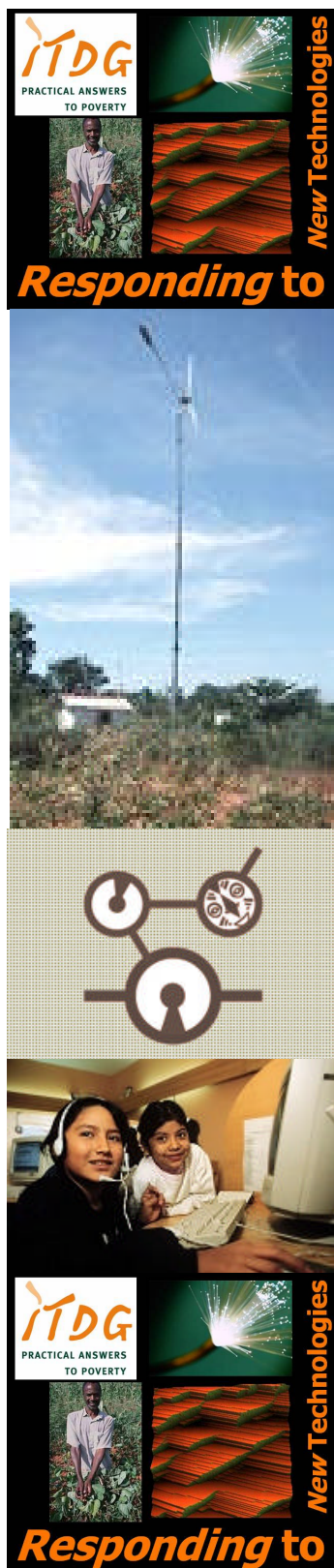




The Intermediate Technology of the Information Age?

An Assessment of the Implications
of Open Source (Free) Software for
Development

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1. Executive Summary

This paper reviews the role that open source or free software (here referred to as OSS/FS) can play in developing countries. After a review of the definitions and histories of both the free software and open software movements, the paper considers the main issues of OSS as they impact on development.

In the economies of the North, where labour costs are high the costs of software support, customization and integration are high (reflecting the labour intensity of these components) relative to the licence fee for software. Therefore when the total cost of ownership (TCO) is calculated the cost of the licence fee is not a crucial component. However, in developing countries, where labour costs are low the cost of the software licence becomes a relatively more important cost component.

This can be illustrated by using GDP per capita, as a proxy for average income to illustrate that in developing countries the price of proprietary software (in this case Windows XP together with Office XP as representing the minimum general business office requirement) is high in purchasing power terms. As an example, in Kenya the price of Office XP is the equivalent of 18.12 months of GDP per capita. This is the equivalent of charging a single licence fee in the UK of £31,342, and for that price anyone in the UK can buy a new BMW 525i car.

The case for a developing country to adopt an open source software driven ICT strategy is compelling when the above argument is combined with the ability of open source software to encourage local skills and for local languages to be used.

For ITDG one of the key issues is “how can new technology be consistent with the concept of intermediate technology?” According to six criteria, used by Schumacher to define intermediate technology, our analysis shows that OSS/FS can be viewed as an intermediate technology. It can be produced by the masses, it is conducive to decentralization and it makes use of modern knowledge.

In summary (a detailed schedule is given in section 9.1) the action points that ITDG should take in relation to open source software are:

- § Engage as a civil society organisation in the debates about open source software. Appropriate venues might include WSIS in Tunis in 2005, and continued involvement in the Free and Open Source Software Foundation for Africa.
- § Consider the adoption and use, where appropriate, of OSS/FS in its international development programmes.
- § Whenever ICT procurement decisions, throughout the Group, are made OSS/FS should be given consideration.
- § Develop programmes of work that explicitly make use of OSS/FS to help deliver the outcomes of the projects.
- § Explore the open source model of production of knowledge.

The paper concludes with some speculation that open source may become a generic model for the production of knowledge. Given the discussion about OSS/FS as an intermediate technology in this paper a key issue for ITDG is about developing a tenable advocacy position around open source and not simply limiting this debate to the confines of software production.

2. Background and Context

The international business plan for IA4 identifies six top level priorities for programmes of work. Open source software, identified in the current work plan within the policy and advocacy programme, is recognised as a strategic part of the overall programme portfolio. The ITDG Group Strategy recognises the influence and impact that knowledge can have on the lives of poor people. It goes on to specifically say that there is a need to regain control of the ways in which new technologies are developed and used.

“Knowledge and communications-based industries are transforming the global economy, causing a ‘knowledge divide’ between the information rich and the information poor. There is an urgent need to regain control of the ways new technologies are developed and used.” Group Strategy 2003/07, ITDG (2003:p11)

“To enable poor people to assess and respond to the challenges of new technologies and to develop and adopt applications that improve their livelihoods.” Group Strategy 2003/07, ITDG (2003:p11)

Although ICTs have the potential to supply and distribute information to the poor in practice there is growing evidence that many technologies, such as the Internet does not reach the very poor. For example, the DFID (2002) report on “The significance of ICTs for reducing poverty” highlighted the importance of helping poor people address their information needs. ICTs have the potential to provide that information yet paradoxically they may also not reach the very poor. Instead, such technologies as the Internet may “stop short” of reaching the very poor. The Internet may thus contribute to a widening gap between rich and poor within developing countries.

The purpose of this paper is to brief everyone in ITDG about the significance that one particular technology (OSS/FS) could have in reducing poverty. This paper explores how open source software can be seen as a technology that enables control to be regained. It traces the history of open source to cast light on the overall motivations for the movement. Goes on to assess the market position, with a particular focus on the countries and regions where ITDG has operations. Concluding with assessments of the role open source can have in development. Reference sections are included to illustrate the wealth of further information available.

The next section defines “open source software”. However, before that discussion there is a need to explore some key features of software and the impact they have on the open source software debate. Software can be defined as, “the programs, routines, and symbolic languages that control the functioning of the hardware and direct its operation” ([American Heritage Dictionary, 2000](#)). As such, software is an information intensive product. Thus it shares many of the features of information. Of particular relevance here is the feature that the consumption of information by one person does not reduce the quantity of that information. It may be simultaneously consumed by an infinite number of people at the same time. Information is costly to produce but cheap to reproduce, or as an economist would put it, information has a high fixed cost and low marginal cost. The following analogy illustrates these points.

If I make a meal of chicken and rice and then you eat it (without being invited to do so) I would be justifiably upset because I would go hungry. The consumption of resources (such as a meal) requires compensation for the resources used. This analogy is often used to justify the payment for software, which is subject to copyright laws. However, if I produce some software and you copy it we are both able to use it. Your consumption of the product does not impede my consumption. Information, as a product has a zero marginal cost and it is sharable by an infinite (in theory at least) number of people at the same time.

Information intensive goods and services make up an increasing proportion of the worlds trade, so the impact of policy influence can be high. For example, in the 1950's 80% of the value added in the US economy was in manufacturing and 20% in knowledge goods; by the 1990's the proportion contributed by knowledge had risen to 70% (Stewart 1997). The most significant resource in the economy then switches to become intellectual capital.

3. Definition of "Open Source Software"

There is a need to distinguish between "open source" and "free software". On the Internet there are many sources of information about the distinction between these concepts. The clearest discussion is from Wikipedia (which is itself an example of an open source encyclopedia), reproduced below:

"In the strict definition, the term "open source" is distinct from "free software," and it should only be applied to software that meets the terms of the Open Source Definition (see also the Free Software Foundation's (FSF) Free software definition). The decision to adopt the term "open source", suggested by Christine Peterson of the Foresight Institute, was based partly on the confusion caused by the dual meaning of the word "free"; the FSF intended the word to mean "free speech, not free beer," but nevertheless, free software came to be associated with zero cost, a problem which was exacerbated by the fact that a great deal of it is, in fact, free of charge. It was hoped that the usage of the newer term "open source" would eliminate such ambiguity, and would also be easier to "market" to business users (who might mistakenly associate "free software" with anti-commercialism). Since its introduction, however, the "open source" label has been criticized for fostering an ambiguity of a different kind: that of confusing it for mere availability of the source, rather than the freedom to use, modify, and redistribute it.

The Free Software Definition is slightly more restrictive than the Open Source Definition; as a consequence of this, free software is open source, but open source software may or may not be "free." In practice, nearly all open-source licenses also satisfy the FSF's free-software definition, and the difference is more a matter of philosophical emphasis. (One of the few counter-examples was an early version of the Apple Public Source License, which was considered open source but not free because it did not allow private modified versions; this restriction was later removed.) For instance, software distributed under both the GPL and BSD licenses are considered both free and open source (the original BSD License had terms legally incompatible with the GPL, but this practical difficulty is a separate issue from its free-ness). Confusion about the distinctions between free and open source software is the source of some misunderstanding, particularly in the mass media where the two terms are often applied interchangeably." ([Wikipedia](#)).

The next two paragraphs are extracts from the "open source" and "free software" web sites respectively.

"Open source promotes software reliability and quality by supporting independent peer review and rapid evolution of source code. To be OSI certified, the software must be distributed under a license that guarantees the right to read, redistribute, modify, and use the software freely." ([OSI 2004](#)).

"Free software is a matter of the users' freedom to run, copy, distribute, study, change and improve the software. More precisely, it refers to four kinds of freedom, for the users of the software:

- § The freedom to run the program, for any purpose (freedom 0).
- § The freedom to study how the program works, and adapt it to your needs (freedom 1). Access to the source code is a precondition for this.
- § The freedom to redistribute copies so you can help your neighbor (freedom 2).

- § The freedom to improve the program, and release your improvements to the public, so that the whole community benefits (freedom 3). Access to the source code is a precondition for this.” (GNU Project)

The rest of this paper will take a pragmatic stance, on the basis that OSS and FS have so much in common in terms of how they can and should impact on development in poor countries, to abbreviate all references to OSS/FS.

4. Main Issues in the Global Market

This section reviews the main issues about open source software currently under discussion in the global market.

4.1 Problems of Open Source Software

The open source movement, by its nature, tends to be populated by enthusiasts. In an effort to redress the balance it is important to explore some of the problems currently experienced with open source software. Levesque (2004) identifies five problem areas.

- § User interface design is neglected
Many open source programs have a poor user interface – one that is not intuitive. Given that users tend to judge a program on the quality of the user interface, this problem is a key issue to solve if open source software is to flourish.
- § Lack of (or poor) documentation
Often there is a lack of documentation which inhibits the uptake of the software. A certain level of technical expertise is often assumed by those who release open source software.
- § Feature-centric development
The best software programs are ones that do one thing well and interface with other programs. The nature of open source software appears to encourage development of feature rich programs that lack some basic refinements such as user interface and documentation.
- § Programming for the technocrat
Many programs are written by programmers for other programmers. They fail to appreciate that what might be intuitive to them is not so intuitive to the general public.
- § Narrow philosophical stance
Many people join the open software movement for strong ethical and philosophical reasons. At the extreme, this appears to lead to a lack of learning across the proprietary and open source divide.

4.2 Total Cost of Ownership

In the economies of the North, where labour costs are high the costs of software support, customization and integration are high (reflecting the labour intensity of these components) relative to the licence fee for software. Therefore when the total cost of ownership (TCO) is calculated the cost of the licence fee is not a crucial component. However, in developing countries, where labour costs are low the cost of the software licence becomes a relatively more important cost component.

The following table uses the GDP per capita, as a proxy for average income, to illustrate that in developing countries the price of proprietary software (in this case

Windows XP together with Office XP as representing the minimum general business office requirement) is high in purchasing power terms.

The table shows that in Kenya the price of Office XP is the equivalent of 18.12 months of GDP per capita. This is the equivalent of charging a single licence fee in the US of US\$53,283, which would be clearly unaffordable. Figures for piracy from the Business Software Alliance show that there is a correlation between the piracy rate and the effective software licence fee.

Table 4.2.1 Comparison of per capita GDP and cost of Windows XP and Office XP

Country	GDP per cap	PCs ('000)	Piracy	Effective \$	GDP months
Bangladesh	350	254	n.a.	56,401	19.19
Kenya	371	172	77%	53,283	18.12
Nepal	236	83	n.a.	83,770	28.50
Peru	2051	1,262	60%	9,630	3.28
Sri Lanka	849	175	n.a.	23,257	7.91
Sudan	395	115	n.a.	49,990	17.00
Zimbabwe	706	155	68%	27,965	9.51
U.K.	24,219	21,533	25%	816	0.28
U.S.	35,277	178,326	25%	560	0.19

Source: Ghosh, R.A. (2003) using a June 2003 cost base.

4.3 Platform for skills development

A major study of developers and users (Ghosh 2002) showed that the most important reason for developers to participate in open source communities was to learn new skills. These skills help developers get jobs and can help create and sustain small service businesses in the ICT sector.

4.4 Security

Users of open source software often quote the higher security and better performance - as compared to proprietary software — as the major reasons for adoption. An analysis by Wheeler (2003) suggests, for example, that there are more vulnerabilities reported in Windows than in Linux. This means that there are likely to be more virus and hacker attacks on Windows based systems.

4.5 Performance

Wheeler (2003) reports on a number of benchmarking tests that purport to compare the performance of Windows vs. OSS/FS. However, as he rightly points out there are limitations to any performance test.

“In benchmarking everything depends on the configuration and assumptions that you make. Many systems are constrained by network bandwidth; in such circumstances buying a faster computer won't help at all. Even when network bandwidth isn't the limitation, neither Windows nor GNU/Linux do well in large-scale symmetric multiprocessing (SMP) configurations; if you want 64-way CPUs with shared memory, neither is appropriate (Sun Solaris, which is not OSS/FS, does much better in this configuration). On the other hand, if you want massive distributed (non-shared) memory, GNU/Linux does quite well, since you can buy more CPUs with a given amount of money. If massive distribution can't help you and you need very high performance, Windows isn't even in the race; today

Windows 2000 only runs on Intel x86 compatible chips, while GNU/Linux runs on much higher performance processors as well as the x86.” Wheeler (2003).

There are some practical projects, (e.g. [K12 Linux Terminal Server Project](#)) which demonstrate that open source can be used to prolong the life of older technology (e.g. Intel 486 based chips) by using them as thin clients (no software or hard disks on the workstation – all software is run on the server). These can be appropriate for Schools because they are easy to install and require little maintenance.

5. Current market position

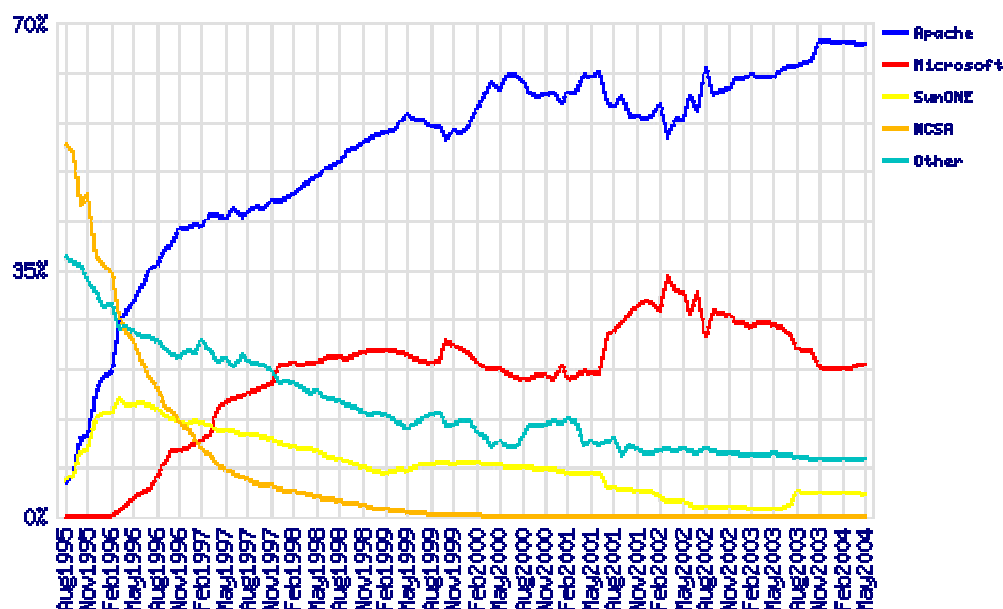
The importance of establishing the current market position is to help understand the level of maturity of OSS/FS. Some critics may argue that open source is a transitory phenomena and therefore not worth investing in. Their needs to be confidence established that an “open source industry” would be sustainable.

There is a history, going back at least 20 years, of major components of the Internet being developed as open source. For example, the Berkley Internet Name Daemon (BIND) the system that converts an IP address into a domain name (instead of having to commit 194.128.7.2 to memory all the user needs to remember is www.itdg.org.uk) is used by over 90% of all domain name servers.

5.1 Global market

The graph below shows that Apache servers had 67% of the market whilst Microsoft had 21%.

Figure 1 Market Share for Top Servers Across All Domains
August 1995 - May 2004



Source: Netcraft.com, May 2004

5.1 Europe

A major report on OSS/FS, funded under a EU research programme (EU FP5) was published in October 2002 (Ghosh 2002). Led by the Infonomics Faculty at Maastricht University in The Netherlands this has led to further funded work (EU FP6) on the policy dimensions of OSS/FS, due to report at the end of February 2006.

5.3 Latin America

In Latin America, Mexico, Brazil and Argentina top OSS/FS related activity in overall usage of OSS/FS as well as writing code, followed by Colombia, Venezuela and Peru. The Latin American programmers have made significant contributions to the overall OSS/FS projects around the globe (Rajani 2003).

For a further discussion of Peru and national ICT policy see section 7.2 and Appendix 3.

The ITDG-LA office makes substantial use of OSS/FS.

5.4 Africa

In Africa, South Africa tops the list for the use of OSS/FS, closely followed by Kenya, Namibia, and Nigeria. Though there is significant activity starting in countries like Ethiopia, Ghana and Zambia (Rajani 2003).

In South Africa there has been a recent discussion over the merits and demerits of OSS/FS versus proprietary software in government, education, and official use. Microsoft recently donated 32,000 Windows licenses for schools, which generated substantial discussion about its use.

The main group that is trying to co-ordinate the development and use of OSS/FS in Africa is the Free and Open Source Software Foundation for Africa ([FOSSFA](#)). The secretariat for this group is based in Nairobi, Kenya. Kagai, a founder of Fossfa, and an outspoken critic of proprietary software, said "Fossfa estimates Africa's ICTs industry to be worth more than \$25 billion and growing. It will be unfair to Africa if our leaders were to give away this industry to already rich corporations when local talent exists to service this industry in this continent." ([FOSSFA](#)). The ITDG-EA Regional Director has been involved in this group in the past.

5.5 South Asia

In South Asia Rajani (2003) reports that Bangladesh, Pakistan, Sri Lanka, and Nepal have a medium level of OSS/FS activity. Only in India is the activity higher.

For a further discussion of Sri Lanka and national ICT policy see section 7.1. The main body set up to advance the use of OSS/FS in Sri Lanka is the [Lanka Software Foundation](#) (LSF).

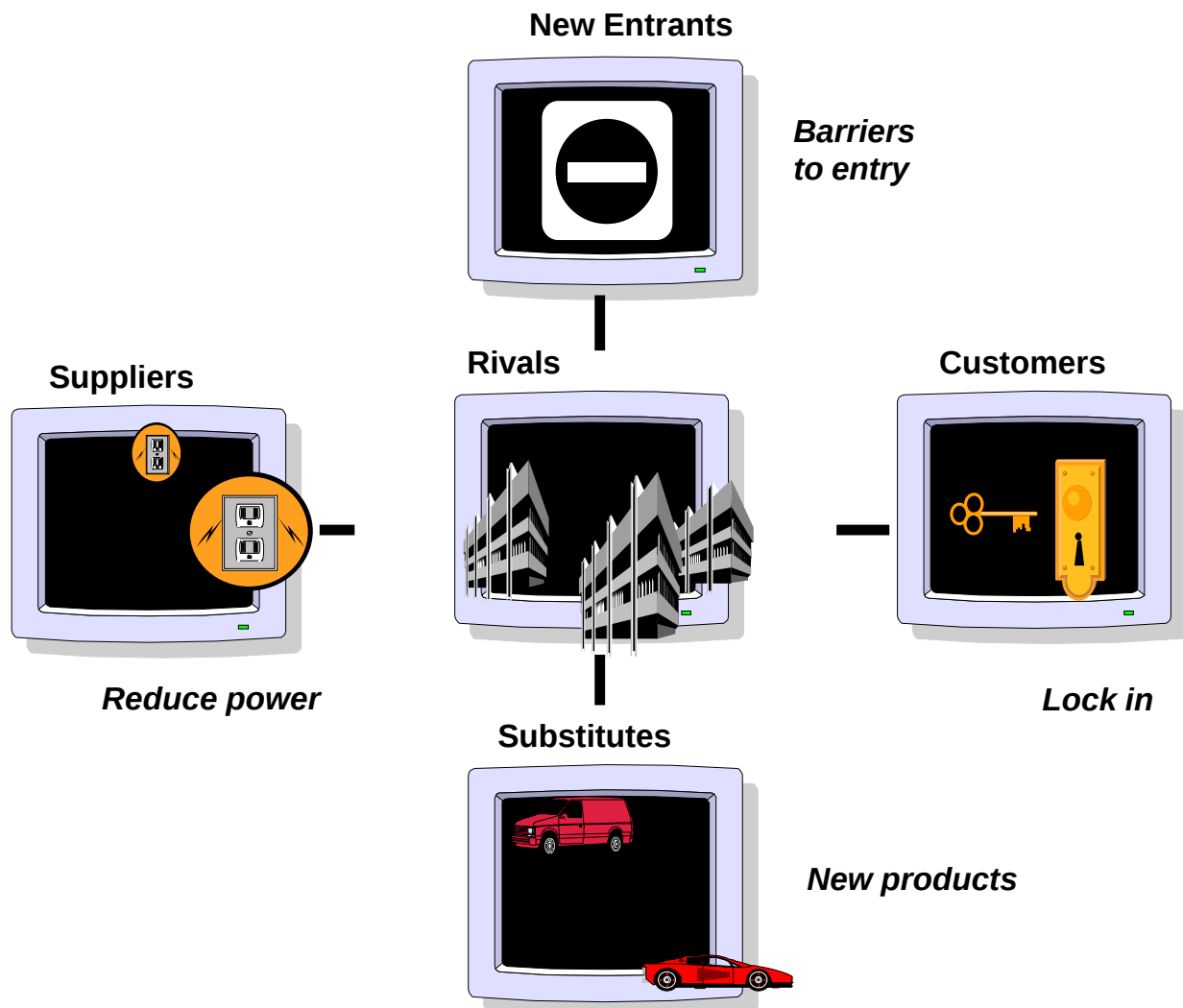
6. Open Source and Development

Let us take a step back from OSS/FS for a moment and consider the wider viewpoint of the global economy. In an increasingly networked world the power is in the links rather than the nodes. Being interconnected becomes one of the important driving forces of the economic efforts of individuals and communities. Lack of connection leads to increased marginalization of communities. In colloquial terms, poor people are "left out of the loop".

Many networks in the global economy are now underpinned by information technology. The Internet is one good example of this phenomenon. Consider the impact of such networks on the forces of competition and on the supply chain of products. Figure 2 illustrates the impact new technology can have on markets. For example, the high cost of technology (such as Internet, hardware and software systems) can increase the barriers to entry. Similarly, customers can be "locked-in" to a particular supplier which also has the effect of reducing the power of the supplier (for example a multinational corporation can reduce the power of coffee producers by installing information technology which increases the switching costs for the supplier).

If the base of the ICT system is proprietary it is more likely to “lock-in” the customer. With an OSS/FS based ICT system customers can exercise greater choice in the way in which the system is implemented and maintained.

Figure 2. Forces of Competition and the Impact of New Technology



Source: Grimshaw (2000) adapted from Porter (1980) and Earl (1989).

“The case for a developing country to adopt an open source software driven information technology strategy is a compelling one” (Weerawarana, S. and Weeratunga, J. 2004).

The above quotation is taken from a study (108 pages) funded by SIDA. The objective of the study was, “to provide a strategic framework which developing countries can adopt, exploit and contribute to OSS/FS”. Four key issues raised are vital for establishing the worth of open source in the context of development.

1. Can developing countries create value through OSS/FS?
2. If yes, how can donors support it?
3. What are the barriers to OSS/FS?
4. What practical approaches can be encouraged?

6.1 Creating value through OSS/FS

Weerawarana and Weeratunga (2004) argue that OSS/FS creates value in a developing economy via:

- § New business opportunities in the ICT sector.
- § Reduction of costs of ICT for both Government and private sector.
- § Improvement in the effectiveness and efficiency of Government.

The achievement of this value, Weerawarana and Weeratunga (2004) go on to argue, is dependant on the following ICT infrastructure being in place.

- § Intellectual property law framework and enforcement
- § Low cost, widely available Internet access.
- § Educational infrastructure.
- § Freedom of information.
- § English language skills amongst software developers.
- § Skilled or trainable pool of developers.

All the above considerations are strategic in nature. They are considerations that need to be taken account of in national ICT strategies. Specific action points have been suggested as the following, grouped into topics.

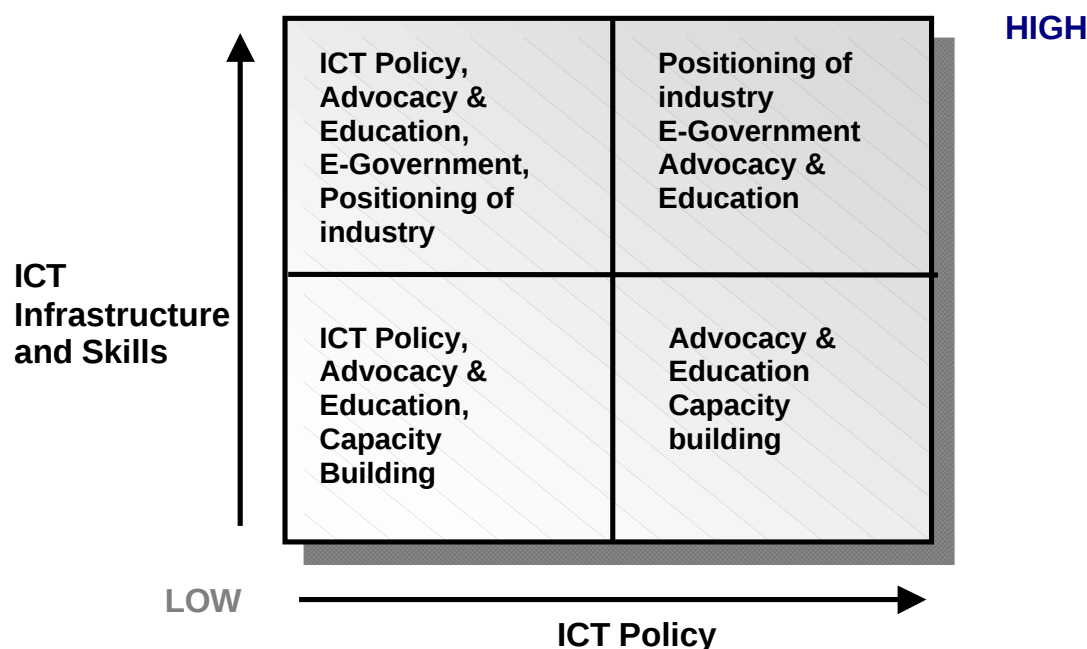
- § IT Policy
 - o Establish government software procurement policy
 - o Encourage good private sector procurement policies
 - o Keep the internet free of tariffs, licensing and control.
- § Advocacy and education
 - o Establish an OSS/FS advocacy group.
 - o Open Source Computer Driving Licence (CDL).
 - o Establish an OSS/FS portal.
 - o Establish customized training programmes through professional organizations.
 - o Introduce OSS/FS into University curricula.
 - o Introduce an OSS/FS version of CDL.
 - o Develop localized versions of OSS/FS.
- § Capacity building in the local software industry.
 - o Establish localization centres.
 - o Establish an R&D centre.
- § Positioning the local software industry in the global economy
 - o Participate in global software projects.
 - o Develop collaborative models for working between developed and developing countries.
- § E-Government
 - o Establish a policy framework.

- o Establish open standards architecture.

6.2 How can donors support OSS/FS?

Assistance to developing countries should be targeted according to their particular context (Weerawarana and Weeratunga 2004). The action lines (see above) can be mapped into a matrix of ICT policy and ICT infrastructure and skills to show where donor assistance should be addressed (Figure 3).

Figure 3. ICT Policy vs. ICT Infrastructure and Skills Matrix



Source: Adapted from Weerawarana and Weeratunga (2004)

6.3 What are the barriers to OSS/FS?

The claim that OSS/FS will create value in developing economies rests partly on the assumption that individual software developers will not only be willing but will be positively attracted to working on OSS/FS systems. There are some debates on this issue that question the attractiveness of working on OSS/FS from an individual's point of view. A workshop held in March 2004 in Namibia (Bridges.org 2004) explored these issues, including some face-to-face interviews with participants. The major barriers identified were:

- § Prohibitive cost of computers, for example the University of Ghana has 300 computer science students and only 6 computers (a ratio of 50:1).
- § Prohibitive cost of Internet connectivity, for example in Nigeria a 32Kbps connection costs US\$1,000 per month or US\$500 in Zambia
- § The low cost of labour in the economies means that computers are not immediately employed as a way of improving productivity.
- § African developers tend to be physically isolated, with just a few in each city in each country. That might not be a problem if there were fast Internet connectivity. An apparent paradox is also at work here in that evidence shows that whilst physical goods are produced in many different

areas of the world there are limited spatial clusters of knowledge based industries (Dunning 2000).

- § Income from programming is sporadic and therefore unlikely to be able to support those with family responsibilities.
- § Governments and other employees fail to look for locally produced solutions.
- § Lack of appreciation of the multiplier effects that the ICT sector can have on the economy. For example, every Rand invested in ICT development in South Africa generates Rand 1.5 in economic activity (Bridges.org 2004).
- § Theft of ideas is a problem for OSS/FS developers. Code may be open and shared and this means there is no barrier to another person copying the code and then closing it via intellectual property law.

A further key issue here is a complex one that involves taking a position with respect to Microsoft. The actions of Microsoft are well documented in Appendices 2 and 3. Microsoft has a variety of philanthropic programmes and initiatives aimed at developing countries. Examples of these are: [Promotions for the Voluntary Sector](#), [Community Investment Programme](#) and the [Unlimited Potential](#) Programme (in 2003 Microsoft donated US\$40m in cash and US\$224m in software).

6.4 What Practical approaches can be encouraged?

There are a range of practical approaches that can be taken and emphasise the generic advantages of OSS/FS. Practical approaches include:

- § Language adaptation, so that interfaces and language tools such as spell checkers are available in local languages. For example there is now a Kiswahili spellchecker available for OpenOffice, and a Luganda translation of the Mozilla browser.
- § Localisation can also be broader than conventional language adaptation. For example, using local language interfaces captured from mobile phones that could produce voice interfaces to other information systems of use to remote communities. This would help to produce solutions that support local needs rather than adapt solutions that have been imported from other contexts. Such solutions would make use of the predominant ICT platform in Africa, namely the mobile phone.
- § NGO market could be important for fostering a local ICT industry based on OSS/FS development. There is currently a perceived lack of interest in what ICT can do for NGOs together with a lack of interest by the OSS/FS development community.
- § Developers network (with focus on user needs). Some encouragement is often needed to persuade small organizations, including NGOs to adopt OSS/FS because of the perceived risks associated with lack of support. AfricaSource has dubbed such an initiative as a "Social Sourceforge"ⁱ.
- § Campaign for a change in the legal framework. In Ghana, Francois Bonin reports that, "the law is that it's only theft when I take something of yours and you don't have it any more. In court, if I have taken your code, they will ask you, "What? You don't have it anymore?" "

ⁱ Sourceforge is an online portal for software developers working with OSS (<http://www.sourceforge.net>)

- § Work with existing networks. For example, in Africa FOSSFA have 200 developers in its community. It has a mission to be the champion to fight for open source in the development community by focusing on getting recognition for the advantages of free and open source software.

6.5 Summary of Conclusions

This section attempts to summarise the main conclusions concerning the effect of open source on development.

- § OSS/FS creates value in a developing economy.
- § Assistance needs to be targeted to ICT policy, advocacy and capacity building depending on the specific needs of the country concerned.
- § The practical approaches outlined in section 6.4 should be adopted.
- § A policy decision needs to be made with respect to whether accepting discounted software from Microsoft is compromising the position ITDG may wish to make with respect to advocating an OSS/FS approach in developing countries.

The discussion in this section has been specifically about the implications of open source for developing countries. However, there is some increasing speculation that open source may become a generic model for the production of knowledge (Weber 2004). Given the discussion about OSS/FS as an intermediate technology (in section 9) of this paper a key issue for ITDG is about developing a tenable advocacy position around open source and not simply limiting this debate to the confines of software production.

7. Open Source and National ICT Policy

7.1 Sri Lanka

Weerawarana, S. and Weeratunga, J. (2003), reproduced as Appendix F in Weerawarana, S. and Weeratunga, J. (2004), contains a case study, which is essentially the story of establishing the [Lanka Software Foundation](#) (LSF). The following paragraphs are taken from their web site.

LSF is non-profit foundation and was founded by [Sanjiva Weerawarana](#) and [Jivaka Weeratunga](#). Its objectives include:

- § To support open source software developers and projects with infrastructure, funding, motivation, research, development, consultancy, training and other enabling facilities.
- § To create an identity to the Sri Lankan open source software developer community and provide for worldwide interaction, co-operation and co-ordination of open source software developers.
- § To provide bursaries, scholarships, grants, financial assistance and other facilities to students, teachers and lecturers for academic and research studies with respect to open source software and related fields.
- § To initiate, establish and implement open software projects.
- § To undertake to provide open source software services.
- § To liaise with external agencies and act as a medium to obtain and receive resources, facilities and funds for the development and enhancement of knowledge, education and research with respect to open source software and related fields.

- § To organize and promote seminars, workshops, conferences and exhibitions for the purpose of training and dissemination of knowledge.
- § To establish an open-source network consisting of developers and their employers, universities, professional organizations, university-hosted development labs and other international open-source organizations.

LSF currently operates two development labs:

- § University of Colombo School of Computing (UCSC): This lab houses the 7 developers working on the Apache Axis C++ SOAP project. There are 7 desktop machines, work areas and a whiteboard in this room. The machines are on the UCSC network, which is connected to LEARN.
- § University of Moratuwa, Dept. of Computer Science & Engineering: This lab houses the 4 undergraduate students doing their professional training at LSF.

We should consider this model to establish opportunities for partnership and spreading to other countries.

7.2 Peru

In what has become a classic case of conflict between proprietary and open systems the situation in Peru is illustrative of a number of key arguments between the two “sides”. Appendix 3 reproduces the correspondence between Microsoft and Dr. Edgar David Villanueva Nunez a Peruvian congressman. It makes compelling reading and is therefore reproduced in full.

8. What positions do other NGO's take?

A recent study by Panos and the Commonwealth Telecommunications Organisation (McLean et al 2002) discusses the issues around “strengthening developing country participation in international ICT decision-making” but does not mention open source software. This seems to be a rather glaring omission given the context of the study.

The WSIS discussed OSS/FS, however it was reported that:

“No consensus was reached on the issue of open source software as an alternative to proprietary software. Civil society had wanted the summit to encourage adoption of open source software but business representatives strongly rooted for proprietary software. Civil society argued that open software is cheap and can boost ICT use in developing countries.

Ultimately, the summit said access to information and knowledge can be promoted by increasing awareness among all stakeholders of the possibilities offered by different software models, including proprietary, open-source and free software, in order to increase competition, access by users, diversity of choice, and to enable all users to develop solutions which best meet their requirements. It added that affordable access to software should be considered as an important component of a truly inclusive Information Society.” Source: [Highway Africa News Agency](#) (2004).

There have been moves within Oxfam to suggest that software and other information products should be subject to their ethical purchasing policy, which says that, “products should be produced and delivered under conditions that do not involve the abuse or exploitation of any persons and have the least negative impact on the environment.” (Oxfam 2004).

9. What Position can ITDG take about OSS/FS?

People who held a philosophical belief in freedom started the free software movement. Their position can be summarized as, “Free software is a matter of freedom: people should be free to use software in all the ways that are socially useful. Software differs from material objects - such as chairs, sandwiches, and gasoline - in that it can be copied and changed much more easily. These possibilities make software as useful as it is; we believe software users should be able to make use of them.” ([GNU Project](#))

Recent writing in the development literature has discussed the concept of freedom. Most notably Amartya Sen (1999:297) views development as a process of expanding the substantive freedoms that people have.

The founder of ITDG, E.F. Schumacher (1973:248) said that, “only in the service of truth is perfect freedom”.

Perhaps more famous for his espousal of intermediate technology the key question in readers minds might be, “how can new technology be consistent with the concept of intermediate technology?” Schumacher discussed the difference between mass production and production by the masses. He took the view that, “The technology of production by the masses, making use of the best of modern knowledge and experience is conducive to decentralization, compatible with the laws of ecology, gentle in its use of scarce resources, and designed to serve the human person instead of making him the servant of machines. I have named it intermediate technology to signify that it is vastly superior to the primitive technology of bygone ages but at the same time much simpler, cheaper, and freer than the super-technology of the rich.” (Schumacher 1999:128)

Table 9.1 shows a comparison of OSS/FS and proprietary software with intermediate technology as defined by Schumacher above. This demonstrates that OSS/FS is, according to these criteria, an intermediate technology.

Table 9.1 How does software match up to the criteria for Intermediate Technology?

Criteria	Proprietary software	Open Systems Software	Intermediate technology
Production by the masses	No	Yes	Yes
Making use of modern knowledge	Yes	Yes	Yes
Conducive to decentralisation	No	Yes	Yes
Compatible with the laws of ecology	No	Yes	Yes
Gentle in use of resources	No	Yes	Yes
Serves the human person	No	Yes	Yes

Yee (1999) has argued that free software is an appropriate technology and he makes use analogies to convey the difference that proprietary and free software can have on development issues. Table 9.2, inspired by Yee (1999) compares two products. Imagine you are putting wind power into a village in Kenya and you have a choice of product A or B.

Table 9.2 A comparison of products

Product A	Product B
Produced by a large multinational vendor.	Designed by an open process of people living anywhere in the world.
Controlled by use of intellectual property law.	Sold and supported by thousands of companies.
Is in a sealed unit that you cannot access.	Comes with a set of tools for making modifications. There are many organizations that can offer customization.
Uses proprietary fittings that you have to purchase from the same supplier.	Uses standard fittings for connection to the power supply.
If you connect another village to the power source you must pay an additional licence fee.	You can connect any number of villages.
Is prone to malfunction.	Often runs for years without problems.

Applying our criteria for intermediate technology (Table 9.1) Product B would be chosen. Readers can make up their own mind about the similarity of these products to a comparison that might be made between Linux and Microsoft Windows.

A further analogy, made by Yee (1999), to the effect of baby milk powder on poor infants shows how dependency can be fostered via seemingly neutral initiatives such as the philanthropic donations of companies such as Microsoft.

An Analogy: Baby-milk Powder

“[The effects of baby-milk powder on poor infants](#) (which has sparked a Nestle campaign/boycott) provide an analogy to the effects of proprietary software.

Sending information in Microsoft Word format to correspondents in Eritrea is analogous to Nestle advertising baby milk powder to Indian mothers. It encourages the recipients to go down a path, which is not in their best interests, and from which it is not easy for them to recover. The apparent benefits (the doctor recommended it; we will be able to read the documents sent to us) may be considerable and the initial costs involved (to stop breast-feeding and switch to milk powder; to start using Microsoft Office) may be subsidised, hidden, or zero (with ["piracy"](#)), but the long-term effects are to make the recipients dependent on expensive recurrent inputs, and to burden them with ultimately very high costs.

Moreover, because documents can be easily copied and because there are strong pressures to conform to group/majority standards in document formats, pushing individuals towards proprietary software and document formats can snowball to affect entire communities, not just the individuals initially involved.”

Source: Yee (1999)

This analysis leads us to argue that ITDG should engage in the debates about open source software and embed OSS/FS in its projects wherever feasible.

From a strategic point of view there are two opposing views held in the global software community.

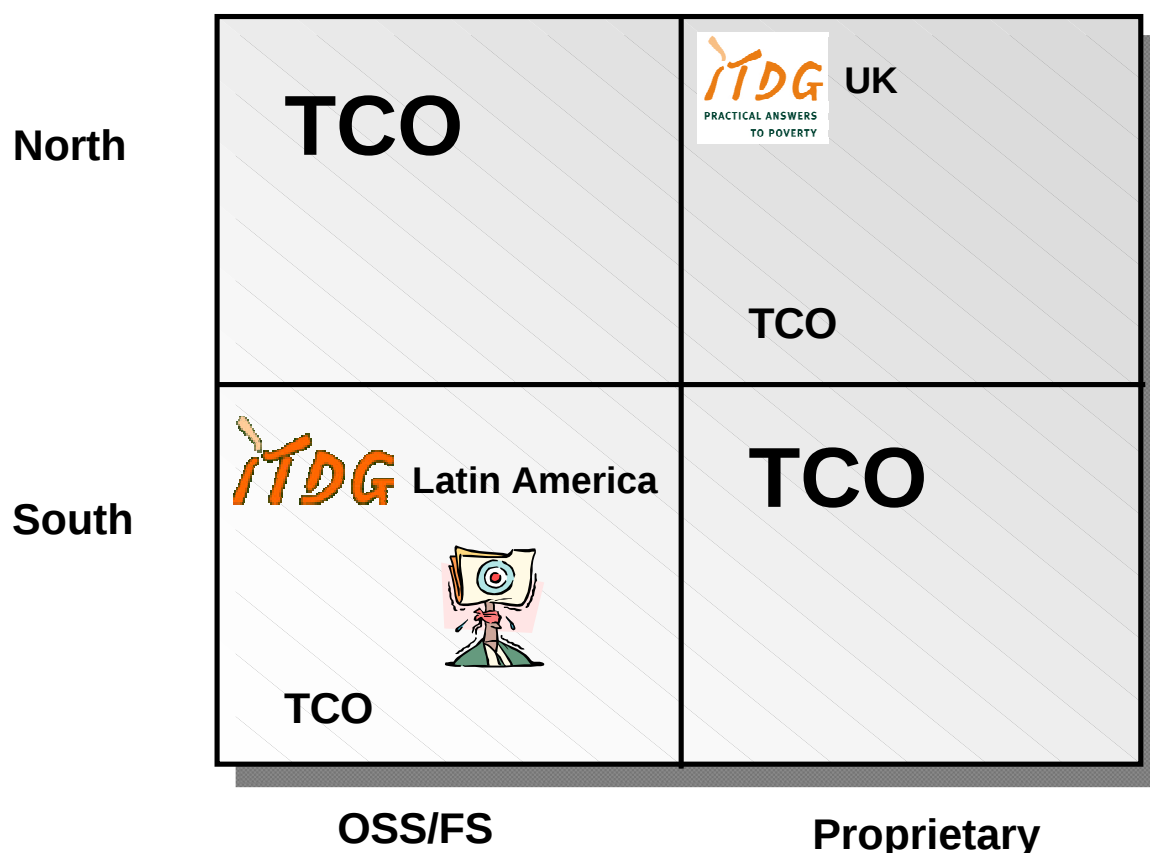
1. “When software generates profit, it enables companies to grow, attracts investment and enables those companies to grow into tremendous sources of innovation and local employment.” (Carrol, J. 2003)
2. “The case for a developing country to adopt open source software driven information technology strategy is a compelling one”
(Weerawarana, S. and Weeratunga, J. (2004).

The review of literature and the argument developed in this paper demonstrate evidence in favour of “the case for a developing country to adopt open source software driven information technology strategy is a compelling one”.

The open source model is based on the decentralised efforts of individual software developers. To that extent it is directly aligned with the ITDG Group Strategy, which states that, “there is an urgent need to regain control of the ways new technologies are developed and used”.

In Figure 4 the concept of total cost of ownership (TCO) is used to illustrate how approaches to OSS/FS need to be adaptive to the context of the country in which ITDG is operating. In our work with countries in the South we should positively seek to demonstrate the benefits of OSS/FS by using arguments that are familiar to ITDG, in other words we should stress the benefits of using intermediate technologies.

Figure 4. OSS/FS and Strategy



In summary the action points that ITDG should take in relation to open source software are:

- § Engage as a civil society organisation in the debates about open source software. Appropriate venues might include WSIS in Tunis in 2005.
- § Consider the adoption and use, where appropriate, of OSS/FS in its international development programmes.
- § Whenever ICT procurement decisions, throughout the Group, are made OSS/FS should be given consideration.
- § Develop programmes of work that explicitly make use of OSS/FS to help deliver the outcomes of the projects.
- § Explore the open source model of production of knowledge.

A more detailed schedule of actions is given on the following page, noting the key stakeholders and providing a timescale of activities.

9.1 Schedule of Recommended Actions

Action	Activities	Partners or Stakeholders	Timescale	External Events
Engage as a civil society organisation in the debates about open source software.	Register as accredited entity with WSIS. Participation in country initiatives. Participation in international initiatives.	Lanka Software Foundation Free and Open Source Software Foundation for Africa International Open Source Network (UN and IDRC)	June 2004	WSIS 16-18 November 2005 in Tunis.
Consider the adoption and use, where appropriate, of OSS/FS in its international development programmes.	Hold Summer Series event Communicate policy to all ITDG offices via Regional Directors and TL's.	ITDG-UK ITDG - all country and regional offices.	June 2004 November 2004	
Whenever ICT procurement decisions, throughout the Group, are made OSS/FS should be given consideration.	Seek internal ITDG decision. Communicate policy to all ITDG offices via Infotec.	ITDG - Group: Knowledge and Communications Review, especially study on Enterprise Architecture.	November 2004 November 2004	
Develop programmes of work that explicitly make use of OSS/FS to help deliver the outcomes of the projects.	Introduce open source software to the CSTSC in Zimbabwe. Register interest/membership	OSISA Lanka Software Foundation Free and Open Source Software Foundation for Africa International Open Source Network	July - December 2004 June 2004	Periodic conferences

Table, continued

Action	Activities	Partners or Stakeholders	Timescale	External Events
Explore the open source model of production of knowledge.	Study the applicability of the open source model to other areas of economic activity (not software).	ITDG Group	December 2004 to March 2005	Target key conferences.

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Appendix 1. Frequently Asked Questions

This section contains an extract from a Newsletter published by ITDG Southern Africa. The questions are based on an “interview with David J. Grimshaw, the International Team Leader, New Technologies Programme, ITDG”. The audience is mainly NGO and Civil Society bodies in Southern Africa.

Why should we treat digital information differently from other goods that individuals and societies produce?

If I make a meal of chicken and rice and then you eat it (without being invited to do so) I would be justifiably upset because I would go hungry. The consumption of resources (such as a meal) requires compensation for the resources used. This analogy is often used to justify the payment for software, which is subject to copyright laws. However, if I produce some software and you copy it we are both able to use it. Your consumption of the product does not impede my consumption. Information, as a product has a zero marginal cost and it is sharable by an infinite (in theory at least) number of people at the same time.

What are the advantages of using open source software for development?

Four advantages arise from the fact that the source code is open to everyone.

1. Local people who appreciate local language requirements can change the source code. In other words many more people can use their own local languages to enable access to knowledge held on computer-based systems. There are approximately 8500 languages worldwide and only 24 are available within Microsoft 2000.
2. Simple systems can be designed that do not require the latest expensive computer systems to run them. Thereby making access to knowledge less dependent on income. For example, HP Labs Bangalore has developed a “441 technology” (4 keyboards, 4 monitors, 1 systems unit) that runs open office applications.
3. Although “open source” does not mean “free of charge”, costs are likely to reflect resource input rather than monopoly pricing. For example, in East Africa Microsoft Office software costs the equivalent of 1.5 times an annual income. This is the same as asking people in the UK to pay £37,000.
4. By adopting a “commons-based peer production” system self-employed people working on software as part of a network of individuals can have a huge impact on the development of new software products. Locally based software industries can be started with a few individuals sharing their intellectual capital but without high levels of other capital investment.

What are the disadvantages of promoting and using open source software?

Conventional wisdom suggests that getting support for open source software can be both expensive and in short supply. However, there are encouraging signs that this is changing, for example the Free and Open Source Foundation for Africa ([FOSSA](#)) has recently published an action plan focused on support and training for open source software.

Where can I find out more about open source software and the impact it might have on the development needs of Africa?

A search, using Google, for the term, “open source software” found 2.78 million items, yet only 270 of these relate to “open source software and development”. The following table presents a key selection of resources with the aim of taking the reader to greater levels of detail. It also specifically highlights sites that address the specific context of Africa.

Sources of Information on Open Source Software	
Open Source Initiative	www.opensource.org
The Free Software Foundation	www.gnu.org/philosophy
Free and Open Source Software Foundation for Africa	www.fossfa.net
Tanzania Open Source User Group	www.groups.yahoo.com/group/OpenSourceTz/
Manifesto on Use of Open Source	www.hivos.nl/downloads/oss.pdf
Open Source Software for Development	www.undp.org.my/factsheet/docs/ICTIWriting7_OpenSource_28Sep03.pdf

Open source software should not be advocated for every potential application; however, it can make a valuable contribution to sustainable development by stimulating a local software industry, improved access to knowledge, and fostering ownership.

Appendix 2. Sources of Information on Open Source Software

Generic Sources of Information on Open Source Software	
Open Source Initiative	www.opensource.org
The Free Software Foundation	www.gnu.org/philosophy
Manifesto on Use of Open Source	www.hivos.nl/downloads/oss.pdf
Open Source Software for Development	www.undp.org.my/factsheet/docs/ICTIWriting7_OpenSource_28Sep03.pdf
International Open Source Network	http://www.iosn.net
Academic papers on OSS	http://www.opensource.mit.edu

Regional Sources of Information on Open Source Software	
Free and Open Source Software Foundation for Africa	www.fossfa.net
Tanzania Open Source User Group	www.groups.yahoo.com/group/OpenSourceTz/
Lanka Software Foundation	www.opensource.lk/
Free and Open Source Software Asia-Pacific (FOSSAP) Consultation	http://www.iosn.net/downloads/fossap-report-final.pdf

Advocacy Groups on Open Source Software	
Tactical Technology Collective	http://www.tacticaltech.org/
Social software	http://socialsoftware.org
Appropriate Software Foundation	http://www.appropriatesoftwarefoundation.org

Appendix 3. The Dialogue in Peru

There are two law proposals being discussed in the Peruvian Congress. [[Law Number 1609](#)] which defines what constitutes Free Software and [[Law Number 2485](#)] which obliges the state of Peru to use ONLY Free Software in its proceedings.

Microsoft's letter to Peruvian Congressman

San Isidro, March 21st 2002

Mr: Edgar Villanueva Nunez
Congressman of the Republic of Peru

Present.-

Dear Sirs:

First of all, we want to thank you for the chance you gave us to inform you about our work in this country for benefit of the public sector, always looking for the best ways to implement programs that will let us consolidate the initiatives of modernization and transparency in the State.

In fact, thanks to our meeting today you are aware of our global achievements at the international level in the design of new services for the citizen, within the framework of a model State that respects and protects intellectual property.

The actions we talked about are part of a global initiative, and today there exist several experiences which have let us collaborate with programs supporting the State and community in the adoption of technology as a strategic element impacting the quality of life of the citizens.

Furthermore, as arranged in this meeting, we assisted the forum organized in the Congress on March 6th regarding the law project that you are leading, wherein we got the chance to listen to several presentations which lead us now to explain our position so you have a wider grasp of the real situation.

The bill makes it compulsory for all public bodies to use only free software, that is to say open source software, which breaches the principles of equality before the law, that of non-discrimination and the right of free private enterprise, freedom of industry and of contract, protected by the constitution.

The bill, by making the use of open source software compulsory, would establish discriminatory and non competitive practices in the contracting and purchasing by public bodies, violating the base principles of the "Law of State Contracting and Aquisitions" (Number 26850)

So, by compelling the State to favour a business model based entirely on open source, the bill would only discourage the local and international manufacturing companies, which are the ones which really undertake important expenditures, create a significant number of direct and indirect jobs, as well as contributing to the GNP, as opposed to a model of open source software which tends to have an ever weaker economic impact, since it mainly creates jobs in the service sector.

The bill imposes the use of open source software without considering the dangers that this can bring from the point of view of security, guarantee, and possible violation of the intellectual property rights of third parties.

The bill uses the concept of open source software incorrectly, since it does not necessarily imply that the software is free or of zero cost, and so arrives at mistaken conclusions regarding State savings, with no cost-benefit analysis to validate its

position.

It is wrong to think that Open Source Software is free of charge. Research by the Gartner Group (an important investigator of the technological market recognized at world level) has shown that the cost of purchase of software (operating system and applications) is only 8% of the total cost which firms and institutions take on for a rational and truly beneficial use of the technology. The other 92% consists of: installation costs, enabling, support, maintenance, administration, and down-time.

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One of the arguments behind the bill is the supposed freedom from costs of open-source software, compared with the costs of commercial software, without taking into account the fact that there exist types of volume licensing which can be highly advantageous for the State, as has happened in other countries.

In addition, the alternative adopted by the bill (i) is clearly more expensive, due to the high costs of software migration, and (ii) puts at risk compatibility and interoperability of the IT platforms within the State, and between the State and the private sector, given the hundreds of versions of open source software on the market.

The majority of open source code does not offer adequate levels of service nor the guarantee from recognized manufacturers of high productivity on the part of the users, which has led various public organizations to retract their decision to go with an open source software solution and to use commercial software in its place.

The bill demotivates the creativity of the peruvian software industry, which invoices 40 million US\$/year, exports 4 million US\$ (10th in ranking among non-traditional exports, more than handicrafts) and is a source of highly qualified employment. With a law that incentivates the use of open source, software programmers lose their intellectual property rights and their main source of payment.

Open source software, since it can be distributed without charge, does not allow the generation of income for its developers through exports. In this way, the multiplier effect of the sale of software to other countries is weakened, and so in turn is the growth of the industry, while Government rules ought on the contrary to stimulate local industry.

In the Forum, the use of open source software in education was discussed, without mentioning the complete collapse of this initiative in a country like Mexico, where precisely the State employees who founded the project now state that open source software did not make it possible to offer a learning experience to pupils in the schools, did not take into account the capability at a national level to give adequate support to the platform, and that the software did not and does not allow for the

levels of platform integration that now exist in schools.

If open source software satisfies all the requirements of State bodies, why do you need a law to adopt it? Shouldn't it be the market which decides freely which products give most benefits or value?

I really want to thank you for your attention to this letter, and we want to reiterate our interest in meeting you to explain to you in more detail our point of view about the bill you have presented, and to be at your complete disposal to share experiences and information which we are sure can help better analyse and implement an initiative looking to modernization and transparency of the State for the benefit of the citizen.

Sincerely,

Juan Alberto Gonzalez
General Manager
Microsoft Peru"

May 14th, 2002

Source: <http://www.diplous.org/carta.htm>

Peruvian Congressman's Open Letter to Microsoft

Lima, 8th of April, 2002

To: Señor JUAN ALBERTO GONZÁLEZ
General Manager of Microsoft, Perú

Dear Sir:

First of all, I thank you for your letter of March 25, 2002 in which you state the official position of Microsoft relative to Bill Number 1609, Free Software in Public Administration, which is indubitably inspired by the desire for Peru to find a suitable place in the global technological context. In the same spirit, and convinced that we will find the best solutions through an exchange of clear and open ideas, I will take this opportunity to reply to the commentaries included in your letter.

While acknowledging that opinions such as yours constitute a significant contribution, it would have been even more worthwhile for me if, rather than formulating objections of a general nature (which we will analyse in detail later) you had gathered solid arguments for the advantages that proprietary software could bring to the Peruvian State, and to its citizens in general, since this would have allowed a more enlightening exchange in respect of each of our positions.

With the aim of creating an orderly debate, we will assume that what you call "open source software" is what the Bill defines as "free software", since there exists software for which the source code is distributed together with the program, but which does not fall within the definition established by the Bill; and that what you call "commercial software" is what the Bill defines as "proprietary" or "unfree", given that there exists free software which is sold in the market for a price like any other good or service.

It is also necessary to make it clear that the aim of the Bill we are discussing is not directly related to the amount of direct savings that can be made by using free software in state institutions. That is in any case a marginal aggregate value, but in no way is it the chief focus of the Bill. The basic principles which inspire the Bill are linked to the basic guarantees of a state of law, such as:

Free access to public information by the citizen.

Permanence of public data.

Security of the State and citizens.

To guarantee the free access of citizens to public information, it is indispensable that the encoding of data is not tied to a single provider. The use of standard and open formats gives a guarantee of this free access, if necessary through the creation of compatible free software.

To guarantee the permanence of public data, it is necessary that the usability and maintenance of the software does not depend on the goodwill of the suppliers, or on the monopoly conditions imposed by them. For this reason the State needs systems the development of which can be guaranteed due to the availability of the source code.

To guarantee national security or the security of the State, it is indispensable to be able to rely on systems without elements which allow control from a distance or the undesired transmission of information to third parties. Systems with source code freely accessible to the public are required to allow their inspection by the State itself, by the citizens, and by a large number of independent experts throughout the world. Our proposal brings further security, since the knowledge of the source code will eliminate the growing number of programs with *spy code*.

In the same way, our proposal strengthens the security of the citizens, both in their role as legitimate owners of information managed by the state, and in their role as consumers. In this second case, by allowing the growth of a widespread availability of free software not containing *spy code* able to put at risk privacy and individual freedoms.

In this sense, the Bill is limited to establishing the conditions under which the state bodies will obtain software in the future, that is, in a way compatible with these basic principles.

From reading the Bill it will be clear that once passed:

- the law does not forbid the production of proprietary software
- the law does not forbid the sale of proprietary software
- the law does not specify which concrete software to use
- the law does not dictate the supplier from whom software will be bought
- the law does not limit the terms under which a software product can be licensed.

What the Bill does express clearly, is that, for software to be acceptable for the state it is not enough that it is technically capable of fulfilling a task, but that further the contractual conditions must satisfy a series of requirements regarding the license, without which the State cannot guarantee the citizen adequate processing of his data, watching over its integrity, confidentiality, and accessibility throughout time, as these are very critical aspects for its normal functioning.

We agree, Mr. Gonzalez, that information and communication technology have a significant impact on the quality of life of the citizens (whether it be positive or negative). We surely also agree that the basic values I have pointed out above are fundamental in a democratic state like Peru. So we are very interested to know of any other way of guaranteeing these principles, other than through the use of free software in the terms defined by the Bill.

As for the observations you have made, we will now go on to analyse them in detail:

Firstly, you point out that: "1. The bill makes it compulsory for all public bodies to use only free software, that is to say open source software, which breaches the principles of

equality before the law, that of non-discrimination and the right of free private enterprise, freedom of industry and of contract, protected by the constitution."

This understanding is in error. The Bill in no way affects the rights you list; it limits itself entirely to establishing conditions for the use of software on the part of state institutions, without in any way meddling in private sector transactions. It is a well established principle that the State does not enjoy the wide spectrum of contractual freedom of the private sector, as it is limited in its actions precisely by the requirement for transparency of public acts; and in this sense, the preservation of the greater common interest must prevail when legislating on the matter.

The Bill protects equality under the law, since no natural or legal person is excluded from the right of offering these goods to the State under the conditions defined in the Bill and without more limitations than those established by the Law of State Contracts and Purchasing (T.U.O. por Decreto Supremo No. 012-2001-PCM).

The Bill does not introduce any discrimination whatever, since it only establishes **how** the goods have to be provided (which is a state power) and not **who** has to provide them (which would effectively be discriminatory, if restrictions based on national origin, race religion, ideology, sexual preference etc. were imposed). On the contrary, the Bill is decidedly antidiscriminatory. This is so because by defining with no room for doubt the conditions for the provision of software, it prevents state bodies from using software which has a license including discriminatory conditions.

It should be obvious from the preceding two paragraphs that the Bill does not harm free private enterprise, since the latter can always choose under what conditions it will produce software; some of these will be acceptable to the State, and others will not be since they contradict the guarantee of the basic principles listed above. This free initiative is of course compatible with the freedom of industry and freedom of contract (in the limited form in which the State can exercise the latter). Any private subject can produce software under the conditions which the State requires, or can refrain from doing so. Nobody is forced to adopt a model of production, but if they wish to provide software to the State, they must provide the mechanisms which guarantee the basic principles, and which are those described in the Bill.

By way of an example: nothing in the text of the Bill would prevent your company offering the State bodies an office "suite", under the conditions defined in the Bill and setting the price that you consider satisfactory. If you did not, it would not be due to restrictions imposed by the law, but to business decisions relative to the method of commercializing your products, decisions with which the State is not involved.

To continue; you note that:" 2. The bill, by making the use of open source software compulsory, would establish discriminatory and non competitive practices in the contracting and purchasing by public bodies..."

This statement is just a reiteration of the previous one, and so the response can be found above. However, let us concern ourselves for a moment with your comment regarding "non-competitive ... practices."

Of course, in defining any kind of purchase, the buyer sets conditions which relate to the proposed use of the good or service. From the start, this excludes certain manufacturers from the possibility of competing, but does not exclude them "a priori", but rather based on a series of principles determined by the autonomous will of the purchaser, and so the process takes place in conformance with the law. And in the Bill it is established that **no-one** is excluded from competing as far as he guarantees the fulfillment of the basic principles.

Furthermore, the Bill *stimulates* competition, since it tends to generate a supply of software with better conditions of usability, and to better existing work, in a model of continuous improvement.

On the other hand, the central aspect of competitiveness is the chance to provide better choices to the consumer. Now, it is impossible to ignore the fact that marketing does not play a neutral role when the product is offered on the market (since accepting the opposite would lead one to suppose that firms' expenses in marketing lack any sense), and that therefore a significant expense under this heading can influence the decisions of the purchaser. This influence of marketing is in large measure reduced by the bill that we are backing, since the choice within the framework proposed is based on the *technical merits* of the product and not on the effort put into commercialization by the producer; in this sense, competitiveness is increased, since the smallest software producer can compete on equal terms with the most powerful corporations.

It is necessary to stress that there is no position more anti-competitive than that of the big software producers, which frequently abuse their dominant position, since in innumerable cases they propose as a solution to problems raised by users: "update your software to the new version" (at the user's expense, naturally); furthermore, it is common to find arbitrary cessation of technical help for products, which, in the provider's judgment alone, are "old"; and so, to receive any kind of technical assistance, the user finds himself forced to migrate to new versions (with non-trivial costs, especially as changes in hardware platform are often involved). And as the whole infrastructure is based on proprietary data formats, the user stays "trapped" in the need to continue using products from the same supplier, or to make the huge effort to change to another environment (probably also proprietary).

You add: "3. So, by compelling the State to favour a business model based entirely on open source, the bill would only discourage the local and international manufacturing companies, which are the ones which really undertake important expenditures, create a significant number of direct and indirect jobs, as well as contributing to the GNP, as opposed to a model of open source software which tends to have an ever weaker economic impact, since it mainly creates jobs in the service sector."

I do not agree with your statement. Partly because of what you yourself point out in paragraph 6 of your letter, regarding the relative weight of services in the context of software use. This contradiction alone would invalidate your position. The service model, adopted by a large number of companies in the software industry, is much larger in economic terms, and with a tendency to increase, than the licensing of programs.

On the other hand, the private sector of the economy has the widest possible freedom to choose the economic model which best suits its interests, even if this freedom of choice is often obscured subliminally by the disproportionate expenditure on marketing by the producers of proprietary software.

In addition, a reading of your opinion would lead to the conclusion that the State market is crucial and essential for the proprietary software industry, to such a point that the choice made by the State in this bill would completely eliminate the market for these firms. If that is true, we can deduce that the State must be subsidising the proprietary software industry. In the unlikely event that this were true, the State would have the right to apply the subsidies in the area it considered of greatest social value; it is undeniable, in this improbable hypothesis, that if the State decided to subsidize software, it would have to do so choosing the free over the proprietary, considering its social effect and the rational use of taxpayers money.

In respect of the jobs generated by proprietary software in countries like ours, these mainly concern technical tasks of little aggregate value; at the local level, the technicians who provide support for proprietary software produced by transnational companies do not have the possibility of fixing bugs, not necessarily for lack of technical capability or of

talent, but because they do not have access to the source code to fix it. With free software one creates more technically qualified employment and a framework of free competence where success is only tied to the ability to offer good technical support and quality of service, one stimulates the market, and one increases the shared fund of knowledge, opening up alternatives to generate services of greater total value and a higher quality level, to the benefit of all involved: producers, service organizations, and consumers.

It is a common phenomenon in developing countries that local software industries obtain the majority of their takings in the service sector, or in the creation of "ad hoc" software. Therefore, any negative impact that the application of the Bill might have in this sector will be more than compensated by a growth in demand for services (as long as these are carried out to high quality standards). If the transnational software companies decide not to compete under these new rules of the game, it is likely that they will undergo some decrease in takings in terms of payment for licences; however, considering that these firms continue to allege that much of the software used by the State has been illegally copied, one can see that the impact will not be very serious. Certainly, in any case their fortune will be determined by market laws, changes in which cannot be avoided; many firms traditionally associated with proprietary software have already set out on the road (supported by copious expense) of providing services associated with free software, which shows that the models are not mutually exclusive.

With this bill the State is deciding that it needs to preserve certain fundamental values. And it is deciding this based on its sovereign power, without affecting any of the constitutional guarantees. If these values could be guaranteed without having to choose a particular economic model, the effects of the law would be even more beneficial. In any case, it should be clear that the State does not choose an economic model; if it happens that there only exists one economic model capable of providing software which provides the basic guarantee of these principles, this is because of historical circumstances, not because of an arbitrary choice of a given model.

Your letter continues: "4. The bill imposes the use of open source software without considering the dangers that this can bring from the point of view of security, guarantee, and possible violation of the intellectual property rights of third parties."

Alluding in an abstract way to "the dangers this can bring", without specifically mentioning a single one of these supposed dangers, shows at the least some lack of knowledge of the topic. So, allow me to enlighten you on these points.

On security:

National security has already been mentioned in general terms in the initial discussion of the basic principles of the bill. In more specific terms, relative to the security of the software itself, it is well known that all software (whether proprietary or free) contains errors or "bugs" (in programmers' slang). But it is also well-known that the bugs in free software are fewer, and are fixed much more quickly, than in proprietary software. It is not in vain that numerous public bodies responsible for the IT security of state systems in developed countries require the use of free software for the same conditions of security and efficiency.

What is impossible to prove is that proprietary software is more secure than free, without the public and open inspection of the scientific community and users in general. This demonstration is impossible because the model of proprietary software itself prevents this analysis, so that any guarantee of security is based only on promises of good intentions (biased, by any reckoning) made by the producer itself, or its contractors.

It should be remembered that in many cases, the licensing conditions include Non-Disclosure clauses which prevent the user from publicly revealing security flaws found in the licensed proprietary product.

In respect of the guarantee:

As you know perfectly well, or could find out by reading the "End User License Agreement" of the products you license, in the great majority of cases the guarantees are limited to replacement of the storage medium in case of defects, but in no case is compensation given for direct or indirect damages, loss of profits, etc... If as a result of a security bug in one of your products, not fixed in time by yourselves, an attacker managed to compromise crucial State systems, what guarantees, reparations and compensation would your company make in accordance with your licensing conditions? The guarantees of proprietary software, inasmuch as programs are delivered "AS IS", that is, in the state in which they are, with no additional responsibility of the provider in respect of function, in no way differ from those normal with free software.

On Intellectual Property:

Questions of intellectual property fall outside the scope of this bill, since they are covered by specific other laws. The model of free software in no way implies ignorance of these laws, and in fact the great majority of free software is covered by copyright. In reality, the inclusion of this question in your observations shows your confusion in respect of the legal framework in which free software is developed. The inclusion of the intellectual property of others in works claimed as one's own is not a practice that has been noted in the free software community; whereas, unfortunately, it has been in the area of proprietary software. As an example, the condemnation by the Commercial Court of Nanterre, France, on 27th September 2001 of Microsoft Corp. to a penalty of 3 million francs in damages and interest, for violation of intellectual property (piracy, to use the unfortunate term that your firm commonly uses in its publicity).

You go on to say that: "The bill uses the concept of open source software incorrectly, since it does not necessarily imply that the software is free or of zero cost, and so arrives at mistaken conclusions regarding State savings, with no cost-benefit analysis to validate its position."

This observation is wrong; in principle, freedom and lack of cost are orthogonal concepts: there is software which is proprietary and charged for (for example, MS Office), software which is proprietary and free of charge (MS Internet Explorer), software which is free and charged for (RedHat, SuSE etc Gnu/Linux distributions), software which is free and not charged for (Apache, OpenOffice, Mozilla), and even software which can be licensed in a range of combinations (MySQL).

Certainly free software is not necessarily free of charge. And the text of the bill does not state that it has to be so, as you will have noted after reading it. The definitions included in the Bill state clearly *what* should be considered free software, at no point referring to freedom from charges. Although the possibility of savings in payments for proprietary software licenses are mentioned, the foundations of the bill clearly refer to the fundamental guarantees to be preserved and to the stimulus to local technological development. Given that a democratic State must support these principles, it has no other choice than to use software with publicly available source code, and to exchange information only in standard formats.

If the State does not use software with these characteristics, it will be weakening basic republican principles. Luckily, free software also implies lower total costs; however, even given the hypothesis (easily disproved) that it was more expensive than proprietary software, the simple existence of an effective free software tool for a particular IT function would oblige the State to use it; not by command of this Bill, but because of the

basic principles we enumerated at the start, and which arise from the very essence of the lawful democratic State.

You continue: "6. It is wrong to think that Open Source Software is free of charge. Research by the Gartner Group (an important investigator of the technological market recognized at world level) has shown that the cost of purchase of software (operating system and applications) is only 8% of the total cost which firms and institutions take on for a rational and truly beneficial use of the technology. The other 92% consists of: installation costs, enabling, support, maintenance, administration, and down-time."

This argument repeats that already given in paragraph 5 and partly contradicts paragraph 3. For the sake of brevity we refer to the comments on those paragraphs. However, allow me to point out that your conclusion is logically false: even if according to Gartner Group the cost of software is on average only 8% of the total cost of use, this does not in any way deny the existence of software which is free of charge, that is, with a licensing cost of zero.

In addition, in this paragraph you correctly point out that the service components and losses due to down-time make up the largest part of the total cost of software use, which, as you will note, contradicts your statement regarding the small value of services suggested in paragraph 3. Now the use of free software contributes significantly to reduce the remaining life-cycle costs. This reduction in the costs of installation, support etc. can be noted in several areas: in the first place, the competitive service model of free software, support and maintenance for which can be freely contracted out to a range of suppliers competing on the grounds of quality and low cost. This is true for installation, enabling, and support, and in large part for maintenance. In the second place, due to the reproductive characteristics of the model, maintenance carried out for an application is easily replicable, without incurring large costs (that is, without paying more than once for the same thing) since modifications, if one wishes, can be incorporated in the common fund of knowledge. Thirdly, the huge costs caused by non-functioning software ("blue screens of death", malicious code such as virus, worms, and trojans, exceptions, general protection faults and other well-known problems) are reduced considerably by using more stable software; and it is well-known that one of the most notable virtues of free software is its stability.

You further state that: "7. One of the arguments behind the bill is the supposed freedom from costs of open-source software, compared with the costs of commercial software, without taking into account the fact that there exist types of volume licensing which can be highly advantageous for the State, as has happened in other countries."

I have already pointed out that what is in question is not the cost of the software but the principles of freedom of information, accessibility, and security. These arguments have been covered extensively in the preceding paragraphs to which I would refer you.

On the other hand, there certainly exist types of volume licensing (although unfortunately proprietary software does not satisfy the basic principles). But as you correctly pointed out in the immediately preceding paragraph of your letter, they only manage to reduce the impact of a component which makes up no more than 8% of the total.

You continue: "8. In addition, the alternative adopted by the bill (i) is clearly more expensive, due to the high costs of software migration, and (ii) puts at risk compatibility and interoperability of the IT platforms within the State, and between the State and the private sector, given the hundreds of versions of open source software on the market."

Let us analyze your statement in two parts. Your first argument, that migration implies high costs, is in reality an argument in favour of the Bill. Because the more time goes by, the more difficult migration to another technology will become; and at the same time, the security risks associated with proprietary software will continue to increase. In this way,

the use of proprietary systems and formats will make the State ever more dependent on specific suppliers. Once a policy of using free software has been established (which certainly, does imply some cost) then on the contrary migration from one system to another becomes very simple, since all data is stored in open formats. On the other hand, migration to an open software context implies no more costs than migration between two different proprietary software contexts, which invalidates your argument completely.

The second argument refers to "problems in interoperability of the IT platforms within the State, and between the State and the private sector" This statement implies a certain lack of knowledge of the way in which free software is built, which does not maximize the dependence of the user on a particular platform, as normally happens in the realm of proprietary software. Even when there are multiple free software distributions, and numerous programs which can be used for the same function, interoperability is guaranteed as much by the use of standard formats, as required by the bill, as by the possibility of creating interoperable software given the availability of the source code.

You then say that: "9. The majority of open source code does not offer adequate levels of service nor the guarantee from recognized manufacturers of high productivity on the part of the users, which has led various public organizations to retract their decision to go with an open source software solution and to use commercial software in its place."

This observation is without foundation. In respect of the guarantee, your argument was rebutted in the response to paragraph 4. In respect of support services, it is possible to use free software without them (just as also happens with proprietary software), but anyone who does need them can obtain support separately, whether from local firms or from international corporations, again just as in the case of proprietary software.

On the other hand, it would contribute greatly to our analysis if you could inform us about free software projects *established* in public bodies which have already been abandoned in favour of proprietary software. We know of a good number of cases where the opposite has taken place, but not know of any where what you describe has taken place.

You continue by observing that: "10. The bill demotivates the creativity of the peruvian software industry, which invoices 40 million US\$/year, exports 4 million US\$ (10th in ranking among non-traditional exports, more than handicrafts) and is a source of highly qualified employment. With a law that incentivates the use of open source, software programmers lose their intellectual property rights and their main source of payment."

It is clear enough that nobody is forced to commercialize their code as free software. The only thing to take into account is that if it is not free software, it cannot be sold to the public sector. This is not in any case the main market for the national software industry. We covered some questions referring to the influence of the Bill on the generation of employment which would be both highly technically qualified and in better conditions for competition above, so it seems unnecessary to insist on this point.

What follows in your statement is incorrect. On the one hand, no author of free software loses his intellectual property rights, unless he expressly wishes to place his work in the public domain. The free software movement has always been very respectful of intellectual property, and has generated widespread public recognition of authors. Names like those of Richard Stallman, Linus Torvalds, Guido van Rossum, Larry Wall, Miguel de Icaza, Andrew Tridgell, Theo de Raadt, Andrea Arcangeli, Bruce Perens, Darren Reed, Alan Cox, Eric Raymond, and many others, are recognized world-wide for their contributions to the development of software that is used today by millions of people throughout the world. On the other hand, to say that the rewards for authors rights make up the main source of payment of Peruvian programmers is in any case a guess, in particular since there is no proof to this effect, nor a demonstration of how the use of free software by the State would influence these payments.

You go on to say that: "11. Open source software, since it can be distributed without charge, does not allow the generation of income for its developers through exports. In this way, the multiplier effect of the sale of software to other countries is weakened, and so in turn is the growth of the industry, while Government rules ought on the contrary to stimulate local industry."

This statement shows once again complete ignorance of the mechanisms of and market for free software. It tries to claim that the market of sale of non-exclusive rights for use (sale of licences) is the only possible one for the software industry, when you yourself pointed out several paragraphs above that it is not even the most important one. The incentives that the bill offers for the growth of a supply of better qualified professionals, together with the increase in experience that working on a large scale with free software within the State will bring for Peruvian technicians, will place them in a highly competitive position to offer their services abroad.

You then state that: "12. In the Forum, the use of open source software in education was discussed, without mentioning the complete collapse of this initiative in a country like Mexico, where precisely the State employees who founded the project now state that open source software did not make it possible to offer a learning experience to pupils in the schools, did not take into account the capability at a national level to give adequate support to the platform, and that the software did not and does not allow for the levels of platform integration that now exist in schools."

In fact Mexico has gone into reverse with the Red Escolar (Schools Network) project. This is due precisely to the fact that the driving forces behind the Mexican project used license costs as their main argument, instead of the other reasons specified in our project, which are far more essential. Because of this conceptual mistake, and as a result of the lack of effective support from the SEP (Secretary of State for Public Education), the assumption was made that to implant free software in schools it would be enough to drop their software budget and send them a CD ROM with Gnu/Linux instead. Of course this failed, and it couldn't have been otherwise, just as school laboratories fail when they use proprietary software and have no budget for implementation and maintenance. That's exactly why our bill is not limited to making the use of free software mandatory, but recognizes the need to create a viable migration plan, in which the State undertakes the technical transition in an orderly way in order to then enjoy the advantages of free software.

You end with a rhetorical question: "13. If open source software satisfies all the requirements of State bodies, why do you need a law to adopt it? Shouldn't it be the market which decides freely which products give most benefits or value?"

We agree that in the private sector of the economy, it must be the market that decides which products to use, and no state interference is permissible there. However, in the case of the public sector, the reasoning is not the same: as we have already established, the state archives, handles, and transmits information which does not belong to it, but which is entrusted to it by citizens, who have no alternative under the rule of law. As a counterpart to this legal requirement, the State must take extreme measures to safeguard the integrity, confidentiality, and accessibility of this information. The use of proprietary software raises serious doubts as to whether these requirements can be fulfilled, lacks conclusive evidence in this respect, and so is not suitable for use in the public sector.

The need for a law is based, firstly, on the realization of the fundamental principles listed above in the specific area of software; secondly, on the fact that the State is not an ideal homogeneous entity, but made up of multiple bodies with varying degrees of autonomy in decision making. Given that it is inappropriate to use proprietary software, the fact of establishing these rules in law will prevent the personal discretion of any state employee from putting at risk the information which belongs to citizens. And above all, because it

constitutes an up-to-date reaffirmation in relation to the means of management and communication of information used today, it is based on the republican principle of openness to the public.

In conformance with this universally accepted principle, the citizen has the right to know all information held by the State and not covered by well- founded declarations of secrecy based on law. Now, software deals with information and is itself information. Information in a special form, capable of being interpreted by a machine in order to execute actions, but crucial information all the same because the citizen has a legitimate right to know, for example, how his vote is computed or his taxes calculated. And for that he must have free access to the source code and be able to prove to his satisfaction the programs used for electoral computations or calculation of his taxes.

I wish you the greatest respect, and would like to repeat that my office will always be open for you to expound your point of view to whatever level of detail you consider suitable.

Cordially,
DR. EDGAR DAVID VILLANUEVA NUÑEZ
Congressman of the Republica of Perú.

Source: http://linuxtoday.com/news_story.php3?itsn=2002-05-06-012-26-OS-SM-LL

Appendix 4. Letter to Microsoft from SchoolNet Namibia



SchoolNet Rebuffs M\$FT

An Open Letter To:
George Ferreira,
Regional Manager,
Microsoft South and East
Africa

Dear George, my whilom philanthrope;

On the wild notion of Microsoft being a partner in educational development with SchoolNet Namibia for a measly US\$ 2,000 - passably, a succès de scandale, given the present climate...

Microsoft weather forecast: "We at Microsoft are committed to working with institutions while harnessing technology to better fulfil their missions of preparing intellectually and technically competent citizens for success in the Information Age"

And further:

"At Microsoft, we foresee a world where all children will be using mobile, digital devices to enhance the learning process both at home and school...in a Microsoft Anytime Anywhere Learning (AAL) world, every student will have their own laptop computer."

Tony Roberts' [Computer Aid International] weather forecast:

"In the UK alone over one million computers are buried in landfill sites every year - bespoiling the countryside and damaging the environment ... worldwide, 56 million computers are thrown away every year."

Joris Komen's [SchoolNet Namibia] weather forecast:

"Professor Steve Molyneux, the Microsoft Chair of Advanced Learning Technologies at the University of Wolverhampton in the UK, has secured some 7 million pounds for a short-term Microsoft-oriented research project; in contrast, Namibia's economy has enormous difficulty raising 7 million pounds required to provide self- sustaining ICT access and infrastructure to every single school, nation-wide. This is the calamitous comedy of development."

David A. Wheeler's [weather forecast](#):

"... according to Robert Kramer of CompTIA (Computer Technology Industry Association), political leaders everywhere from California to Zambia are considering legislating a preference for Open Source software use; he counted at least 70 active proposals for software procurement policies that prefer OSS/FS in 24 countries as of October 2002 ... clearly this demonstrates significant positive interest in OSS/FS from various governments."

Given these contrasting contexts, dare I hazard to guess that the international perspective as described by David A. Wheeler's excellent [report](#) on Open Source software may help you rationalise the *current* dilemma facing Microsoft in its purportedly philanthropic efforts in Namibia? I argue that your recent efforts are simply ill-conceived ploys to arrest the increasingly common view that such philanthropy does little to obscure Microsoft's solipsism. SchoolNet's view is that software licensing is a gadfly all consumers and developers can brush aside with a little co-operation and a common adherence to the punk rockier <grin> part of IT: Do It Yourself.

Critically, one fundamental, oft overlooked, issue, is the fact that while "free" Microsoft

software offers may well be seen as generous, they are effectively limited to lower quality PC technologies which are NOT bound by "global PRELOAD OEM Agreements" enforced with Tier 1 computer manufacturers such as Compaq, Acer, and Dell, to name but a few. Without exemption from such Preload OEM agreements, Microsoft donations (and Open Source solutions) must either be installed on older or lower quality machines, or must first be paid for - since these costs are embedded in the Microsoft-Manufacturer OEM Agreement - and then overwritten with 'free' or open source wares, as we inevitably do, on the high quality computers. Such entrenched OEM deals sap Microsoft's offer of any genuine, or even effective, generosity !!

SchoolNet Namibia has recently been through just such a dilemma with Microsoft. To illustrate:

George Ferreira wrote:

Subject: RE: Microsoft Schools and cost of laptop preloads

Date: Mon, 14 Oct 2002 10:51:56 +0200

Message-ID:

<28E2969FC8666944ACE963D31413975D023EE7BF@job-msg-01.africa.corp.microsoft.com>

<SNIP>

We would like to set up a meeting with you to finalize the implementation of the Terminal Service solution at the schools you have mentioned below. From our side we are ready to deploy together with your nominated technical candidate so that he may learn the implementation of technology.

Regarding the Acer Notebooks, Acer has a global OEM agreement with Microsoft Corp, in which they have to report all desktops or notebooks being sold. Due to the series of the Notebook which you are taking it comes standard with an O/S being primarily Windows XP Pro.

Please Accept that I cannot go and interfere in Comparex way of business...

</SNIP>

Microsoft undertook to provide gratis licensed operating system and Office Pro application software for up to 100 laptop computers in the SchoolNet - AED BESII (USAID funded) programme in Namibia. Originally, Microsoft offered old MS Millennium stock to serve this purpose, but following our request to upgrade to an XP Pro or MS 2000 equivalent, and given the insistence of our development partners, Microsoft agreed to this change. Following a move to provide laptops with Intel, rather than inferior ISi630 processors, we were fortunate to secure a really good deal on (tier 1) Acer laptops (US\$600 below normal retail), but with the dilemma of not being able to avoid Preloaded OEM (XP PRO), as Acer dealers such as Comparex are contractually bound by Microsoft.

Microsoft is now, post facto, unwilling to cover the cost of this preloaded MS operating system, which will set NetDay/SchoolNet back some US\$ 9,000, but will still provide 50 gratis licenses for Office Pro, locally valued at some US\$ 2,000. Unfortunately, this license package requires us to load Office Pro on each of the 50 laptops, without any documentation being made available to the recipients of such application software.

From the outset of our consultative meetings with Microsoft, it was made abundantly clear that SchoolNet and NetDay would be happy to provide Microsoft with an opportunity to develop a potential alternative to our viable Open Source LTSP refurbished LAN and stand-alone Linux-PC solutions for schools and teachers in Namibia and further afield in Africa. The original understanding was that each of five pilot schools would be furnished with a 20 refurbished diskless thin-client computer + contemporary server laboratory, at Microsoft's cost, to show and tell Microsoft's extraordinary commitment to affordable LAN computer technologies for education in Namibia.

At our consultative meeting at Microsoft offices on Thursday 17 October, it became

imminently clear that the development of a potential Microsoft alternative to our viable Open Source LTSP refurbished LAN solution at five pilot schools in Katutura would incur considerable cost for SchoolNet, given the revised understanding that Microsoft would not be paying for the refurbished hardware, but would only provide the software platform at some unknown Research & Development (!!) cost resulting from co-opting expertise from other third-party Microsoft partners.

Such a change of direction would result in SchoolNet having to pay out in the order of US\$ 4,500 per school to provide Microsoft with a significant educational branding opportunity in Namibia, coupled with free technical support service obligated by SchoolNet to all its school clients, in an extraordinary deviation from SchoolNet's commitment to provide skills development, technical support and helpdesk services to its Open Source LTSP LAN school clients and Linux-PC teacher clients.

Based on your earlier blatant assertions, Microsoft is very keen on harnessing major publicity along the lines of "Microsoft replaces Linux at SchoolNet Namibia". I'm afraid that is simply not going to happen. I have, from the very beginning made it VERY clear that SchoolNet has NO desire to REPLACE Linux with Microsoft, but would be happy to accommodate an AFFORDABLE Microsoft diskless refurbished thin-client LAN alternative for potential use in areas where Microsoft distributors would be able to provide technical support to such proprietary Microsoft LAN alternatives.

I should, however, stress that SchoolNet has no desire to FUND Microsoft in such an endeavour, to the tune of US\$22,500 for pilot [Microsoft-driven] school hardware + US\$ 9,300 for laptop MS OS, in exchange for a paltry US\$2,000 worth of proprietary OFFICE PRO application software!

I would like to express my sentiments regarding the way SchoolNet, and through it, 1545 schools in Namibia might, remotely, have been duped for a paltry US\$ 2,000. I do so, since you likely still see SchoolNet Namibia as a velitation of some negligible nuisance value.

Given recent developments in Peru <see Dr EDGAR DAVID VILLANUEVA NUÑEZ's breath-taking [correspondence](#)>, I'm actually afraid to say that SchoolNet has the tenacity of a DDT-resistant Formica Ant.

SchoolNet provides strategies, technologies and network implementations that solidify Namibia's nascent knowledge economy. Our products bespeak a great opportunity for replication, and promise to narrow the digital divide in the majority of developing countries in Africa. A bit big to swallow? Chew it -- DDT is another flavour of global corporate partnership in development <grin>.

Earlier this year, South Africa's President Thabo Mbeki announced in his state-of-the-nation speech to Parliament that Microsoft would provide free software for all of South Africa's 32,000 government schools. Subsequently, in apparent Zeitgeist, Microsoft Africa pledged to try to do the same for Namibian schools, through SchoolNet, in exchange for direct branding opportunities with some of SchoolNet's educational projects.

A big multi-national company trying to shrink the digital divide by giving the kinds of things that are purportedly easy for it to give amounts to a philanthropy properly called perverse. While corporate generosity should ordinarily be worthy of praise, recipients must approach it with utmost suspicion nevertheless. At the risk of solecism, I suggest that offerings in the vein of Microsoft's philanthropy belie good corporate citizenship to the advantage of key business in most developing African countries - lucrative Government enterprise licenses! Viva WSSD, viva WSSD Global Partnership Outcomes as seen through the eyes of the Vandana Shivas of the world!

As rightly pointed out by www.bridges.org earlier this year, the real issue for schools is not the cost of proprietary software licensing, but the challenges and costs of deployment,

maintenance and skilled human resources of sustainable ICT infrastructure at often very remote schools. Conventional Microsoft products have rapid product cycles and quick obsolescence, along with expensive long-term maintenance and support implications. In the few urban settings in Namibia, there are probably enough MCSE paper tigers to get some affordable, albeit dubious, maintenance and support. However, such probability declines as one travels into remote areas of Namibia.

It is highly unlikely that Microsoft will ever respond to this missive, unless of course it perceives SchoolNet to be a pest as swatable as the Peruvian government. Given these circumstances, and SchoolNet's own special brand of Open Source Zeitgeist, I see no further reason for SchoolNet to pursue Microsoft philanthropy in Namibia.

Our well-developed relationships with those international development, government, parastatal and local corporate participants which support the roll-out of ICTs in education in Namibia will see us through delivering a tried, tested and well-supported open-source LTSP LAN solution to some 600 odd (mostly secondary) Namibian schools in next 2 years (as well as countless schools elsewhere in Africa), coupled with various value-adds such as gratis internet access, reduced telecom costs, wireless technologies, solar technologies and open source educational content and administrative tools - a truly miraculous gem of an educational ISP cost-benefit model for replication throughout Africa - with an absolutely clear conscience!

Shafted for a paltry US\$ 2000? Not in your wildest linga-longer dreams!

Yours faithfully

Joris Komen

Founding Executive Director, SchoolNet Namibia and NetDay Namibia.

[SchoolNet Namibia](#)



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