

Chapter 12

Free Software and Social and Economic Development

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Introduction

We live in a period that has become known as the “information age,” in which we have the possibility of interacting with new technologies that establish new forms of communication between people and between people and things. We are experiencing a revolution, at the center of which are the information and communication technologies.

As a result of this, we are also witnessing profound alterations in our social, political and economic relations, heightened by the permanent expansion of communications hardware, software and applications that promise to improve economic results, provide new cultural impulses and incentivate personal improvement through the use of the technologies for educational practice.

Far from fulfilling that promise, the cyberspace or the Information Society—which is materializing today with the growth of the Internet—has instead increased the inequality between those who have and those who do have access to the benefits of the network.

For those of us who want a better world, understanding and reflecting on this new level of capitalist accumulation and examining the contradictory potentials of this new period in history, are fundamental factors for updating both are theoretical concepts and our practices as public managers.

Our Life in Cyberspace

The thus far dominant technologies for the supply of information, communication, entertainment and ways of doing business are being replaced by a second technological generation using broad instead of

narrow band. The objective is to supply a greater volume of multi-modal (sound, image, text) and multiplexed information simultaneously, which can be transmitted at increasingly higher speeds. Digital codification is the process that makes it possible to converge information stored on a computer (data), cultural products (music, films, books), telecommunications and radio and television transmission processes in one and the same format. This converging technology combines technological capacities that were once separate, meaning that the telephone, the computer, the TV and the sound system will be operating as one unit—a unit that is much more powerful and with a much greater presence in our lives than we could imagine. The Internet is the materialization of this new scenario, fuelled by the efforts of manufacturers, investors, academic researchers, hackers and government policies. Before the advent of the network of networks (the Internet), traditional communications were divided into two categories: one to one or one to some (fax and telephone) and one to many (TV, radio, the press and cinema). In the new environment, in addition to these categories, the possibility of communication of the many-to-many type has also emerged. This not only brings access to greater quantities of information, but also transformation of the economic and social relations—which interact in all branches of capitalist production—in an endeavour to adapt to the “more economic” way of doing business and new form of relations with people. New forms of relationships emerged, and also new communities without precise geographic definition—new producers, new distributors and new consumers with a global and no longer merely local or regional positioning. These new economic, political and social relations—we can call them virtual—are faceless and territory-less. They are now part of our daily routine—our life in Cyberspace.

Digital Exclusion

In the new economic order resulting from the decline of the manufacturing industries and the expansion of the services sector, we have witnessed the birth of the information age and its growing importance as a sources of products, growth and the creation of wealth. “Moving bits instead of atoms is a lot cheaper.” The value of knowledge as a “universal good” has forfeited space to the marketing of knowledge. Knowledge/information has become just one more product in the

globalized market. This new technological level of capitalist accumulation has ramifications in terms of employment patterns, contributing decisively to the high degree of obsolescence of jobs in the production industries and, more acutely now, in the services sector. New social agents, new forms of work relationships, new professions are emerging. The possibility of locating production closer to cheaper sources of labour gives rise to new international labour divisions, new forms of control and increasing competition. Capital surfs the cyberspace in search of new business opportunities and new markets, with greater productivity. Brazil and some of the peripheral countries are regarded by those who control the international market as being of vast potential for the consumption of proprietary technologies and contents from the countries of the Northern Hemisphere. This phenomenon reduces us to the role of mere consumers of technology and contents and not protagonists in the new global scenario. We enter the digital scenario as subordinates to the interests of the policies of the central countries and global corporations. Our scientific, technological and economic development also plays a subordinate role, and at the social level, digital exclusion is increasing instead of decreasing. Our countries and regions are becoming even poorer in economic terms and a new poverty dimension is emerging—digital information and knowledge poverty. “The exclusion of people from active participation in, the privileges of, and responsibility in, the information society is perhaps greater than exclusion from access to the privileges of the ruling classes they were subject to in the past.” The most visible example of this exclusion is that almost one half of the country have never had their own telephone line and only some 5% of Latin Americans have home access to the Internet.

Digital Consumers, Proprietary Software

The trend towards universal access of the population to the worldwide computer network with technologies we do not master and contents we have no influence on guarantees neither digital democratization nor the socialization of the economic and social benefits provided by the technological advances. On the contrary, we are experiencing a heightening of the inequalities and technological dependence on the central countries. “In the concrete field of information technologies, an age-old phenomenon is being repeated since

the 1980s: knowledge, transmitted via a written language code, is being zealously guarded by some, who use it to maintain a power structure that has survived over the centuries. In the 1960s and 1970s, the development in information technologies was due, in part, to the specialists sharing their knowledge. Computer programming codes were shared, meaning that the advances achieved by one were used by others to improve the programme in question. Today, a large part of the computer applications we use has a secret code. They belong to their proprietors and we cannot copy them or share their development. Only the proprietors can modify and improve them. If that is in their interest, of course.”[1] The high cost of the software used in computers and the barrier to free scientific and technological knowledge imposed by proprietary licences have hindered and even prevented some regions of the world from benefiting from this revolution in order to provide better quality of life for their citizens.

The Free Software Movement and a New Paradigm for Our Development

In this new scenario, in which the Internet and the information and communication technologies assume a vanguard role, new possibilities of social intervention and new economic relations are also emerging. We can create new spaces for the practice of citizenship and democracy, new spaces for educational practices and bring our technological, scientific and economic development up to new heights. To this end, we must put an end to dependence and subordination and actively develop a new model, with the help of public policies and alternative practices. Some important initiatives are being implemented to invert the dominant trend, offering alternatives with a view to ending digital exclusion. One of the most important of these initiatives is the Free Software Movement, which is building a concrete alternative to the hegemonic model and has proved to be more efficient in scientific terms and more generous at the social level. “For a number of years a group of specialists has been working with the aim of sharing their work. They communicate via the Internet and work on joint projects, no matter what part of the world they are in. They have developed a technology that is so solid that institutions and corporations such as the Government of Brazil, the Regional Government of Extremadura, Google, AOL, Time Warner, Amazon and others use it without

problems. We are talking about “free software applications,” which can be legally copied. Improvements to a programme are made available to all.”¹

Due to the solidarity aspect—i.e. the fact that it helps open up knowledge to all citizens, that we can adapt computer programmes to each individual need without requiring the permission of large corporations, that in the 21st century our regions and countries can take a leap forward towards technological equality, that we can use, develop and investigate state-of-the-art technologies in real time, with the state of development of first world technology—this new paradigm is more in line with our development interests. This movement, supported by thousands of autodidacts working in cyberspace—the hackers (not to be confused with crackers),— is shared by our young graduates and local companies and offers us the possibility of developing our technological autonomy and independence without the risk of isolation from the international community. On the contrary, we will be in perfect synchronization, with a high degree of knowledge sharing. Our concrete experience with the Brazil Free Software Project² and the Brazilian government initiatives has shown the social amplitude and the strategic importance of having public government policies in similar projects. Instead of sending billions of dollars for licences for the use of proprietary software and protected technology to the countries of the North, as we do today, we can transfer those resources to the internal market and further the development of the local economy and the modernization of other sectors of our economy. We must develop a public policy of incentives for the creation and strengthening of local and regional companies that operate in this new paradigm of the information technology market. With the information technology products and services—free from the restrictions imposed by the licences of the software giants—we will make our digital inclusion more accessible and more adapted to our reality, we will boost our local and regional economies, we will make use of the local knowledge coming from our universities and schools and we will share our latest-generation technological knowledge in real time with the other countries on the planet.

¹ Regional Government of Extremadura—text on the launch of GNU/Linux

² A non-governmental initiative: www.softwarelivre.org

What is Free Software?

Free Software is computer programmes written in cooperation by an international community of independent programmers communicating via the Internet. They are hundreds of thousands of hackers who reject all associations with “security breakers.” “That is a confusion on the part of the mass media,” says Richard Stallmann, Chairman of the Free Software Foundation.³ These software developers reject the pejorative meaning of the term hacker and use it as meaning “some who loves programming and who likes to be capable and inventive.” In addition to this, the programmes are handed over to the community an open source, accessible code, thus making it possible that the original ideal can be developed and perfected further by the community. In conventional programmes, the programming code is secret and the property of the company that developed it, so that it is almost impossible to decipher the programming language. What is at stake is the control of technological innovation. For Stallmann, “free software is a question of freedom of expression and not just business.” Today there are thousands of alternative programmes developed in this way, with a user community of millions around the world.

Software can only be considered free if it guarantees the four fundamental liberties⁴: a) freedom to use the programme for whatever purpose; b) freedom to modify the programme and adapt it to one’s needs (to make this liberty possible, one must have access to the source code, for modifying a programme is very difficult without the code); c) freedom to distribute copies, both free and at a fee; d) freedom to distribute modified versions of the programme, so that the whole community can benefit from the improvements. The most high-profile example of software following this concept is the operating system GNU/Linux, an alternative to Windows developed and enhanced by thousands of co-programmers around the globe. For this reason, its quality has been proven to be superior to that of the software industry rival.

³ www.fsf.org

⁴ <http://www.gnu.org/philosophy/free-sw.html>

A New Form of Production

The main leaders and protagonists of the movement are the hackers—very capable programmers who have gained notoriety for having developed an important programme or useful tool for the movement. The most well known are Richard Stallmann, the head of the movement, and Linus Torvalds, who wrote the kernel for the GNU/Linux operating programme. These “cyberproletarians” who make life hell for Bill Gates, work mainly on a voluntary basis and are responsible for more than 80% of the work effort that has gone into the thousands of free programmes used in the world. The reasons why a hacker may develop a programme on a voluntary basis are the most varied possible: the quest for fame and recognition, the desire to create something useful, indignation at Bill Gages, insomnia... or all of these together. Less than 20% of the free programmes are developed by programmers working in companies with conventional structures. Another reason for the optimal quality of the products is their development in cooperation. From the conception of the software project through all production states, a team of programmers, from all around the world, is very actively involved, communicating via the Internet. All documentation and codes are made available without secrecy, guaranteeing development 24 hours a day, 7 days a week. Another important feature is that unfinished and incomplete products are made available to “user groups” and to any interested party for assessment purposes. The user groups are made up of professionals from other areas, as well as programmers, who detect bugs, suggest modifications and request new functionalities. The product is thus constantly improved. They are not like proprietary products, which, once completed, then seek consumers in the market. They are products that seek to be of use to the community, made to order to attend to already existing needs. Another important lesson to be learnt from the movement is the creation of distributors. In order to undermine the blockage of distribution of these programmes, several international distributors were created that are responsible for the “packaging” of the programmes copied onto CDs and the instruction manuals and for providing support services to the users. It is they who place the “packs” in the shops, making life easier for the users and avoiding that we have to spend hours downloading the programmes from the net to able to set up our computers. This is one form of doing business in the world of free software, given that selling the licence is prohibited.

The largest distributors are: SuSE (Germany); Slackware, Red Hat and Caldera (United States), Conectiva (Brazil), TurboLinux (Asia), Mandrake (France) and Caixa Mágica (Portugal). One should point that the largest of these distributors does not even have 300 employees. There is another distributor which is preferred by the hackers and the majority of public administrations, for it is not a company but a non-profit organisation: Debian.⁵ Debian has approximately one thousand voluntary programmers selected in a rigorous technical “selection process” who assume a societal commitment through a “social contract,” a kind of code of ethics for the cyber community. It is the technically most stable form of free software distribution, used by various companies and in “high availability” government projects.

Threats to Innovation and Freedom of Expression

Some of the initiatives, in the technological and legal spheres, of interest to the large monopolistic corporations in the information technologies industry may restrict innovation and the individual and collective liberties of the citizens.

Under the pretext of “updating” the national and international laws in view of the growth of the Internet and digital works, these initiatives designed to extend the reach of the copyright laws for digital works in reality can amount to centralized and totalitarian control by the large corporations over the rights of the users and producers of digital works and impede innovation.

A Technological Plan against Liberties

A consortium⁶ made up of Microsoft, Intel, AMD, IBM, Sony and other giants is developing the TCPA (Trusted Computing Platform Alliance), which is already in an advanced phase. This technological alliance is producing chips that can be monitored and controlled permanently through the Internet, even without the authorisation of the users of the computers and other electronic equipment. Using the argument that they protect “intellectual property,” this new genera-

⁵ www.debian.org

⁶ www.againsttcpa.com/tcpa-members.html

tion of chips can restrict the installation of new computer programmes, the playing of a music CD, a DVD, electronic games, digital books and even the exhibition of certain websites.

The “ex-owners” of the equipment will require prior authorization—or have to use commands introduced via the Internet—for the large corporations in the consortium to be able to run whatever they want on their computers. In this new scenario, for example, it is possible that a person who buys a music CD will be only to play it three times on their computer. If they want to play it any more, they will have to pay. Or a user may purchase a film on DVD that can only be watched at times that do not compete with certain “prime time” television hours, or for which the user’s credit card is debited every time it is played. But above all, new works produced independently or free computer programmes and/or those developed by companies outside the consortium will require an approval so that they can be used by the “ex-owner” of the electronic equipment (computer, DVD player, etc.). This development is also a real threat to the development of free software and to technological innovation and freedom of expression.

We work with a new logic that allows the execution, copying, modification and distribution of a new programme derived from an original. Imagine what it would be like if, in each software development process, we were dependant on centralised authorizations and the opinions of lawyers to run a programme, a new modified version or the copies authorized by the free licences. Many users have already tasted the bitter taste of this restriction of individual liberties. Even without the new TCPA generation chips, Windows XP users, for example, have already experienced “Palladium,” which is a form of software control developed by the monopolist industry to impede users from running non-authorized copies of music, videos or applications on their new operating system. Even if you want change some of your computer’s hardware components—such as the video card or modem—the users of this new operating system require centralized authorization from MS. Otherwise the new component will not work. It so happens that Palladium—like any other software applications—has already been easily decodified by young hackers, who have given back part of the lost freedoms to the users of the new MS operating system. It will, however, be infinitely more difficult to overcome the restrictions imposed by TCPA (at the hardware level) plus Palladium.

A Legal Plan against Liberties

At the legislative level, this same initiative has also been working with the aim of criminalizing developers of technological and scientific applications that endeavour to produce alternatives to the restrictions imposed by the proprietary technology. In the USA the so-called Digital Millennium Copyright Act (DCMA) is already in force. It severely punishes those who dare to ignore the restrictions. The DCMA is one of the United States laws included in the FTAA package, meaning that such laws can be extended to countries that have signed the treaty. The European Union is also under pressure from powerful lobbyists who are trying to impose a clone of this anti-democratic law and the patentability of software upon the Member States and the European Parliament. This is legislation that is outlawing citizens, based on the extension of laws which were born out of industry regulations, i.e. for material products, and which may have made sense at a certain time to immaterial (digital) products with a (re)production cost of practically zero. This criminalization does not make sense in the new information society. With the argument that one is protecting the commercial interests of digital contents, the rights of the citizens to the legitimate use of materials with their copyright guaranteed under the industrial legislation are being taken away. We have the right to lend and borrow printed books. We have the right to tape or copy a music CD or a video tape for non-commercial purposes. We have the right to partially copy a book in a library or borrowed from a friend to increase our knowledge on certain subjects. However, these rights are threatened in the digital sphere. "Cyber rights" must not have totalitarian and fascist preconditions. These laws and initiatives in the technological fields directly affect all individuals, authors and programmers and should not be dealt with only from the perspective of the monopolistic industry giants.

Brazil at the 1st World Summit on the Information Society

The first phase of the World Summit on the Information Society,⁷ an official UNO event that took place on 11 to 13 December 2003 in Geneva, Switzerland, was marked by the profound differences between the interests of

⁷ <http://www.itu.int/wsis/>

the rich countries and those of the developing and poor countries led by Brazil, India, South Africa, Egypt and Argentina.

Sharing Knowledge

One of the main controversies at the Geneva Summit revolved around the Free Software alternative and knowledge sharing as instruments of digital inclusion, innovation incentivisation and technological development. Brazil and India led the bloc that argued that emphasis on the sharing of technological know-how between peoples was more in line with the development of a democratic and inclusive Information Society and that it was the only way for the developing countries to close the technological gap.

The Brazilian motion was contested by the group led by the United States, which presented as an alternative emphasis on the consolidation of the intellectual property laws on digital works, an increase in the penalties for and criminalization of users that attempt to copy and share freely through the Internet. The majority of the governments of the rich countries, led by the USA, manifested their interest in maintaining absolute and egoistic control over the technology by protecting themselves with the strengthening of the intellectual property laws.

In addition to being a clearly protectionist policy, this position proposes an information society without information and without shared knowledge. Indeed, a disinformation society. For the poor and developing countries all that would remain is the role of consumers of “canned” technological products produced in the Northern Hemisphere, thus depriving our universities, research centres, private companies, governments and populations of having access to and mastering the technology that is being (or should be) disseminated.

Multilateral, Transparent and Democratic Governance of the Internet

At the 1st Summit on the Information Society, Brazil was one of the countries that highlighted the need for a multilateral, transparent and democratic form of governance of the Internet.⁸ A more in-depth debate of this question became a key component of the summit.

⁸ <http://www.softwarelivre.org/news/3126>

The debate on the “democratization of the Internet governance” is a very relevant one. The group led by Brazil argues that the control of addresses and names and the management of the Internet should be carried out on a tripartite basis (governments, civil society and the private sector).

Currently, the Internet Corporation for Assigned Names and Numbers (ICANN), the body responsible for establishing the rules for the use of the Internet on a worldwide basis, is unilaterally subordinate to the United States government.

Digital Solidarity Fund

The African countries and a resolution from the “World Summit of Cities and Local Authorities on the Information Society,”⁸ held in Lyon, France one week before the Geneva summit, came out in favour of the creation of an International Digital Solidarity Fund. The move is being supported by Brazil and the developing countries bloc. The resources for the fund could come from the taxation of a small part of the profits from the international transactions of the information technology companies or from voluntary contributions.

The representatives of the countries led by the United States want nothing to do with the fund. Not even if it were a voluntary, non-governmental fund. They argue that the “market” should regulate digital inclusion. In other words, if you have the money to buy from the monopolistic mega-corporations from the Northern Hemisphere, you will have the chance to participate in the information society. The rest will just have to join the long line of the digitally excluded.

In Tunis, for a More Inclusive Information Society

At the Geneva summit, there was a dubious and contradictory outcome in terms of these issues, the result of the tough diplomatic negotiations. But the results of the Geneva summit are far from reflecting and identifying new concepts for the Information Society or any type of innovative thought. It was a summit dominated by a “conservative reaction” approach to the new possibilities provided by the digital rev-

⁹ <http://www.cities-lyon.org>

olution and the Internet—a reaction against innovation. The debate must continue and we must make both civil society and our governments more aware of these issues in the run-up the second round of the summit in Tunis in 2005. There is a lot to be done.

The results and benefits of the digital revolution must be regarded as human rights and no longer as a mere instrument for the accumulation and concentration of wealth. The digital revolution is on our side!