global concerns about goods produced by child labour or under other intolerable conditions ---and hence the establishment of “fair trade” schemes and consumer boycotts ---so, too, should the preservation and misappropriation of indigenous knowledge take on a higher priority. On the international stage, for example at the important 1997 UNESCO and WIPO World Forum on the Protection of Folklore in Thailand, the UK joined with the United States in taking a retrograde and insensitive position on the forum’s Plan of Action; the UK is viewed as one of the “hard-liners” against the protection of indigenous cultural expression. This reputation can only be changed by concrete action.

**2. The UK government and governments in other developed countries should enact domestic legislation which would prohibit the importation of indigenous expressions and heritage that are not authorised by the indigenous communities which created them and which misrepresent the source of that expression or wilfully distort that expression in a way that is prejudicial to the interests of that indigenous expression.**

Sections 22-24 of the *CDPA 1988 Copyright, Designs and Patents Act, 1988* make the importation (into the UK) of copyright-infringing material a matter of secondary copyright infringement; Section 107 (b) makes such importation a criminal offense; Section 111 permits such illegally-imported infringing copies to be treated as “prohibited goods” by the Commissioner of Customs and Excise. The same legislative attention should be given to misappropriated indigenous knowledge. Similarly, a number of domestic statutes and international agreements prohibit the trade in endangered species across international borders. Further, the 1985 UNESCO Model Provisions called on countries to enact domestic statutes in line with the above recommendation. Such a UK statute would be of great assistance in the enforcement of rights because, as was noted above, indigenous communities usually lack the financial and legal resources to enforce their rights in a location that may be thousands of miles from their homes and, indeed, often never learn of such misappropriations or only find out months or years after the fact. UK legislation (and that of other developed countries) should not be enacted until there has been close consultation with affected indigenous communities.

**3. Given that traditional copyright paradigms and presumptions are inappropriate and ineffective methods of protecting indigenous expression and given that almost four decades of debate and discussion has resulted in negligible concrete results, the focus should instead be on the creation of appropriate *sui generis* system of protection and preservation; such specifically tailored systems are, in the main, much preferred by indigenous communities and this decision should be respected by the UK government.**

Indigenous communities on several continents and a growing number of academic commentators have proposed a range of path-breaking legal approaches to the protection of indigenous knowledge. Some are derived from customary indigenous law and others from

solutions that are working successfully in other legal fields. There are a range of possible solutions: a “group’s rights” model of intangible property, including copyright (Riley) ; the fixation requirement should not apply to ancestral designs and indigenous art works ( Puri; 1976 Tunis Model Law ); some combination of “inalienability” of indigenous heritage and particular types of sui generis protection. When combined with appropriate domestic regulation (see Recommendation #2), such non-copyright sui generis systems offer a viable and valuable way out of the current international impasse.

## Section 6 – Some Related Issues and Final Observations

**6.1** The Commission also requested research and recommendations (including in the original draft terms) on several other issues; brief comments follow.

### **6.2 Duration (term) of copyright**

For original literary, musical, artistic, and dramatic works, the Berne Convention requires that copyright protection extends for a period of life of the author, plus 50 years (Berne, Art. 7). The Berne Convention is, however, a minimum standards protocol and all signatories are permitted to raise these standards if they so desire.<sup>43</sup> During the 1990s, the world's largest producers of copyright-protected work, the US and the EC, both significantly increased the term of copyright for these classical works to life of the author, plus 70 years, as a result of the 1993 EEC *Directive harmonising the term of protection of copyright and certain related rights* and the 1998 US *Sonny Bono Copyright Term Extension Act*.<sup>44</sup> These escalating standards create new access problems; as of our interviewees commented, the current term is already “too long and being extended; the balance is changing towards permanent intellectual property rights.” (Darch e-mail) For the first time in more than 200 years of its history, no US produced work will enter the US (and hence the global) public domain for a full twenty years. For reasons of space, the wider effects of these recent US and EC term extension measures are not analysed here; the reader is referred to Karjala et al (see bibliography) and the numerous documents on the “Oppose Copyright Extension” website maintained by Professor Karjala of Arizona State University in the US.<sup>45</sup>

The TRIPS agreement did not limit the ability of its signatories to further extend the term of copyright. And although restricting copyright term extension would bring significant benefits to poor nations, it is unrealistic to propose that the UK government begin to lobby its European partners for the reinstatement, as the first step, of a Berne standard (life plus 50 years) across Europe. The evolving life plus 70 years standard (and one can fully expect a call from rights-holders of a life, plus 90 years standard in approximately 2015) does, however, provide a further argument as to why poor and least developed nations require a set of special measures and exemptions with regard to copyright duration. Although most poor and least developed countries continue to follow the Berne (and not the US or EC) standard, the US government has recently been signing bilateral copyright agreements with a number of developing countries which are based on what NGO's and some commentators call a “TRIPS Plus” standard; Jordan, for example, is now required to give protection to business method patents (US-Jordan Free Trade Agreement). Sometimes such extensions of intellectual property protection have followed threats by the US USTR office to invoke Section 301 sanctions. How soon the US or the EC will put more open pressure on least developed countries to increase their term of protection to life, plus 70 years, is uncertain. *It is strongly recommended that least developed countries resist such pressures.* Implementing any new duration directives would not provide an incentive for the production of new works

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<sup>43</sup> Appreciating that poor and least developed countries are primarily users rather than producers/owners of copyrighted works, this unrestricted “freedom” to increase the term of copyright is a trade-distorting mechanism as was noted in Section 1.7.

<sup>44</sup> Certain EC countries, such as Germany, were already operating under a life plus 70 years standard before the EEC Directive came into effect.

<sup>45</sup> This site is available at: <http://www.law.asu.edu/HomePages/Karjala/OpposingCopyrightExtension>

in these countries (see numerous documents on the “Oppose Copyright Extension” website ) and would only further limit access to already scarce educational resources.

### **6.3 Competition policy**

Further enforcement of existing competition/ anti-trust laws is often proposed as one method of curbing monopolistic intellectual property practices and the overprotection of intellectual property more generally (World Bank, 2001). This report has mentioned the limited possibilities that exist for the enforcement of anti-competition policies by least developed countries in the case of copyright protected proprietary software (Section 2). Some greater enforcement possibilities may lie against other copyright industries, but the likelihood of successful prosecutions being commenced and the subsequent realignment of more competitive domestic markets occurring are, at least in the short term, relatively meagre.

### **6.4 A final summing-up**

This section does not attempt to provide an overall conclusion or a “look ahead” for copyright issues in poor and least developed countries; previous sections, including the Section 1 overview, have provided a sufficient conceptual overview and at least a skeletal framework for the various recommendations. But three brief summing up comments are needed.

*First*, a range of quite stunning technological developments in the last decades of the former century, especially computerisation, digitalisation and the Internet, have created *the potential* to dramatically increase access to knowledge in this century within the least developed world and, it should never be forgotten, the creating and sharing of knowledge *among the peoples of these nations*. But the inflexible and one-sided application of copyright laws and the privileging of the interests of rightholders, especially large multinational enterprises, threaten to continue and , indeed reinforce, centuries of domination and marginalisation of these peoples, to keep them in “the slave quarters of the world” as Louise Szente has eloquently put it. (Szente)

*Second*, it is difficult to name a field of law that has been as subjected to “regulatory capture” by powerful interest groups as intellectual property, including copyright. Such groups have captured both the rhetoric of copyright ( for example, without the strictest copyright protection, there would be no incentive to produce works) and the technical expertise necessary to understand and operate within what is admittedly a highly complex area of law and policy. Some of the most critical challenges to the orthodox “accepted wisdom” about the presumptions of copyright have come from global grass roots movements, such as the free software and free online scholarship initiatives. But given, in the first instance, the lack of financial resources and comparatively weak organisation of users, governments have a key role to play in strengthening the public interest in the production and widest possible of information and knowledge. The distinction between the public interest and the concentrated private interests must be kept foremost and this is especially true in the case of least developed nations. In other words, copyright is too important a public policy issue to be kept under the thumb of powerful private interests and the lawyers who speak for them.

*Third*, as Wayne Marshall has written from his experiences in least developing and developing countries in Africa: “Information alone doesn't help people.” ( Appendix 5). Developed countries must avoid proselytising “ techno-optimism” --- the belief that “future



economic prosperity is dependent on the rapid development of national electronic infrastructures”( Darch quoting Roma Harris) --- among least developed countries. There are many greater tasks to undertake in least developed countries.

*It is hoped that this research and report will be helpful to the Commission on Intellectual Property in its important deliberations and recommendations for action on a range of “burning issues” which, though not as dramatic, for example, as the life and death questions of access to pharmaceuticals, need to be placed near the top of any serious global justice agenda.*

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## **Appendix 1 - Commission Study on Intellectual Property Rights, the Internet, and Copyright (edited)**

### **Purpose of the Study**

4. The purpose of this study is to provide advice to the commission on the relationship between intellectual property rights (IPRs), the Internet, and copyright and the associated impacts and issues for poor people in developing and least developed countries. Copyright problems associated with access to and use of both digital and traditional “hard copy” materials will be addressed. In particular, the advice should include a set of clearly argued recommendations related to addressing key issues in the areas of (i) national IP regimes and legislation in developing countries, (ii) the international framework of IP rules and agreements; (iii) the broader policy framework (including competition policy and law) in developing countries relevant to the regulation of IPRs.

### **Scope of work**

5. The study should take the form of a critical review of the existing literature from leading authors and case studies where available. The study must take account of the heterogeneity of developing and least developed countries with particular emphasis being given to the poorest countries and the poorer communities of more advanced developing countries...

### **Specific questions to be addressed**

- What are the main impacts (both positive and negative) on the economic, social and cultural development of poor countries of existing national and international rules on copyright such as the TRIPS Agreement, the Berne Convention, and the WIPO Copyright Treaty ( and, to a lesser extent, the EU Copyright Directive, the US Digital Millennium Copyright Act, etc? )
- Are current international copyright rules and practices a significant constraint on access to educational materials, rapidly advancing information technology (such as computer software) and other information materials needed by poor people and poor countries? What should be done? For example, should greater use of compulsory licensing for such copyrighted materials be encouraged in poor countries? Should there be differential software pricing between rich and poor country markets and/or encouragement of cheaper non-proprietary types of software?
- Is there an issue about whether national legislation and international rules on copyright are unduly weighted towards the proprietors of copyright? Is the length of copyright protection provided too long, particularly given the short shelf life of many computer software products and other information technologies? Might lower and/or more targeted levels of copyright protection help to address the extent of illegal copying, recognising that this practice has some benefit for consumers and local producers at the expense of copyright holders?
- To what extent are poor people and poor countries reaping the economic, social and cultural benefits from copyright protection of their own indigenous materials? What are the main obstacles? Briefly, what more could be done to help?



- Given that access to and use of both computers and the Internet is still relatively limited in a number of poorer countries and, further, that access to and use of traditional “hard copy” materials remains critical for their educational programmes, what barriers do current copyright practices with regard to such materials create for poorer countries in the attainment of their educational goals ? What, as shown by one case study, is the current situation in Sub-Saharan Africa and what changes are suggested to remedy this lack of access?
- Looking ahead, will the use of “rights management systems”, sui generis protection of databases, and techniques such as encryption deny developing countries the prospect of improved access via the Internet – including access for “fair use” – to material necessary for their development, (eg scientific journals, genomic information, meteorological and geophysical data, other educational material)? What should be done?

## **Appendix 2 -Response to questions on copyright and traditional printed materials.**

**D. R. Nicholson, Copyright Services Librarian, University of the Witwatersrand, Johannesburg, South Africa.**

**Do you believe that access to traditional ‘hard copy’ materials remains critical for educational programmes in South Africa?**

South Africa has components of a First World and Third World. In some areas of this country, there is wealth and the infrastructure, facilities and technological applications are highly sophisticated. However, in large sections of the country, particularly in rural parts and informal settlements even in urban areas, there is no running water, electricity and other basic amenities and people have no access to the print media, never mind the digital technology. (At a recent conference a presenter gave the following figures – approximately 7 million South Africans over the age of 14 years are illiterate. Only about 45% of homes have running water and only 58% have access to electricity and the unemployment rate is about 33.88%.) In some rural areas, community centres are set up to provide people with basic information but these are very under-resourced and depend on donations from educational institutions, libraries, etc. The hard-copy/printed version or perhaps photocopied extracts of material received by donation would be the main source of information. Even in more affluent parts of the country, the traditional hard copy/printed version is still the most used form of information. Even in many tertiary institutions which are fortunate to have state-of-the-art technology, not all their students have access to computers at home and have to depend on the library’s facilities for their information. Many of their students are from historically-disadvantaged backgrounds and they very often do not have the funds to purchase textbooks, let alone other educational material. Many of them depend entirely on photocopied course-packs and access to information in their institutions’ libraries. The hard copy is therefore critical to the educational process in South Africa.

**Do you perceive the main impact on the educational development of South Africa of existing national and international rules on copyright such as the TRIPS Agreement, the Berne Convention and the WIPO Copyright Treaty to be positive or negative?**

South Africa is now part of the global village and therefore has to play its part in it. It is signatory to various international conventions, treaties, etc. relating to intellectual property, and endeavours to honour these commitments. However, I believe that some of the conditions of these international agreements do not address the socio-economic and political situation in South Africa, which is a country in transformation. It has to address serious problems created as a result of the policies of the previous government. Education is in crisis and the current government is trying to address the problems but unfortunately copyright legislation often hinders this.

South Africa is categorized as a developing country by WTO, WIPO, IFLA and various other organisations. However, for the purposes of TRIPS, it was categorized as a developed country. Also, when South Africa became a signatory to the Berne Convention, it was under the British Empire and was categorized as a developed country. This means that South Africa is often bound by rules related to developed countries, despite it not being able to compete as a developed country in many areas of global competition. Copyright restrictions do affect the flow of information in South Africa, particularly where material should be more

accessible in the public domain. An example, material on AIDS may be available in various journals but before nursing sisters can use the material in training workshops to teach others about AIDS, etc., copyright permission has to be sought and royalties paid for. If the permission is refused, the material cannot be used and the information is therefore lost to those who need it urgently. In such circumstances, where the information is for the public good in a critical situation (as is the AIDS pandemic in South Africa), surely this material should be available for non-commercial educational purposes, without having to get permission and pay high costs for it. Also, for educational purposes, there are many restrictions because of copyright and I believe (and have been campaigning for some years) that the South African Copyright Act needs to be amended to provide exemptions or provisions for education, basic adult training, literacy programmes, etc. Many educational institutions pay thousands of rands to copyright proprietors annually for copyright royalties and others do not have the resources to do so. This is affecting the flow of information and the type of information being provided to students. Ultimately, this will affect the whole educational system as the divide between the “haves” and the “have-nots” will widen. Rural educational institutions will provide a far inferior product to their students than more affluent urban institutions. Those needing the most assistance in accessing information will be the most hindered as they will only be able to get their information if they pay large sums of money to reproduce it. I do not believe that all copying should be free, but certain exemptions are necessary for educational purposes, especially in countries where education is in crisis.

**What barriers do current copyright practices and laws, both national and international, create for South Africa in the attainment of its educational goals?**

Lack of resources, inferior educational backgrounds and socio-economic factors affect citizens of South Africa from obtaining information and knowledge. Unfortunately restrictions to make copies of copyrighted material and the high cost of royalties to reproduce material is affecting the educational goals of this country. If people cannot afford to buy books and educational material, nor pay for photocopied extracts nor pay copyright royalties, they will not be able to get the information they need and this will restrict them from receiving a reasonable education or even a basic education, in some instances. Provisions need to be made for developing and less developed countries that multiple copying should be allowed for the purposes of education, basic adult training, literacy programmes and other programmes where people need information to acquire a better standard of living and where no commercial gain is derived from such copying. If they are unable to access such information, they will maintain the status of “developing” countries and never progress to the status of “developed” countries.

**Do you believe that national and international rules on copyright are unduly weighted towards the proprietors of copyright?**

Definitely. There is no doubt that the publishers of copyrighted material benefit, more so than even the creators who provide them with the material to publish. In scholarly authorship, academics receive no royalties whatsoever from their research reports and articles published in journals and often receive limited royalties even for monographs, etc. It seems ridiculous that academics firstly have to be sponsored by educational institutions, then sometimes (in scientific journals) have to pay to have their articles published, then the institution has to subscribe to the journal and then the institution has to pay again and again for copyright royalties to reproduce the material written by their own academics. Educational institutions are paying over and over for the same material, which is grossly unfair and

copyright proprietors are benefiting all the way. Also, when copyright proprietors bring out another format, e.g. CD ROM or other electronic versions of sections of or complete journals, institutions have to pay for the print version and the electronic version, as well as copyright when material is used from either format. Considering that most articles published by scholarly journals are produced by educational institutions, there should be a benefit to them (e.g. multiple copying facilities for teaching, etc.) not a financial burden, which is the case. The increase of the copyright protection term to 70 years in some countries, the introduction of more restrictive copyright management systems and the annual increase in copyright fees indicate the determination of copyright proprietors (not the creators/authors) to tighten their control. Recent cases in the USA and Canada relating to freelance writers indicate that authors are not always happy with the control that publishers have over their works and they are rethinking their rights around copyright ownership and copyright management. I personally feel that creators and authors should have more control over their copyright, especially now that digital technology offers so many alternatives. In my experience, authors and some smaller publishers often waive copyright fees for reproduction for non-commercial educational purposes, whereas large international publishing houses charge exorbitant fees for reproduction of the same material.

It was quite obvious that the proposed amendments to the Copyright Regulations and the South African Copyright Act in recent years were heavily biased towards the proprietors of copyright. They would have basically removed most of the exemptions which educational institutions currently have, had the tertiary sector not taken the matter up with Government and had them withdrawn. I was Convenor of both Task Teams which lobbied to Government and succeeded in getting the proposals withdrawn. The Task Teams were disbanded at my request at the end of December 2000 and more permanent intellectual property committees were set up to address copyright issues and to negotiate with other stakeholders to reach a more balanced set of copyright laws. The educational sector has initiated discussions with some stakeholders (e.g. Publishers' Association of South Africa and the Business Software Alliance), to discuss copyright issues and to work together to change the legislation in a more balanced manner.

In meetings already held, it is obvious that it is going to be a very difficult process as the proprietors of copyright insist that South Africa has to be treated as a developed country, as categorized in the TRIPS Agreement, and that we should be following the copyright legislation trends of First World countries (i.e. the more restrictive ones too) when considering changes to our legislation. It is quite obvious that even First World countries are not always happy with copyright laws passed and debate continues on various issues to date. Although some First World countries (e.g. USA) permit multiple copying for certain educational purposes, the copyright proprietors in South Africa do not want this included in the legislation and have suggested that more practical ways should be found to address the need for multiple copying, for example, cheaper licensing.

### **Should South Africa opt out of these international agreements?**

I do not really believe that South Africa can as it has committed itself in writing to them, but if there were the option to opt out of some, I am sure it would be more beneficial in the long run. Alternatively, if these agreements could be reviewed and structured in a better and more practical way to take into account specific circumstances for developing and less-developed countries, it would help a great deal. South Africa has to redress problems like education, social upliftment, unemployment, basic living standards, etc. and anything that would assist

rather than restrict this process would be welcomed. Most international agreements are authored by wealthy First World countries which disregard the specific and often unique conditions which apply in developing or less developed countries. They often impose rules that may work in First World countries but do not work in other countries. It is also interesting to see that it is not only developing countries that experience problems with copyright issues. The debates on copyright issues are very real amongst individuals, educational institutions, libraries, organizations, etc. in the First World countries, which indicates that First World countries are not always happy with the situation and solutions need to be found from time to time. The same problems, and more, are encountered by developing countries and less developed countries and these international treaties do not take this into account at all. International treaties should make special provisions, particularly in the educational field, for less developed and developing countries to allow them to become developed countries – not make so many restrictions that they cannot progress at all. Making copying too restrictive puts a serious burden on less developed countries and in some cases, discourages them from becoming copyright compliant.

**What do you perceive to be the benefit of copyright protection, for the consumer, for the copyright holder (usually the publishers), for the writer, for the developed nations (bearing in mind they hold the majority of these copyrights, and for the least developed/developing countries?)**

Copyright obviously has its place to protect creators and provide an incentive for more creativity but as information becomes more available in different formats, creators will find other ways to create their works and the notion of copyright protection will be dealt with in other ways, e.g. in some cases, contract law will take its place. I have yet to find hard evidence that not having copyright protection stops the creator from creating. Yes, authors who are totally dependent on monies received from their books will obviously suffer if there is no copyright regulation. However, scholarly authors, despite receiving little or no financial gain for their works, continue to do research, as one of their main aims is to get their research findings to the widest audience possible and to increase the knowledge base in their specific fields worldwide. Copyright protection is not their incentive and in fact for many it features quite low on their priority lists. One just has to see the debate on the web about scholarly authors wanting to boycott publishers who do not want to make their works available to the public after a certain period after publication, etc. to realise that the real force pushing for copyright restrictions are the publishers, providers, software giants, finance-driven concerns, etc. not the creators. Obviously the internet and digital technology has created even more reason for the publishers, etc. to worry about their financial returns and they are constantly trying to find more ways in which to restrict information and charge for its use. We must ensure that at all times the principles of freedom of access to information and freedom of expression are upheld (as per IFLA's principles) and that copyright should assist the process - not restrict it. I think the following quotation by Justice Sandra Day O'Connor of the U.S. Supreme Court highlights this very well –

*“The primary objective of copyright is not to reward the labour of authors but to promote the progress of Science and the useful Arts. To this end, copyright assures authors the right to their original expression, but encourages others to build freely upon the ideas and information conveyed by a work. This result is neither unfair nor unfortunate. It is the means by which copyright advances the progress of science and art”.*

### **Should there be differential pricing between the rich and poor country markets?**

There should most definitely be differential pricing with regard to prices for journals, books and other educational material, as well as for electronic databases, licences and copyright royalties. Rich countries have the resources to pay for information and copyright royalties. Poor and developing countries do not have the resources. Also, the value of their currencies against strong First World countries is dismal, making their purchasing power extremely limited. In most developing countries, their resources are very limited and their budgets are dedicated to basic needs such as food, shelter, basic health and socio-economic factors, rather than the access to information. The prices of books and journals are extremely high and additional import duties and taxes exacerbate the problem for developing countries. Most libraries in South Africa are under-resourced and subjected to annual budgetary cuts, which result in cancellation of journal subscriptions on an annual basis. (The situation is generally far worse in the rest of Africa). Libraries have had to enter into consortia arrangements to enable them to obtain up-to-date and relevant information for their educational and other programmes. Some more affluent educational institutions receive additional funding through income-generation programmes, research and other projects with business, donations from business or alumni, etc. and they can afford to offer better facilities and information to their users. However, they often have to provide assistance to less-affluent institutions in the way of consultation, advice, resource-sharing, donation of duplicate books or journals, etc. They also have to provide financial and other assistance to their own and other students who come from historically-disadvantaged backgrounds as these students cannot afford to pay for their books, study fees and other educational needs. Some institutions provide book and fee bursaries to enable the students to study. The students then have to work a set number of hours in the library or other departments in lieu of repaying the funds back to the institutions. For some countries in Africa, copyright is the furthest issue from their minds, as they have far more serious issues and problems to deal with, e.g. poverty, disease, reduced life-expectancy, lack of basic amenities and shelter, high unemployment levels, floods, drought, political unrest, etc.

### **Is the length of copyright protection provided too long?**

In South Africa the copyright protection period has not been extended (although it is desired by copyright proprietors) as has been done in the USA and other countries. However, I personally do not believe that it should be extended – if anything, it should be decreased. Unfortunately in Africa and South Africa, the expected lifespan of adults is decreasing, mainly because of HIV/AIDS, and the population is expected to decrease drastically in the next 5 years. Already people are dying at a much earlier rate. What is the use of extending copyright protection as material will never get into the public domain? The idea of an extended copyright protection period should only apply where life expectancy levels are increasing, not decreasing. I believe that copyright was intended to protect the creators/authors to encourage their creativity but surely it was not intended to protect and provide an income for their grandchildren. Very often, the heirs cannot even be found when permission is sought. Surely, 50 years or even less is adequate time for protection. Surely one level of inheritors (i.e. sons and daughters) is fair enough when apportioning royalties and copyright ownership? The longer the period of copyright protection, the less chance that material will ever get into the public domain.

**Might lower and/or more targeted levels of copyright protection help address the extent of illegal copying of books and materials?**

Yes, I definitely think that this would help. Very often people in South Africa copy material (whether legal or not) as they do not have the resources to pay for it. In many instances, if they are unable to copy the information, they have to do without it, which ultimately affects their educational progress and limits their knowledge. When the international community boycotted South Africa for many years during the Apartheid era, information was very difficult to access or acquire. The acquisition of journals and books was severely restricted and library collections were seriously affected. The only way around this problem was to make copies, whether legal or illegal, in the fight for 'survival' in the information explosion. The boycotts did serious damage to academic freedom, libraries and education as a whole in South Africa. They also encouraged many South Africans to take an attitude of 'non-compliance' as this was the only way that material could be acquired. The boycotts also encouraged many citizens and researchers to find alternative and sometimes very creative ways of doing things in their quest to progress in their areas of expertise. Unfortunately, the culture of non-compliance has not disappeared completely, but efforts are being made to reverse the situation.

If the administrative hassle of getting permission, as well as the costs, were reduced, more people would make the effort. I am sure that some people just go ahead and copy just because it is too difficult to get the permission, it takes too long or it is too expensive.

**To what extent are the people of South Africa reaping the economic, social and cultural benefits from copyright protection of their own indigenous materials, e.g. traditional folklore/knowledge?**

Unfortunately our copyright legislation does not address indigenous materials, although the tertiary sector has listed indigenous knowledge as one of the areas that must be addressed. Currently, the Department of Arts, Culture, Science and Technology are drafting a Policy Document on Indigenous Knowledge Systems and no doubt some form of legislation will be promulgated in the future. It is essential that this area of information and knowledge be protected by law and the interests of indigenous communities be taken care of.

Unfortunately, just from hearing discussions at a workshop on Indigenous Knowledge Systems earlier this year, I gathered that very little protection is provided for indigenous communities in South Africa, regarding folklore, medicinal herbs, music, etc. Large international concerns very often reap the benefits rather than local communities. Some projects with international links are providing some financial assistance to local communities, e.g. Community Development Trusts are being set up to assist them. I do not believe that local communities are really benefiting much at all at this stage and a lot more can be done to provide the infrastructure, legislation, protection and financial resources to improve the situation.

**Do you believe greater use should be made of compulsory licensing for copyrighted materials in your country?**

Although optional blanket-type licensing may assist in some areas, I do not believe that compulsory licensing will help at all. In many instances, institutions, libraries and even individuals do not have the resources to pay the large sums of monies levied by copyright

owners and if licensing were made compulsory, they certainly would not be able to honour the licences. For example, a few years ago, the EU, together with the Department of Education here in South Africa sponsored a project to assist several “historically-disadvantaged” tertiary institutions in getting blanket licences for copyright. About 8 or 9 of these institutions signed the agreements but their main concern is that when the EU subsidies expire in a few years time, they will not have the resources to carry on with the blanket licence agreements. Most of the “historically-advantaged” institutions did not sign the blanket licence and opted to apply for copyright clearances on a transactional basis as the blanket licence costs are far too high. The Rights Organisation in South Africa has been trying to get tertiary institutions to sign a Blanket Licence for some years now but the costs are still the main obstacle and various works (including electronic material) and publishers are excluded which means that transactional licences will still apply in those instances.

With regard to electronic databases, copyright is generally included in the subscription fee and each database has its own copyright conditions about reproductions and use of its material. Some provide facilities for electronic course-packs, reading lists, etc. whilst others do not. There is a concern though that some contracts for electronic material are more restrictive than what is permitted in the copyright legislation.

**what are the main copyright related issues you have to face vis-à-vis your local terrain, and internationally?**

Some of the issues are:-

1. The administrative load in getting copyright clearances is very heavy. Not all institutions have a dedicated person to do this work and the load has to be shared by various staff members. The Rights Organisation also does not provide online facilities to facilitate the process, despite institutions asking them for this.
2. Obtaining permission directly from publishers for works excluded from or not mandated to the Rights Organisation is time-consuming, expensive (payable in foreign currency) and difficult. Sometimes no response is received and the material can therefore not be used in the educational programme.
3. Translating from one language to another causes problems. South Africa has 11 official languages and permission has to be sought for all translations in this regard, even if just for educational purposes.
4. Public domain material such as Government documents are not easily accessible and often we have to reproduce from published versions of the documents which involves having to get copyright clearance and paying high copyright fees.
5. Obtaining permission to transfer print into other formats, e.g. onto CDs, websites, etc. creates endless problems as publishers are reluctant to give permission, alternatively, they charge exorbitant fees which makes it impossible to use the material. This often affects educational programmes and future curriculum planning, as in some cases the technology is available but the material cannot be used. Alternative and not as relevant material then has to be used in its place.
6. Using material from multimedia or online resources for educational and other programmes creates problems as users do not always know where to obtain permission. Often no response is received or strict conditions are applied and high levies are charged for use of the material, which affects the programme and ultimately, education as a whole. Also, using material from these sources to place on intranets or the internet is problematic.



7. Medical lecturers, for example, wishing to use anatomical diagrams from websites or wanting to scan them into other formats, cannot do this without going through the whole process of getting permission, which is often not given or is levied with high copyright costs. In many instances, rural medical personnel do not have access to computers, etc. and their only source of information is programmes prepared and provided by medical institutions and academic teaching hospitals.

8. Currently, our legislation does not allow for conversions from one format to another for people with disabilities (we have this on the priority list for future amendments though) and this obviously creates enormous problems for the users as permission has to be sought first and sometimes the copy cannot be made as publishers require them to buy the publisher's reformatted version at a high cost. It is also very expensive for educational institutions or facilities providing services for people with disabilities to convert material into Braille or onto audiotapes, etc. and as the law stands at present, they have to get permission for everything. There should be exceptions in this regard and also provisions for them to store the converted formats (even if kept under strict control) so that other people with disabilities can make use of the material.

9. Circulating information to interested parties, just in the course of discussion, meetings, teaching, also requires copyright clearance in many cases. This stifles the spread of information amongst experts and interested parties dealing with specific subjects.

10. Pressure from international publishers and threats of blacklisting are regularly made to South Africa as there is unfortunately a lot of piracy taking place, particularly in the music and software industries. However, if more relevant and domestically-drafted copyright legislation was permitted for developing countries, perhaps this problem would be reduced considerably.

11. The length of copyright protection has been increased in many countries, which means that material will probably never be available in the public domain. The use of material is therefore prohibited in many instances, because of the costs involved.

12. Amendment of copyright legislation is very slow and can take some years before they are enacted. Communication between the SA Government and stakeholders needs to be improved. The tertiary sector has made efforts to improve this in recent years.

13. Constant changes in copyright legislation in First World countries obviously affects South Africa, being part of the global village, but may not always be relevant to our situation and how we seek to upgrade our copyright legislation. This makes it very difficult to decide on what is right for our country. The copyright proprietors in South Africa want our copyright legislation to be very similar to other First World countries but their legislation is not always applicable to the South African situation. What may work in a developed country may be (and is often) totally irrelevant in a developing country. Ideally, a set of copyright laws for First World countries and another set for Developing and Less-developed countries would better meet the needs of the relevant countries. The current situation of South Africa being categorized as a developed country for the purposes of TRIPS would have to be reviewed in that case.

14. Very often our local publishing industry complains that non-compliance of copyright, particularly in the educational sector, is damaging its industry and local authors. Yes, there are infringements and they are being affected. However, the majority of copyright royalties paid by South African educational institutions is destined for foreign publishers. About 60-70% (if not more) of the materials used by educational institutions are from foreign journals and this results in a huge outflow of cash from South Africa to foreign publishers or rights organizations on a regular basis. The local authors/creators are not the beneficiaries of these royalties. South Africa represents a very small percentage of the international publishers'

global market and I feel more concessions could be made by them to assist education and literacy programmes in South Africa, rather than restrict them.

15. Copyright fees for electronic databases are usually incorporated in the subscription fee. However, each database has its own contract and conditions as to what and what cannot be copied, which makes it difficult for users and library staff. If all databases standardized their policies on copyright and permitted certain reproductions for non-commercial educational purposes, this would go a long way to assisting users in accessing and obtaining information.

16. One concern I have about copyright management systems is whether the privacy of users is protected.

17. The problem of institutions having to pay over and over again for research material and then copyright fees (as highlighted previously in this document) needs to be addressed.

18. Most tertiary institutions in South Africa are publishers, creators and consumers of copyright material and they need to find a balance in the legislation, where their interests can be protected at all three levels, within the context of the South African domestic situation.

## **Appendix 3- Proprietary Software and Less-Developed Countries :The Argentine Case**

**Federico Heinz (CTO, Fundación Vía Libre, Argentina) and Oscar Heinz(Fundación Vía Libre)**

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### **1. Introduction**

The way proprietary software is brought to market has deep and perverse consequences regarding the chances of growth for less developed countries. Current patent and copyright law in most countries, developed or not, allow authors to license the right of use of commercial software under very restrictive terms, which in effect prevent users and potential competitors from accessing the source code of the software they are using. This limitations produce various degrees of damage all over the world (witness the Microsoft antitrust trial), but for poor countries the consequences are devastating, as proprietary software effectively acts as an insurmountable barrier to entry into the market, which gives them little chance of accessing the benefits of the IT revolution. The virtual monopoly that big corporations have established in the market has created very difficult conditions for poor countries to overcome the costs and serious setbacks that are inherent to proprietary software, and from developing any serious software industry beyond the export of labour. The simplest solution for this problem is the widespread adoption of free software. We hope the data from this document will shed some light on these issues.

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### **2. The cost of proprietary software licenses**

Besides the problems produced by the fact that proprietary systems and programs are "closed" and only allow the user to perform the functions included in the license, which limits severely their adaptation to every users needs, there is the problem of its price. Individual users and small companies find it very difficult to afford proper licensing of proprietary software. For the sake of illustration, we have listed some examples of prices in Argentina in Table 1, based in information from local dealers:

**Table 1. Current prices of Microsoft products in Argentina**

Office 2000 Pro	USD 600 + VAT[a]
Windows 2000 Server CLT	USD 1.100 + VAT
Windows 2000 Advanced Server	USD 3.200 +VAT
Windows 2000 Professional	USD 320 + VAT
Notes: a. VAT in Argentina is 21%	

Those prices may be invalid, though, because Microsoft is trying to push Windows XP as hard as they can, and so it's nearly impossible to get anything from the 2000 series anymore. Besides, they are also pushing their new licensing scheme that requires periodic renewals, which further muddles the issue of pricing, since it's not clear exactly which future rights you are purchasing. The consequences of this licensing scheme in our market cannot be assessed yet, but it is likely to raise the cost for already overburdened users. Anyway, it seems safe to say that the software cost for a workstation running Microsoft Office is roughly the same as the price of the computer itself. We don't have data on other countries running prices, but the guess is that Brazil and Uruguay have similar prices, while Chile, Bolivia and Paraguay may have slightly lower prices.

Of course, citizens of poor countries can ill afford high prices in hardware and software; and this is one of the main reasons development in this area has been so slow. Even though the barriers to access are many, and it's hard to tell which is more important (in some areas the main problem may even be the lack of electric power, for instance), software licensing costs are also one of the factors competing for the scarce resources available to potential users. The fact that this doesn't measurably conspire against the spread of computer use is easily explained: most people and companies who can't afford the licences just copy the software and live with the risk of being caught.

Beyond domestic and small businesses users, software licensing costs and, even more often, support, maintenance and upgrade costs are often-cited reasons for the lack of adoption of computer systems in some conspicuous areas (e.g. local governments and government services, such as health care in the poorest provinces). The growth-punishing per-seat licenses have encouraged even large companies, and even government itself, to often disregard licensing issues and install irregular software copies in their computers.

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### **3. Marketing schemes meant to hook customers to a particular software company**

A common marketing practice for many proprietary software vendors is to deep-discount their prices for one-time sales. This encourages the customer to acquire the licenses, which in turn helps establish widespread use of their software. Once the customer is using this particular piece of software, prices revert to normal for further purchases, which means any new compatible products he may need to expand his business have now a much higher price, and by that time he has no other choice than to purchase from the same company, because it's the only one that can provide compatibility with his installed base. Another common technique used by software companies to covertly raise their prices involves changing the licensing terms between releases, e.g. from free runtime to a per-processor or per-user basis. A particularly insidious practice which fits the same pattern can be observed in software vendor's deliberate long-time tolerance of licensing breaches: for years, Microsoft and others have done nothing about "illegal copies" of their products, even in cases when it would have been very easy to control, such as in the public administration and large companies. This

effectively reduced the acquisition price of their products to near zero, since there was no fear of consequences. This resulted in a very convenient outcome for the software vendors, since it increased the "network value" of their products at very little expense to them. But recently they have started an aggressive campaign of prosecution, warning users in extremely harsh terms to either pay the licenses for the software in use, or face jail. Now caught in the network effect, users don't have much of a choice. Of course, software companies like to expose themselves as the victims in this issue, but in fact they have promoted the use of unauthorized copies as an effective marketing tool to put their software inside prospective customers' computers.

It is also common for proprietary software companies to "give away" software to government agencies such as the Federal Public Revenue Administration and diverse ministries. This further contributes to increase the network value of their products, and creates perverse dependencies. For instance, argentine taxpayers must submit their forms electronically in order to comply with tax regulations. They must do so through the use of a program provided by the Revenue Administration, which is free of charge, but runs only on Windows 95 or higher. In other words: tax legislation mandates that taxpayers must purchase a Microsoft license.

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#### **4. Contributions to software illiteracy**

Proprietary software companies like to present themselves as philanthropic institutions, sustaining educational programs to increase software literacy. The knowledge content of those programs, however, doesn't go any further than providing skills in the use of their proprietary software, and contributes little if anything to the comprehension of the general mechanisms that come into play. They don't teach the user how to use a word processor, for instance, but how to use a very specific, proprietary word processing program. Far from contributing to software literacy, these educational programs are marketing tools designed to produce users that are dependent on a particular program. People who attend these courses are typically unaware even of the existence of alternative solutions, and completely at a loss when confronted with a different program to solve the same need.

Software companies usually promote and fund these courses through their dealers/associates which, to compound the problem, usually strike educational deals with the government. There are plenty of government-sponsored training programs, for instance, on the use of Microsoft products. They are often backed by local companies and, very frequently, delivered through the graphic media such as newspapers. In particular, there are multiple courses on how to use Windows, Word, Excel and Explorer. There is no similar government sponsorship for courses teaching alternative technologies at all.

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#### **5. Proprietary software license restrictions provoke and increase the "brain drain" in less-developed countries**

Restricted-use license means, above all, that nobody but the copyright holder is allowed to effectively support the product. Sure, nearly all proprietary software companies offer certified training courses, but these are limited to symptom removal: nothing more than a series of recipes on how to get the system back up and running when it crashes. But no information is available, at any cost, on how to fix the program so that it will not crash in the first place, or on how to change the system's behaviour to match the user's needs. As a consequence of widespread use of proprietary software developed abroad, then, the local market for information technology professionals is limited to openings for "computer janitor".

For ambitious programmers, it takes a special kind of will to stay in Argentina when software development is done mostly abroad by companies that make a point of keeping everybody

out of the loop. The only advanced software projects in the country are found either in universities or in the free software arena, so it's either one of those, or get a job installing Windows. The main reason Free software seems to be gaining momentum over here is because it makes possible for local programmers to actually become part of the development process, and enables them to provide true support to the user that goes beyond pressing the reset button and reinstalling components at random.

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## **6. Proprietary data formats as a barrier to access to information**

Argentine public administration is full of examples where services are offered to the citizen only through the use of proprietary technology. Applications for scholarships in research institutions must be submitted in Word format. Several government agencies provide information to the public exclusively in Word and Excel formats.

Although we are not directly aware of cases in which aid offered or provided by international financial institutions has been tied with the adoption of a certain brand of software, much of the internal documents of the agencies and most of the documents exchanged between the agencies and the government are encoded in proprietary formats, such as Word or Excel.

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## **7. Software license enforcement by terror**

As we noted earlier, some proprietary software companies have recently started campaigns to enforce restricted-use software licensing terms. This is as should be, but the means they have been using are more appropriate to the organized mob than a legitimate business. "Software Legal", which for all purposes can be viewed as the local chapter of the Business Software Alliance, has been routinely raiding and prosecuting companies (and sometimes the public administration itself) for unauthorized using and copying. They do a lot of press work, orchestrated to create fear. One of their campaigns actually implied that the real danger in using unlicensed software is that you could wind up being raped [sic] in jail. Their [web page](#) currently has an ad at the top that reads "You have 45 days to clear up the software situation in your company. Time enough to talk to your software dealer. After that, anything you say can be used against you in court". Whenever they strike a successful raid against a well-known company, it is very likely that the following days newspapers carry the news talking of piracy related to that company, even when it is a case of minor breaches of the licencing terms.

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## **8. How developed countries can help**

First World governments have shown a will to help less developed countries, and several schemes have been put into practise, with mixed results. It is safe to say that one of the less costly and most effective ways of providing real help is to promote free software as a means of liberating the intellectual power of thousands of IT professionals and programmers who can help build the information tools needed for catch-up, development and innovation in all areas, made easily and freely available for all. UNDP used to have a project for 'sustainable development networks' encouraging the widespread use of free software in less developed countries, but we have no recent news on how that project has evolved. The last status report on [their website](#) is dated February 2001. There is plenty that governments can do to help the spreading of free software and of free software knowledge:

a. Government use of free software already does a great deal of good: besides all the usual benefits the free software community derives from every other user's experience, government use lends it credibility and calls attention to it. Using free software does a great deal of good

to the governments themselves. There are plenty of reasons why public information should be handled exclusively by free software, among them:

b.

I. In order to fulfil its functions, the State must store and deal with information concerning the citizens. The relationship between the State and the individual depends on the privacy and integrity of these data, which must be subsequently protected against three specific risks:

i. Leakage: the confidential data must be dealt with in such a way that access to them is only granted to authorized persons or institutions.

ii. Non-availability: the data must be stored in such a way that access to authorized persons or institutions is secured during the whole useful life-span of the data.

iii. Tampering: the ability to modify the data must be restricted, once again, to the authorized persons or institutions.

If any of these risks is not adequately safeguarded and breaches happen, the State as well as the individual can suffer severe consequences. When the data are dealt with through electronic means, the vulnerability to these risks resides in the software used to process them. Contrary to proprietary software, only free software can grant protection against these three risks, because its source code is openly available to the user, and thus it is possible to determine whether its safeguards are trustworthy.

II. Free software allows inspection of the source code of the programs, in fact permitting the inspection of its mechanisms and verifying its functionality. It makes possible to determine, for instance, if there are any back doors through which information could be leaked. Cases of such intentional security holes hidden in proprietary code are common, and very well documented.

III. Most important, the accessibility to the data stored by the state can only be granted when one knows the source code of the storing programs. Proprietary software does not provide this information, making it impossible to secure access to the data any time, for instance, when the company disappears or simply discontinues a product. For more reasons (in Spanish) why it is so important that the state should use free software, please see the web site of Fundación Vía Libre.

b. Granting research funds to free software developers for public interest projects. This encourages development of free software, which broadens the range of problems that can be solved with it, and increases acceptance of free software by the users. Following these lines, the governments of the U.S.A., Germany and France are currently funding free software development.

c. Granting research funds to free software developers from less developed countries for this kind of projects. This has the added benefit that it helps jump-start or establish software development in these countries, providing interesting and rewarding projects for people to work on in their own communities.

d. Granting educational funds for both technical training and end-user training. People have come to actually expect their computers to be vulnerable to viruses, crash twice a day, and generally amuse them with erratic behaviour. They don't even know that computers can and should be reliable tools.

e. Granting appropriate funding to international 'software clearing houses' (such as sourceforge) at governmental level, so that developed and less developed countries can exchange applications and expertise.

f. Donations of used equipment. A 486 PC may be obsolete in Europe or the US (especially if you want to use proprietary software on it). But properly configured, and equipped with the appropriate free software, it could make an excellent workstation or Internet access device for

schools in poor countries. Such donations could be channelled through NGOs which, in turn, can add localized software components based on free software.

g. Fostering a policy for banning monopolistic practices in the software industry. EU representatives in multilateral organizations (World Bank, IMF, IABD, WHO, ILO, etc.) should encourage new acquisition procedures for projects they finance, so that if a certain corporation is found to have incurred in monopolistic practices in any member country, it won't be able to offer its products in international bidding.

h. Limiting the time span of copyright for software programs to reasonable lengths, as the current span is orders of magnitude longer than any program's lifetime.

i. Avoid legislating in favour of software patents or, better yet, legislate against them. Further spread of the software patent insanity would be extremely harmful for free software development.

j. Stay away from any kind of legislation that implies blanket prohibitions against the development of certain kinds of programs, such as the US's Digital Millennium Copyright Act. Beyond carrying with them very unfavorable consequences for free software development, this kind of law can have extremely adverse consequences for society as a whole, as information processing becomes more socially relevant by the minute.



## **Appendix 4 – International Telecommunications Union Report: Internet Indicators (October 2001)**

**Insert attached PDF file here.**

## Appendix 5 - Algorithms in Africa

### Algorithms in Africa

By Wayne Marshall, Guinea ([guinix@yahoo.com](mailto:guinix@yahoo.com))

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18 May 2001

*Maybe the rush to market for spreading internet access across the globe is not in anyone's best interest--a report from the front*

Eleven years ago I installed a computer system at a vocational training and development center in Tutume, Botswana. Tutume is a rural village on the northeastern edge of the Kgalagadi desert in southern Africa. The computer was intended to help this organization, known as Tutume Brigades, catch up on its bookkeeping for several business units crucial to the local economy. Businesses included a brick-making unit, carpentry workshop, auto repair garage, sorghum mill, school uniform production unit, tractor hire and vegetable garden. For the local village and the surrounding catchment area, the Brigades were literally the only game in the bush for commodities, trade skills, training and employment opportunities.

When I arrived in Tutume, I was a pure novice in the field of foreign assistance. I was also a mid-career financial professional, with several years of experience in nonprofit and health-care management in the United States. And like most aid workers new on the ground in Africa, I knew what was best. In my assessment of the center, I believed a computer was essential to get a handle on the Brigades' financial position, which otherwise consisted of eight separate sets of badly maintained manual ledgers, over nine months in arrears. Except for the bank statements of eight separate checking accounts (and even the bank statements proved unreliable), we had no way of knowing if the center had any money. Every time we had to make payroll or buy another truckload of cement, we were in the heart of fiscal darkness.

Over the course of the next several months, I proceeded to computerize the records and train local staff in basic operation of the system. By the end of the first year, the financial records of the center were timely and accurate. Moreover, other staff members were beginning to use the computer for tasks such as word processing and spreadsheets. Many of these employees had never even used a typewriter before.

If I were to tell no more of this story and fade here to one of the glorious Kgalagadi sunsets, this might be called a win. Although set in the predawn (and pre-Linux) history of the Internet era, today this would be described as a small success story of 'bridging the digital divide' in Africa--like I was a regular Albert Schweitzer of the Information Age or something.

But the truth is not so simple, and the issues of foreign assistance are not so trivial. The fact is, I am not proud of this story. Because as my time in Tutume went on, I realized I had blundered badly, to the point of putting the Brigades in serious jeopardy. I began to ask myself such basic questions as: What would happen to the computer after I left? Was the staff fully capable of operating the system independently? Would backups be maintained and performed rigorously? Were skills sufficient to troubleshoot problems and reinstall the system if necessary? If the equipment failed or was stolen, could the center afford to replace

it? And what would the center do when the staff I had trained for so long were lured away by more lucrative jobs in the big city?

These questions all led to the same answer: the Brigades would be left in even worse shape than I found them. Rather than gaining empowerment, independence and enablement, they would more than likely be left powerless, dependent and possibly ruined. And all because of my own cultural myopia, despite my good intentions.

It is axiomatic in the field of foreign assistance that the aid program will take credit for the successes, while failures are blamed on the host country. The psychology of failure can then be even more severe and long-lasting than the loss of the project. While I was working in Tutume, for example, a friend of mine was working in the village of Lobatse in southern Botswana. Seven years earlier, an aid organization from northern Europe had decided a wool sweater factory would be just the ticket for the economic development of the village. Of course, northern Europeans are fond of nice wool sweaters and very likely have great need for them, particularly in the colder climes of northern Europe. The market for wool sweaters is less extensive in the sweltering and sparsely populated Kgalagadi desert, however. After seven years of subsidizing the losses of the operation, the aid organization finally decided it was never going to be sustainable, and they pulled the plug on the effort. My friend's unenviable assignment was to put all the women out of work, sell the facility and liquidate the equipment. It was hard for many of the women not to feel that the fault was somehow their own.

Fortunately for Brigades in Tutume, such failure was averted. As the story there continues, once I realized the risks, I spent the next several months converting the accounting system back to manual ledgers, hiring and training additional staff in bookkeeping procedures and enabling them to use the computer primarily as a support system, rather than as the central financial database.

But what do these stories from Tutume and Lobatse have to do with Linux and emerging markets? The rest of this article will consider that question.

### **The Digital Divide**

Nine years have passed since I left Botswana. To put the times into perspective, the first thing I bought when I got back to the US was a fax modem, the cheapest, fastest solution to stay connected with the contacts I had made abroad. My modem then was 2,400 baud. I tried out CompuServe and decided on Delphi, and the buzz was just starting about something called PPP.

During the next several years I was in and out of Africa, became a Linux user in 1995, began installing Linux in nonprofit organizations in 1997, spent a year and Y2K transition in the former soviet state of Ukraine and came to the West African country of Guinea in May 2000. At some point during this period the digital divide was invented.

Actually, the digital divide seems to have its origins in a 1995 report from the US Department of Commerce, whose National Telecommunications and Information Administration (NITA) released the first paper in a series titled 'Falling through the Net'. This report analyzed telecommunication access by geographic and demographic patterns throughout the United

States. One of the conclusions of the report was the gap between the 'information rich' and the 'information poor' had widened.

In the later years of the Clinton administration, the digital divide broadened beyond US borders to encompass the globe. The issue gained considerable publicity after a G8 economic summit meeting in 1999, where the most powerful nations on earth decided that the growing gap in information technology was one of the most serious problems facing development in the Third World.

Now, as I write this, bridging the digital divide has become one of the hottest trends in foreign assistance, and many aid organizations and corporate philanthropists have found publicity for their efforts. Simplistically, it seems, the gap in information technology has now come to be identified with access to the Internet. Thus, we have such programs as the USAID-funded Leland Initiative, designed to bring internet access to Africa; the Peace Corps announcing an information technology initiative in partnership with AOL; and a recently formed organization called Geekcorps sending its second group of volunteers on three-month stints designing web sites in Accra, the capital of Ghana in West Africa (see Linux Journal, April 2001, for more on the Geekcorps). Naturally, the high-profile publicity given this issue has created an opportunity for many international aid organizations to develop projects and funding appeals for serving the digitally needy.

### **The New Tech Testament**

Delivering the miracle of the Internet is the new zeal of the high-tech missionary. In what seems to be a rush to market--bringing the Internet to the developing world--sometimes projects are announced with only naive regard to the technical issues and without full consideration of whether such projects are viable, appropriate, relevant and sustainable. Thus, one hears of a women's cooperative in Central America marketing their handcrafts over the Web; advocates describe the potential of 'telemedicine' for delivering virtual health care to isolated areas; and the US State Department Global Technology Corps proclaims, 'We have seen farmers in Mexico using [the Internet] to check weather conditions and crop prices.'

Where once Norwegians may have seen wool sweaters, the tech visionary now sees web browsers.

At the extreme, the new economy proselyte promotes the Internet as the solution for everything from education and health care to pollution, inequality and world peace. As though everyone who has access will be able to browse their way to nirvana, as though the path to heaven is paved with bandwidth. The satellite dish is the new icon of the digital evangelist, replacing the holy cross.

One of the implicit beliefs of this testament is that information, in and of itself, is sufficient to promote economy, remedy problems and narrow inequities. A corollary implication, the message from one side of the divide to the other, is that we have information and you don't, that our information is good and yours is useless. This is the lesson CNN preaches to its international audience when it tells us, 'The human without information is nothing.'

It should be clear that in this form, divide rhetoric is simply new raiment for the familiar old taxonomies of prejudice that have long sought to divide the world between believers and

heathens, the enlightened and the savage. From a historical perspective, rather than helping, these kinds of belief systems have generally been devastating to their targets.

More importantly, the belief in the sufficiency of information and information technology is simply wrong. Information alone doesn't help people. If only this were true, doctors would be made from medical textbooks and entrepreneurs would be born from accounting manuals.

In fact, the developing world is littered with unused X-ray equipment, broken-down tractors and empty schoolrooms contributed over the years by well-intentioned and simpleminded donors. These resources are made useless not from missing user manuals or lack of web access, but by the lack of trained technicians, mechanics and teachers.

In short, what empowers people are skills.

Even in the US, this kind of awareness is emerging. In 'How Does the Empty Glass Fill? A Modern Philosophy of the Digital Divide' (Educause Review, Nov/Dec 2000), Solveig Singleton and Lucas Mast write: 'From the standpoint of higher education, students who leave high school without exposure to digital learning tools such as the Internet will prove a much less serious problem than students who leave high school with inadequate reading or math skills.'

And the leading journal of free-market capitalism, the Economist, recently observed:

The poor are not shunning the Internet because they cannot afford it: the problem is that they lack the skills to exploit it effectively. So it is difficult to see how connecting the poor to the Internet will improve their finances. It would make more sense to aim for universal literacy than universal Internet access.

It may be that, with the recent outbreak of dot-com bankruptcy and declines in the stock market, the tenets of the digital religion could be losing their currency. At a time when the mega-billion, IPO-funded ebiz stars like Amazon and Yahoo are having a tough go across the US and Europe, it's hard not to wonder how the promises of e-commerce could possibly prove viable and sustainable elsewhere, particularly in places where there aren't even good banking and credit systems. And for someone like me who has lived several years of the past decade in both rural and urban parts of the developing world--where most of the population still cook with firewood and carry water in buckets--the practical value of focusing foreign assistance on IT projects would seem negligible, if not ludicrous entirely. Given the more serious fundamental issues facing developing nations--health care (AIDS, TB and malaria), nutrition, sanitation, education, poverty, pollution and political corruption--providing the means to surf the Web should probably fall fairly low on any reasonable scale of human priorities.

So is there any way to make a difference, a real difference that improves people's lives? Is there any role for Linux and open-source advocacy in emerging markets? Are there ways of using technology for solving human problems in places like Africa, without trying to sell wool sweaters in the desert? I wouldn't be writing this article if there weren't.

### **Algorithms in Africa**

When it comes to Africa, the so-called digital divide is just a divide; there isn't anything especially digital about it. The divide is geographic, because Africa is a long way away, and cultural, because the traditions and histories of Africans developed independently from those

of Europeans and Americans. Almost incidentally the divide is economic, from the standpoint of cash resources and differing perceptions of wealth, though the natural resources of this continent are vast. The divide ends up being mostly one of ignorance, and this gap is at its widest in America.

Americans in general know very little about Africa, and what little they do know or think they know is usually prejudiced and fallacious. If I were to know the state of Florida only from news reports, I would think it was a large mobile-home park of fat pink people constantly flattened by hurricanes. Similarly, most Americans probably only know Africa as a disaster zone of epidemic, starvation and genocide. The principal media image Americans hold of African assistance is usually the one of the brave young (white) woman, a nurse or volunteer, holding a helpless black infant, center stage among a group of grateful and admiring Africans in the background.

Of course Africa is nothing like this image at all, and the first step in crossing the divide here is to banish these offensive stereotypes and learn all one can about what Africa is really like. It would be a disservice to the many peoples of the continent to generalize and describe the essence of Africa as though it were a single place. But I would just like to say: Africa is such a joy! Whenever I am in the streets of Conakry or an upcountry village, I am overwhelmed with the pure bandwidth of humanity, of color and vitality and life. So much more than can ever be expressed on even your largest CRT, with even the fastest DSL connection; Africa is the ultimate realization of broadband in culture and diversity, natural and human content. Maybe a virtual, flat-screened reality over the Internet is meaningful in the pitifully dreary cubicle of the US office worker, but Africa is all about face time in real time.

Open-source advocates can be sure that Africans get community; Africans get bazaar. These are concepts intrinsic to the cultures and traditions throughout the continent, where African societies had mastered networking long before the invention of the RJ45 jack. Africans have historically been quite receptive, often at their ultimate peril, to ideas and innovations flowing between cultures and brought in by outsiders. And in general Africa has been early and enthusiastic about adopting new communication technologies, particularly when they are practical and affordable. So in Botswana I was astonished at the number of fax machines per capita ten years ago, and now find a thriving trade in cell phones, both legitimate and black market, in Guinea. On a recent visit to a mosque in the interior of the country, a wizened old muezzin took me up into the minaret specifically to show me their solar-powered amplifier and loudspeaker system, used to call the village to prayers.

As one learns to develop an appreciation of what Africa is really like, it will then help if one can develop a sensitivity to the pitfalls of foreign aid and the havoc such programs have brought to this continent. The subject of other narrations, it is sufficient to observe here that the official assistance programs of foreign governments are usually a foul brew of political hegemony, economic imperialism, cultural ethnocentrism, personal avarice and, too rarely, genuine altruism. Too often the implementation of foreign aid is all about developing market share and spheres of influence, instead of improving lives. Proponents of foreign assistance may even argue that these are synonymous, as though markets for American soft drinks, snack foods and beauty products result in happiness and prosperity for the consumer. The sad fact is, whether intentional or merely consequential, foreign assistance has often had devastating effects on communities, local markets, traditional cultures and environmental conditions throughout Africa.

Finally, it is helpful to bring an honest perspective of one's own history and culture into focus. For example, the United States represents less than 6% of the world's total population and has existed for less than a blink of an eye in the span of all human history. So, what makes us think we've got it right? What evidence is there to suggest this brief record is proof that our way of life and cultural adaptations will be viable in the long run?

For example, it may be surprising to learn that, due to the predations of infectious illness, urban population levels were not even sustainable until about 100 years ago and required steady migration from rural areas. And it was less than 90 years ago, Gina Kolata writes in *Flu*, when *Ladies Home Journal* proudly declared that the parlor, where the dead had been laid out for viewing, was now to be called the living room, a room for the living, not the dead.'

Shortly after this proclamation, a global flu of epidemic proportion--the origin of which is still not understood--killed 1.5 million Americans and 40 million worldwide. This was not in the murky history of the Dark Ages; this was 1918. Today, with the modern plague of HIV/AIDS, the re-emergence of tuberculosis and new mysteries like the relationship of human CJD to Mad Cow Disease, will our mastery of medicine prove all that enduring, even for the world's most fortunate few?

In any case, those who would help others should at least try to learn from past failures and have the humility to ask if the modern model of urbanization, congestion, resource utilization and environmental depletion are sustainable, even desirable, let alone worthy of export to others in the world.

Then we may be able to accept that the Internet may not be the solution to all problems of humankind and have the patience to realize that working through the major challenges in Africa will take time and understanding measured in generations. Now it becomes clear that Linux and open-source developers are helping Africa best by what they have been doing already. People who are programming and installing the world-class, free software at the soul of internet technology are helping others around the world in profound and important ways, no matter what license they are using. GNU and open-source software are the perfect fit for the emerging nations of Africa--as for the rest of the world--not only for the superior technical quality of these systems, but for the values embodied in their development.

The mere existence of Linux and open-source systems give people the chance to use these powerful technologies for low-cost, grassroots level applications, an opportunity not possible just ten years ago. The pages of this magazine have described many of these self-directed success stories, everywhere from Mexico to Pakistan, where Linux solutions enabled people to make the difference. Such examples are to be found among African communities as well, from South Africa to Kenya to Nigeria. And Africans like Katim Touray are using Linux servers to connect other Africans in dialogue around the world.

Beyond the software itself, though, it is the culture of Linux and Open Source communities that provides the model for meaningful outcomes. This is the culture of sharing and empowerment, of the thousands of Linux users' groups throughout the world, of the Linux Documentation Project and the general willingness of one user to selflessly help another. Participating as a Linux user is all about developing crucial skills and passing them on. Often users' groups hold regular installation clinics, giving new users personal, one-on-one support from an enthusiastic peer. And these users' groups are often active in other community

projects, such as helping schools install servers and network connectivity, while transferring the skills necessary to maintain them. Each of these connections is essentially more human than technical, linking people together more than their machines, and can lead anywhere. Each of these personal connections sows the seeds of others, and the spread of the Linux bloom is now reaching to every corner of the earth. For example, even though the use of internet technology in Guinea is nascent, Linux certainly preceded my own arrival here. One finds Linux books in French in bookstores and Guineans eager to learn more about this 'true' operating system.

And there are other instances of Linux and open source helping to solve problems in Africa. One of the most inspiring and hopeful to me involves no computers at all.

### **Vim in Uganda**

The emergence and spread of AIDS has been devastating to sub-Saharan Africa. Sure, you are probably tired of hearing about it. For one thing, it is so hard to come to grips with the scale of the problem. In the short time since I left Botswana--when AIDS was just beginning to emerge as an issue there--life expectancy has plummeted, from nearly 60 years to barely 40. It is now estimated that as many as 40% of the adults in Zimbabwe are HIV positive. This has been a debilitating setback to the emerging countries of the region, where public health efforts had previously been making remarkable gains.

The epicenter of AIDS in Africa has been Uganda, which was hit first and perhaps hardest. The government of Uganda is considered to have mounted an effective and ongoing public health campaign for its people, and there is hope that the incidence of HIV/AIDS is decreasing. Nevertheless, the consequences of the disease have been severe. One of the biggest problems is the large numbers of children left without parents. In a society where children are traditionally treasured and raised with the supportive assistance of extended families, there are simply too few adults left to care for growing numbers of orphans.

Bram Moolenaar is the author of Vim, one of the most popular open-source text editors, with ports available for just about any platform in existence. Bram had already started Vim when he first went to Uganda in 1994, volunteering to work as a water and sanitation engineer for the Kibaale Children's Centre (KCC).

The center, located in a rural village of southern Uganda, provides food, medical care and education to about 600 children, most of whom have been orphaned by AIDS. The conditions are austere: one book for ten children, a tiny blackboard and a roof with holes.

Bram found that his skills could help at Kibaale, his help made a difference. After a year spent working with the Centre, he wanted to find ways he could continue helping the project while also letting other people know of its existence.

That's when Bram hit on the idea of 'charityware' for Vim. The license for Vim says simply: 'Vim is Charityware. You can use and copy it as much as you like, but you are encouraged to make a donation to orphans in Uganda. Please read the file doc/uganda.txt for details.'

While using Vim, type `:help uganda` to get the complete text of the license and a description of the Kibaale Children's Centre.



Beyond this, though, Bram is fairly modest about the project. Although he asks for copies of CD distributions that include Vim, he doesn't appeal to distribution vendors directly for any additional financial support. Bram prefers to remain low key rather than risk annoying people and turning them away from supporting the Uganda project.

Knowing that Linux distributions in use are now in the billions, one may wonder how successful the charityware license has been as a fund-raising method for the Centre. Vim users are asked to make contributions to the International Child Care Fund that Bram and his colleagues have set up specifically to support the KCC project, and the ICCF web site provides annual financial reports. For 1999, donation income totaled about \$7,000 US (17,800 Dutch Guilders), up from about \$3,500 US in 1998.

These figures may seem rather underwhelming and suggest that the conscience of open-source users and vendors is not as evolved as one may like to think. But the bottom line for Bram is, even at such a modest level, these contributions make a huge difference in what the KCC can accomplish. The funds raised by Vim donors are used to keep the Centre running, maintain and improve the facilities and recently purchased rainwater tanks so that more people have access to clean water.

Bram continues his personal involvement with Kibaale to this day, having made return trips in 1996, 1998 and 2000. This experience gives Bram a thorough grounding in the realities of life in Africa, as well as an understanding of the means of effecting meaningful change. When I asked for his opinions about the digital divide, he said, 'I'm afraid I don't know what the digital divide is. Is it about bringing computer-related stuff to Third World countries? Well, the area around Kibaale first needs a good water supply and a phone.'

When asked if he could give any suggestions to those interested in projects supportive of African information technology, Bram replied, 'The best suggestion I can make is to work in small groups. A hundred small projects bring more benefit than one project that's a hundred times bigger. The strategy and planning done by people in head offices is a waste of time and money.' The message here is that the strength of any bridge depends upon its integrity.

In the end, Bram is doing what the Open Source movement has been all about from the beginning: working with personal conviction, making a difference where one can and sharing the work one loves with others. These are the ideals of a world seeking connections, the values that can link Linux and the Internet with an orphanage in Uganda. The human connections of these efforts empower people, improve lives and build the solid bridges of understanding among diverse global communities, digital and otherwise.

*Wayne Marshall is a UNIX programmer and technical consultant living in Guinea*