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Author(s)	Thompson, M
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The Democracy of FLOSS: Software Procurement under the Democratic Principle

Marcelo Thompson*

IS IT WRONG TO ALLOW IDEOLOGY to pervade political decisions on software procurement, or is it inevitable that governments profess a particular conception of the good with respect to every aspect of societal life? This article advances a normative framework, based upon a broad conception of the democratic principle, to advocate that Free/Libre Open Source Software (FLOSS) be adopted and have its development encouraged and carried out by democratic governments. More than an aspiration, formal and substantial reasons ground the understanding advocated in this article that striving towards comprehensive FLOSS policies is a duty of every state that purports to be a democratic one. After a brief introduction of my propositions in Part 1, and a conceptualization of FLOSS in Part 2, Part 3 describes different governmental FLOSS policies around the world. These policies, I show, are often based upon normative values that, beyond stereotypes, would be better assessed within a thorough conception of the democratic principle. Part 4 portrays the Brazilian government's particular history of expressly linking FLOSS policies to the democratic principle. Part 5 analyzes different dimensions of the democratic principle in the information age. Part 5 begins by conceptualizing the democratic principle in light of its relation with technology, in general, and FLOSS, in particular, and then evaluates the importance of FLOSS for the fulfillment of cultural, ethical, political, and economic dimensions of the democratic principle. In Part 6, the article concludes with a particular understanding of the commitment assumed in the Tunis round of the World Summit on the Information Society and reinforces this vision of the deontological character of governmental policies towards FLOSS.

EST-IL PRÉJUDICIABLE DE PERMETTRE À UN IDÉOLOGIE d'influencer des décisions de nature politique en matière d'approvisionnement de logiciels, ou est-il inévitable que les gouvernements professent une conception particulière de ce qui est juste en ce qui concerne tous les aspects de la vie sociale ? Dans cet article, on propose un cadre normatif, fondé sur une vaste conception du principe démocratique, à l'effet de revendiquer l'adoption du Free/Libre Open Source Software (FLOSS) et d'autoriser les gouvernements démocratiques à encourager son développement et son application. Plus qu'une simple aspiration, des raisons officielles et profondes étayent la thèse défendue dans cet article en vertu de laquelle des politiques exhaustives concernant le FLOSS sont une nécessité pour tous les États qui se targuent d'être une démocratie. Après une brève introduction de mes propositions dans la Partie 1, et une conceptualisation de FLOSS dans la Partie 2, la Partie 3 décrit différentes politiques gouvernementales d'application de FLOSS à l'échelle mondiale. Comme je le démontre, ces politiques sont fondées sur des valeurs normatives qui, au-delà des stéréotypes, feraient l'objet d'une meilleure évaluation dans le cadre d'une conception approfondie du principe démocratique. La Partie 4 dresse le portrait de l'histoire particulière du gouvernement brésilien qui a adopté des politiques relatives au FLOSS explicitement reliées au principe démocratique. La Partie 5 analyse les différentes dimensions du principe démocratique en cette ère de l'information. La Partie 5 commence avec la conceptualisation du principe démocratique à la lumière de ses liens avec la technologie, en général, et avec le FLOSS, en particulier, et évalue ensuite l'importance du FLOSS pour la réalisation des dimensions culturelles, éthiques, politiques et économiques du principe démocratique. Dans la Partie 6, l'article conclut par la vision particulière de l'engagement adopté lors de la ronde de négociations du Sommet mondial sur la société de l'information à Tunis et renforce cette vision du caractère déontologique des politiques gouvernementales à l'égard du FLOSS.

The Democracy of FLOSS: Software Procurement under the Democratic Principle

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1. SOFTWARE, BUREAUCRACIES, AND DEMOCRACIES

IT IS NOT THE AIM OF THIS ARTICLE to portray any objective and groundbreaking evidence in support of open source[1] policies. In effect, my intent here is not merely descriptive but normative. In the lines that follow I seek to explain why software is not just software and, more specifically, what software has to do with democracy. I am indeed convinced that there is more nurturing the semiological fabric and the underlying informational infrastructure that keeps our governments operating than procurement processes' measurements of efficiency. Economic savings with open source adoption can, of course, be an important factor for policymaking, and there are several studies addressing the economic reasons as to why governments should go (and are going) open source.[2] But what I fiercely believe is that a holistic framework for justifying a public policy should look not only into numbers and practicalities but, more importantly, their reason for being, namely people. Indeed, only by looking into people, more specifically citizens and the dynamics of social groups, and understanding the impacts of a public policy upon them will government officials depart the gray area that sometimes seems to exist between serving the state and serving society. And it is precisely here that government officials will cease to be bureaucrats and become democrats.

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1. For the sake of fluidity, I will refer to free software and open source software and their movements interchangeably Each movement, however, has a completely different set of principles, and rather antagonistic ideologies, that diverge in different measures from the traditional model of licensing computer programs to which they improperly refer as the "proprietary" regime—improperly in the sense that neither the free software movement nor the open source movement relies upon a system other than intellectual property law, and, more precisely, copyright law to achieve their ultimate goals. In this sense, both are also proprietary in the end. Both use the intellectual property framework to create a license (the former) or a definition (the latter) which is based on the legal concepts of authorship and ownership to establish a cyberspace of wider rights within the restrictive default of prohibitions defined in copyright acts and international intellectual property conventions. Please see discussion of differences in Section 2 below, for an analysis of their ideological differences.
2. See, for example, Canada, Treasury Board of Canada Secretariat, Chief Information Officer Branch, "Free and Open Source Software: Overview and Preliminary Guidelines for the Government of Canada," (26 April 2005), <http://www.tbs-sct.gc.ca/fap-paf/oss-ll/foss-llo/foss-llotb-eng.asp>.

Indeed, those who take this last approach for analyzing open source policies will be less resistant to, and less skeptical about, a democratic justification for the governmental development, use and encouragement of open source software. It is certainly an argument drenched in ideology to say that adopting a model of open development and licensing of computer programs is more democratic than embracing the opposite one. But, as democracy is itself an ideological concept, to say that we should get rid of ideology when establishing a public policy would imply that we should also get rid of any metaphysical ideas which pullulate in the immaterial universe of democracy. Fortunately, in the struggles throughout the centuries in the western hemisphere between those who want to keep a sometimes unjustified and other times disproportional model of privilege and control of societal institutions and those who want society at large to participate in the decisions that define people's sources of meaning and experience, the latter group has been triumphing. And the victories have hardly ever been based simply on quantifiable numbers, but mostly on values and principles that in a given moment perturbed the social glue.

Brought to the international stage, the conflicts between those who decide and those who are decided upon do not always rely simply on mensurable and definable factors. Fundamentalist and emulative logics are reflected in internally inconsistent recommendations from the (developed) countries which have taken charge of telling the others what they should do. Thus, it is not surprising that those opposing the recommendations of developed countries very often stand on the same ideological footing. As Ha-Joon Chang reveals in his insightful *Kicking Away the Ladder*, "[t]here is currently great pressure on developing countries from the developed world, and the international development policy establishment that it controls, to adopt a set of 'good policies' and 'good institutions' to foster their economic development." But "[h]ow did the rich countries really become rich? The short answer to this question is that the developed countries did not get where they are now through the policies and the institutions that they recommend to developing countries today."[3]

The attempts of developed countries to show how some diverging ones are failing the test of sanity by relying upon ideological values that do not correspond to the "status quo" are not very different from the marketing strategies of "capitalistically motivated and ideologically inclined"[4] owners of intellectual monopolies that try to paint free software communities as irrational followers of a marginal praxis.

This is certainly not what free software groups are. As Berkeley economist and sociologist Manuel Castells very accurately pointed out in his speech at

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3.   Ha-Joon Chang, *Kicking Away the Ladder: Development Strategy in Historical Perspective* (Anthem Press, 2002) at pp. 1–2.

4.   Eben Moglen, "'Die Gedanken Sind Frei': Free Software and the Struggle for Free Thought," Opening keynote presentation at *Wizards of OS 3: The Future of the Digital Commons* (Berlin, 10–12 June 2004), <http://emoglen.law.columbia.edu/publications/berlin-keynote.html>:

> The struggle for freedom of thought is as old as European politics and it underlies who all of us are today. It exists in relation to a long-standing struggle against various forms of control of thought each characteristic of the political and economic moment in which they temporarily triumphed. Whether it is the control of education and publication by the universal Catholic church, the control of printing and censorship of learning by state power or the control of knowledge and culture by owners, capitalistically motivated and ideologically inclined—we have been struggling against power for the freedom of thought for a millennium.

the World Social Forum of 2005, "Open Source *is not a fantasy or a marginal practice*. Very large, and very important software development projects have resulted from an open source process of production." By open source we should comprehend a new "form of social organization of production that originated in the development of computer software, and […] is mainly concerned with the open access to the knowledge of the source code of a software program."[5] As will be discussed, such a form is not exclusive to the open source movement. It is important to point out, as Castells notes, that open source can be seen "as a social phenomenon, a political phenomenon, and an economic phenomenon."[6] In this article I add that, fourthly, open source is also a cultural phenomenon and show that all those phenomena spread through a new technological model which reflexively nourishes and is nourished by them. I am convinced that each of those dimensions has an important implication for the development of the democratic principle, and that, in turn, makes the free software movement worth being taken into consideration by any country that purports to be democratic when it is establishing a public policy for software.

      I would go a bit further still. More than worth being taken into consideration, I believe that the free software movement definitely asks for a new definition of the way a state acquires and encourages the development of software in a democratic country. In this sense, and this is the precise idea of this paper, I will defend the argument that the democratic implications of the free software models of licensing must be observed in any process for acquiring computer programs and also stimulated by governmental actions aimed towards the development of the software sector. To reach this conclusion, I will consider each of the phenomena referred to by Castells as different conceptions of the democratic principle and examine the adequacy of several preferential regimes for free software that have been adopted by democratic states.

      As I have already hinted in this introduction, only in very exceptional situations can governments avoid migrating towards free software; for instance, this may be temporarily justified when an insurmountable legacy prevents a more intense process of migration. Only in anomalous situations, when higher harms for the public interest may arise as a consequence, would it be understandable that governments might defer or slow down their migration processes. What is not to any extent permissible is the persistence of the odd situation in which private parties tell governments how they should contract. It is quite enigmatic why in traditional public procurement processes governments decide under which clauses they should lease a building or hire a service, but when it comes to software a small group of major companies set the proper "public" framework through "End User License Agreements." That is to say, the few, who do not represent the interest of the many, decide for the state which rights it shall have and deny many freedoms that would better support the democratic principle.

      The following section begins our venture in this article by providing a more nuanced conceptualization of free software and its variants. It explains the contours of different models of licensing and development that, as just noted,

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5.   Manuel Castells, "Innovation, Information Technology and the Culture of Freedom," presentation at the *World Social Forum* (Porto Alegre, 26–31 January 2005), <http://www.choike.org/nuevo_eng/informes/2623.html|> (emphasis added).

6.   Castells, "Innovation, Information Technology and the Culture of Freedom," *supra* note 5.

better support the democratic principle. In section 5 I more deeply examine several dimensions of such principle and develop a more robust conceptualization of it, but perhaps a quick note is due here to introduce our further reference to it. Two issues are important to notice in this sense. First, I will refer to the principle in the singular – as *the* democratic principle. As much as one may find many different ideas grouped under the umbrella of democratic theory,[7] the same happens with the democratic principle – as it actually does with regard to *any* principle. As noted by Dworkin, "we make a case for a principle, and for its weight, by appealing to an amalgam of practice and other principles in which the implications of legislative and judicial history figure along with appeals to community practices and understandings."[8] Principles are an integral part of our complex normative order; the orientations, the reasons for action they provide us with hang together in a system that reflects and responds to that which Charles Taylor has termed a "space of questions."[9] The democratic principle, however, has a differentiated weight in this interconnected, normative web. It is a central node around which many other criteria or, if you like, *sub*-principles revolve. If we focus on democracy as a process, for instance, we may agree with Robert Dahl that democracy demands effective participation, voting equality at the decisive stage, equal opportunities for discovering and validating choices on matters being decided and the opportunity to control the agenda of matters to be decided.[10] What precisely those criteria encompass is of more problematic definition as, in a much grander scale, the very idea of "rule by the people," the literal understanding of democracy, is. However, as much as we can ascribe some normative force to each of Dahl's criteria for procedural democracy, we can also do so with regard to their more general organization under the idea of an overarching democratic principle. It is such an idea, which is wider than its topical procedural, institutional or other perspectives (e.g. technological), that I will be further referring to in this article as *the* democratic principle, and which I will be addressing from various societal dimensions with regard to free models of software licensing.

All this can perhaps be summarized by saying that the democratic principle demands that states and citizens conduct themselves according to the requirements of a democratic regime. Democracy, *empirically* considered, is a concept steeped in the variations of cultural relativism – i.e. as a sheer matter of fact, it may or may not be adopted, without any moral repercussions. Economies may thrive in its spite; societies may take pride on their different, long-held traditions. However, for states where all the members of the demos are deemed to be equally qualified a general *normative* standard ensues which provides that

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7.   See Robert A. Dahl, *Democracy and its Critics* (New Haven: Yale University Press, 1989) at p. 7: "I like to think of democratic theory as if it were like a very large three-dimensional web. Much too large to take in at a single glance, the web is constructed of interconnected strands of different elasticities."
8.   Ronald Dworkin, *Taking Rights Seriously* (London: Duckworth, [1977] 2005) at p. 36.
9.   Charles Taylor, *Sources of the Self: The Making of Modern Identity* (Cambridge: Cambridge University Press, 1992) at p. 29: "[T]o speak of orientation is to presuppose a space-analogue within which one finds one's way. To understand our predicament in terms of finding or losing orientation in moral space is to take the space which our framework seeks to define as ontologically basic. The issue is, through what framework-definitions can I find my bearing in it? In other words, we take as basic that the human agent exists in a space of questions. And these are the questions to which our framework-definitions are answers, providing the horizon within which we know where we stand, and what meanings things have for us."
10.   Dahl, *Democracy and its Critics*, *supra* note 7 at pp. 108-114.

the "good of each member is entitled to equal consideration."[11] In Dahl's words, "[i]f all the members are judged equally qualified, in the full sense, and if the other conditions set out earlier are held to exist among them, then the procedures according to which these persons, the citizens, make binding decisions ought to be evaluated according to the ... criteria [that define a full democratic process]." The second issue which is thus important to notice here is that, however different the normative character of principles may be in relation to that of rules, principles also provide standards, reasons for action. A principle, Dworkin explains, is "a standard that is to be observed ... because it is a requirement of justice or fairness or some other dimension of morality." For states that have entrenched the democratic principle in their *constitutional* traditions this is ever more true. Hence, if democratic criteria can be furthered by the adoption of free or open source software, the democratic principle provides reasons that that be so. We now turn to understand the object of such wider democratic possibilities.

<p style="text-align:center">*</p>

2. CONCEPTUALIZING FREE/LIBRE OPEN SOURCE SOFTWARE (FLOSS)

THE FREE SOFTWARE AND OPEN SOURCE MOVEMENTS share the same goal: they prescribe that the source code of a computer program—the preferred form that a programmer uses to modify the program—shall be accessible for users and new developers. The movements permit licensors (intellectual property rights holders) to charge for initial access to the program or its source code, but prohibit licensors from preventing further uses of both, including modifications and derivative works. That is to say, licensors shall not require a payment for the license *per se*, but only for additional services or facilities that they or others may render with respect to the licensed software. Licensors also must not object to the further distribution of copies of the original program and the derivative works, nor require any royalties to be paid. A particular and interesting point to note is that open and free software licenses may give rise to the establishment of a network of licenses, where people can be at the same time licensors and licensees; they may create a network of availability for a computer program's source code, where everybody is free to ride over the works of others and create new works which can immediately turn to benefit the collective.

Although the two movements share those general characteristics, there are important distinctions. The greatest difference between the Free Software and Open Source [OS] movements is their approach toward the exercise of human agency in the creation of a continuous chain of licenses in which any parasitic appropriation of code is forbidden. The OS movement believes it is merely desirable that further works (derivative works) should be licensed under the same regime as the original. Instead, users must be given the freedom to decide whether to adhere to the terms of the prior license. Hence, they may be entitled to create new works, based on the preceding ones, but may decide to turn those works into proprietary software or to license them under different open source or even free software licenses. Open source licenses thus may or

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11.   Dahl, *Democracy and its Critics*, *supra* note 7 at p. 108.

may not oblige further developers to adhere to the terms set at the origin. To meet the Open Source Definition, they are simply required to "*allow* [the works] to be distributed under the same terms as the license of the original software."[12] It is a movement with libertarian roots, which admits the least possible hindrance in human autonomy and believes that the authors of derivative works, or of works that are just based on the prior programs, should be given wider discretion with respect to which model to follow.[13] The greatest guru of this movement is Eric Raymond, author of *The Cathedral and the Bazaar*,[14] the most emblematic book about the model of production that Yochai Benkler has defined as a "commons-based peer production model."[15]

The Free Software movement, which was founded by former MIT engineer Richard Matthew Stallman with the creation of the GNU Project in 1985, is based on the idea that everybody must be free "to run, copy, distribute, study, change and improve" software. More analytically, its principles comprehend four different freedoms, namely: i) "the freedom to run the program, for any purpose"; ii) "the freedom to study how the program works, and adapt it to your needs"; iii) "the freedom to redistribute copies so you can help your neighbor"; and iv) "the freedom to improve the program, and release your improvements to the public, so that the whole community benefits."[16] Access to the source code is a precondition for the exercise of the second and fourth of these freedoms. In contrast to the OS movement, the Free Software movement relies on the GNU General Public License[17] to create an infinite circle of restriction against shifting any piece of code into a proprietary regime. The GNU GPL uses a mechanism, called the "copyleft clause," which Yochai Benkler and Jonathan Zittrain refer to as legal "jujitsu"[18] in the intellectual property system. The ultimate goal of the copyleft clause is to avoid any subsequent appropriation of works which were originally licensed in a regime of freedom. Every work that is derived from or based on a free software program must also remain free. Such a clause is thus antithetical to the intellectual property regime itself, a regime which the

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12. Open Source Initiative, "The Open Source Definition," <http://www.opensource.org/docs/osd>, at s. 3 (emphasis added).

13. For the open source initiative, there are no given features in the system. Freedom is a possibility, and not a perennial constriction. Open source adherents believe in the market, which must not be obliged to share the inner values of the free software movement. As Eric Raymond argues, "[w]e hackers are thinkers and idealists who really resonate with appeals to "principle" and "freedom" and "rights." Even when we disagree with bits of his program, we want [Richard Stallman's] rhetorical style to work; we think it ought to work; we tend to be puzzled and disbelieving when it fails on the 95% of people who aren't wired like we are." See Sam Williams, *Free as in Freedom: Richard Stallman's Crusade for Free Software* (O'Reilly, 2002), <http://www.oreilly.com/openbook/freedom/> at p. 115.

14. Eric S. Raymond, *The Cathedral and the Bazaar: Musings on Linux and Open Source by an Accidental Revolutionary* (O'Reilly, 2001), < http://safari.oreilly.com/0596001088>.

15. See Yochai Benkler, "Coase's Penguins, or Linux and the Nature of the Firm," (2002) 112:3 *Yale Law Journal* 369–446, <http://yalelawjournal.org/112/3/369_yochai_benkler.html> at p. 375.

16. Free Software Foundation, Inc., "The Free Software Definition," *GNU Project* (April 2006), <http://www.gnu.org/philosophy/free-sw.html>.

17. See Free Software Foundation, Inc., "GNU General Public License," (June 1991), <http://www.gnu.org/licenses/gpl.html>.

18. See Benkler, "Coase's Penguins," *supra* note 15 at p. 446; and Jonathan Zittrain, "Normative Principles for Evaluating Free and Proprietary Software," (2004) 71:1 *University of Chicago Law Review* 265–287, <http://ssrn.com/abstract=529862> at p. 269.

Free Software movement opposes,[19] in line with scholars and activists such as Lawrence Lessig,[20] John Perry Barlow,[21] and many others who see in such a regime an inadequate framework for dealing with goods that are non-scarce and non-rivalrous, and that thus must be spread for the benefit of society.

The copyleft clause is criticized by some as possibly infringing or exceeding the principle of privity of contract[22] or the intellectual property doctrines of property misuse and grantback.[23] To some extent the critiques may be valid, as the clause seems to have a viral effect over works that do not directly derive from free software programs but just use small parts of them, thereby implicating the misappropriation of those works by the collective without any corresponding *quid pro quo*. It appears indeed to be at least disproportionate that a whole proprietary program can be legally "contaminated" by little pieces of free software code that it accidentally reproduces. To the extent that derivative programs are concerned, however, the critiques do not seem be valid, as copyright statutes in general give owners the exclusive economic right to allow or oppose the development of derivative works, and, of course, to set the conditions for derivative works. In this sense, the General Public License only embraces third parties when they become users or developers of derivative works based on the software program—that is to say, when they are not third parties any more and can be lawfully restrained by the terms of the license.

In moral terms, one may perhaps summarize the inherent differences between the Free Software and the Open Source movements by saying, together with Zittrain, that the former is "deontological," and the latter "consequentialist;" that the former "focuses on the innate responsibilities of software authors to share their works with others," and the latter "on the benefits that accrue to authors and users if they avail themselves of a collaborative development model and a sharing of source code."[24]

If there is a good example in jurisprudence to understand the moral differences between Free Software and Open Source it is Lon L. Fuller's notion of a dichotomy between a "morality of aspiration" and a "morality of duty." The *morality of aspiration* is "the morality of the Good Life, of excellence, of the fullest realization of human powers."[25] In this concept, as Fuller describes, one might be condemned for failure, but not for failure to perform a duty; "for shortcoming, but not for wrongdoing." In Greek society, "instead of the ideas of

19. See Richard M. Stallman, "Copyleft: Pragmatic Idealism," in Joshua Gay, ed., *Free Software, Free Society: Selected Essays of Richard M. Stallman*, 1st ed. (GNU Press, 2002) 93–95, <http://www.gnu.org/philosophy/fsfs/rms-essays.pdf> at p. 93: "My work on free software is motivated by an idealistic goal: spreading freedom and cooperation. I want to encourage free software to spread replacing proprietary software that forbids cooperation, and thus make our society better. That's the basic reason why the GNU General Public License is written the way it is—as a copyleft."

20. See Lawrence Lessig, *The Future of Ideas: The Fate of the Commons in a Connected World* (Random House, 2001) at pp. 115–116: "But perfect control is not necessary in the world of ideas. Nor it is wise. [...] The lack of rivalrousness undercuts the justification for governmental regulation. The extreme protections of property are neither needed for ideas nor beneficial."

21. See John Perry Barlow, "The Economy of Ideas," (March 1994) 2.03 *Wired Magazine,* <http://wired-vig.wired.com/wired/archive/2.03/economy.ideas.html>.

22. See Andres Guadamuz Gonzalez, "Viral Contracts or Unenforceable Documents? Contractual Validity of Copyleft Licenses," (2004) 26:8 *European Intellectual Property Review* 331–339, <http://ssrn.com/abstract=569101> at p. 336.

23. See Christian H. Nadan, "Open Source Licensing: Virus or Virtue," (2002) 10:3 *Texas Intellectual Property Law Journal* 349–378 at pp. 367–371.

24. Zittrain, "Normative Principles," *supra* note 18 at p. 11.

25. Lon L Fuller, *The Morality of Law*, 2d ed. (Yale University Press, 1969) at p. 5 (emphasis added).

right and wrong, of moral claim and moral duty," there was rather "the conception of proper and fitting conduct," which represented "a human being functioning at his best."[26] According to Fuller, the morality of aspiration stands in intimate kinship with aesthetics and has to do with our efforts to make the best use of our short lives. On the other hand:

> Where the morality of aspiration starts at the top of human achievement, the *morality of duty* starts at the bottom. It lays down the basic rules without which an ordered society is impossible, or without which an ordered society directed toward certain specific goals must fail of its mark. [The morality of duty finds its closest cousin in the law...] It does not condemn men for failing to embrace opportunities for the fullest realization of their powers. Instead, it condemns them for failing to respect the basic requirements of social living. […] The moral injunction "thou shalt not kill" implies no picture of the perfect life. It rests on the prosaic truth that if men kill one another off no conceivable morality of aspiration can be realized.[27]

The Open Source movement thus, has freedom as an ultimate goal, but one which must be achieved by free will and conviction. It is undoubtedly more market friendly, for it is based simply upon aspirational principles and not on contractual restrictions. It seems to understand people and companies as well-intentioned entities that will embrace open source for its inherent values and utilities. It is naturalist, in the way it sees technology companies almost as noble savages that will pursue the good if let alone. It is Rousseau, before life in society and without the social contract.

The Free Software movement, however, seems to acknowledge that it is impossible to correct a market failure by simply giving more freedom to the agents of the market. Non-circulation of knowledge is an externality that harms the cognitive ecology and is not likely to be addressed and internalized by those who want to benefit from the disproportionate informational scarcity that is artificially created by intellectual property laws. The logic, hence, is that society needs a proper framework to address this externality and to ensure that freedom is real freedom and not an aspirational ideal hindered by actual inequality. Because it focuses on its principles as duties, the Free Software movement sets up a proper framework for coping with their probable infringement.

Thus the copyleft clause is an active delimitation of freedom that must be followed by all those who wish to adhere to the system propounded by the Free Software movement. It raises the question whether the principles embraced by the Free Software movement are a floor of rights to be followed in a democratic society. In other words, it makes one wonder whether for all of us, and especially for our governments, there is also a moral duty to embrace and foster the fulfillment of the four freedoms of the Free Software movement. This is the question the parts below seek to address, focusing on the case of governments to conclude that the different phenomena reflected by the Free and Open Source software movement fit into particular dimensions of the democratic principle in our contemporary society.

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26.   Fuller, *The Morality of Law*, *supra* note 25 at p. 5.
27.   Fuller, *The Morality of Law*, *supra* note 25 at pp. 5–6, 11 (emphasis added).

From now on I will refer to both movements in general as the Free/Libre/ Open Source Software movement or, simply, FLOSS. The word "libre," stemming from French and Spanish, has been increasingly used for denoting that "free" in free software does not mean "gratis," as in "free beer," but free as in "free speech." It shows that a public decision with respect to FLOSS is much more than an economic issue.

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3. FLOSS IN DEMOCRATIC STATES: A COMPARATIVE ASSESSMENT OF INTERNATIONAL POLICIES

DOES THE FACT THAT DEMOCRATIC GOVERNMENTS around the world have been increasingly adopting FLOSS add any particular flavour to this discussion? Does it bring any strength to my claims that there is a connection between software and democracy? That inference would perhaps be harder to sustain if the decisions have been taken based on purely econometric grounds. What is interesting, however, is that even countries that decided to adopt a balanced or neutral approach, that is to say, even those countries that do not want to appear to be making their decisions based on ideological arguments cannot help but insert in their public policies the recognition of values and principles analogous to those inherent in the FLOSS movement.

Canada, for instance, which apparently has adopted a conciliatory approach,[28] in reality reflects in its architecture's principles[29] some rules that seem to be only met or better met by FLOSS programs, with available source code and the possibility of unrestricted use, reuse, and modification. On the one hand, the Canadian position on FLOSS acknowledges that the government policies are not oriented towards mandatory adoption. The relevant FAQ section of the Treasury Board of Canada Secretariat[30] website clearly states that the Government of Canada's approach is to have "departments and agencies base their decisions to acquire, develop and use software, including open source, *on their business needs* and the principles set out in the government's Federated Architecture Program."[31]

On the other hand, among the mentioned principles there are rules that are clearly oriented towards values that are only or mostly shared by FLOSS programs, such as the following statements:

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28. Treasury Board of Canada, Chief Information Officer Branch, "GOC Proposed Position on Open Source Software and Next Steps," (7 April 2004), <http://www.tbs-sct.gc.ca/fap-paf/oss-ll/oss-ll/oss-ll_e.pdf> at p. 7. The Treasury Board Secretariat stated that between "[taking] no official position regarding the evolution of OSS within the federal administration," or "[mandating] preferences for the use of OSS across the federal administration," it is preferable to "[a]dopt a balanced approach to OSS."
29. Treasury Board of Canada Secretariat, Chief Information Officer Branch, "Government of Canada, Federated Architecture, Iteration One," (10 August 2001), <http://www.tbs-sct.gc.ca/fap-paf/documents/iteration/iteration05_e.asp>.
30. "The Treasury Board Secretariat is responsible for the [Government of Canada (GoC)] policy on open source software and for managing governance and oversight of the Government of Canada Federated Architecture Program. Comptrollership processes ensure that GoC projects conform to the FAP." Treasury Board of Canada Secretariat, Chief Information Officer Branch, "Open Source Software Position," (29 June 2004), <http://www.tbs-sct.gc.ca/fap-paf/oss-ll/position_e.asp>.
31. Treasury Board of Canada Secretariat, Chief Information Officer Branch, "Open Source Software Frequently Asked Questions," (23 August 2004), <http://www.tbs-sct.gc.ca/fap-paf/oss-ll/faq_e.asp> (emphasis added).

- Principle 6, "priority will be given to products adhering to industry standards and *open architecture*";[32]
- Principle 1, "[w]e must *re-engineer application systems* to be 'highly modular' and 'loosely coupled' to be *able to reuse components*";[33]
- "[r]educing integration complexity" by "*establishing a 'culture of reuse'* through the use of incentives"; and
- "building and *integrating reusable components* must become a common development method."[34]

In a cost comparison model between proprietary software and FLOSS programs, the Secretariat shows that the payback period for the migration from the former group to the latter is estimated to be only one year and six months, and the economy from then on is approximately half the amount of the regular expenses with hardware, people, and licenses involving proprietary software.[35] This alone raises the question why proprietary systems are maintained. But the reasons are much deeper than economics.

Showing how factors surrounding the implementation of FLOSS go much beyond the technical argument, a very comprehensive study conducted by e-Cology Corporation under a contract with the Government of Canada has pointed out that "[t]here are numerous examples of effective use of OSS within the public sector today but lack of clear OSS policy is creating *fear, uncertainty and doubt* about its legitimacy preventing optimal exploitation"[36] It also acknowledged that FLOSS is "a form of "market correction," "a transformative process that when done successfully, opens a new world of possibilities," and "a strategic element of ICT *and beyond*."[37] Thus, the study recommended that the Government of Canada "seize OSS opportunities through clear and well-communicated policies and by *being proactive without being provocative*."[38]

It is very clear, therefore, when speaking about *provocative policies*, about an element that is *beyond* information and communication technologies, and about *fear, uncertainty, and doubt*, that the debates are not circulating on purely technological grounds—and likewise when "an *'electronic' commons* by the private and public sector" is proposed as something of strategic importance to Canada's future,"[39] when one of the arguments proffered on behalf of FLOSS policies are "*political considerations* such as *national autonomy*,"[40] and when developers feel that the "key benefit [of FLOSS] is *cultural*, not [...] code."[41]

In short, something more is going on, and it has to do with the socioeconomic, political, and cultural environment in which FLOSS is inserted.

32. Treasury Board, "GOC Proposed Position," *supra* note 28 at p. 12 (emphasis added).
33. Treasury Board, "GOC Proposed Position," *supra* note 28 at p. 10 (emphasis added).
34. Treasury Board, "Federated Architecture, Iteration One," (18 October 2001), <http://www.tbs-sct.gc.ca/fap-paf/documents/iteration/iteration05_e.asp> at "Architecture Principle 1" (emphasis added).
35. Treasury Board, ""Free and Open Source Software: Overview and Preliminary Guidelines for the Government of Canada," *supra* note 2.
36. e-Cology Corporation, *Open Source Business Opportunities for Canada's Information and Communications Technology Sector: A Collaborative Fact Finding Study* (September 2003), <http://www.e-cology.ca/canfloss/report/CANfloss_Report.pdf> at p. 5 (emphasis added).
37. e-Cology Corporation, *Open Source Business Opportunities, supra* note 36 at p. 65 (emphasis added).
38. e-Cology Corporation, *Open Source Business Opportunities, supra* note 36 at p. 5 (emphasis added).
39. e-Cology Corporation, *Open Source Business Opportunities, supra* note 36 at p. 7 (emphasis added).
40. e-Cology Corporation, *Open Source Business Opportunities, supra* note 36 at p. 9 (emphasis added).
41. e-Cology Corporation, *Open Source Business Opportunities, supra* note 36 at p. 28 (emphasis added).

With its power to affect social relations in all their dimensions, what leads to the certainty that "OSS policy in any government would need to be congruent and integrated with its *broader policies and objectives*"?[42] The question that follows is, if all those beneficial elements are present in FLOSS, why the concern about being provocative? Is it such a relevant and cogent policy not to upset a corporation, or does the duty of a government lie precisely in satisfying the public interest in the fulfilment of the broader societal promises of a real democracy?

      Canada is not alone in the ambiguity of its discourse. The cacophony of public policies with respect to FLOSS reflects the same dichotomy as in the relations between the free software and the open source movements. That is to say, for some, the principles of the FLOSS movement are not more than an *aspiration* to be fulfilled by indirect and non-mandatory policies. For others, there is actually a governmental *duty* to take more proactive steps to embrace those principles. The United States, for instance, reflects such a dichotomy within the federation itself. On one hand, the Federal Government refrains from taking clear steps towards the promotion of FLOSS by instructing that its adoption by federal agencies and public bodies be based on objective factors. On the other hand, some US states are concretely pursuing proper avenues for promoting FLOSS as a duty.

      The US Federal Government's approach, however, is not so different from Canada's approach. By invoking the liberal principle of technological neutrality,which is sometimes erroneously cited as an obstacle to governmental preferences towards FLOSS, the US Office of Management and Budget issued the Memorandum M-04-16 for the Senior Procurement Executives and Chief Information Officers of the Federal Government, requiring information technology investment decisions to be "technology and vendor neutral," as well as stating that "to the maximum extent practicable, agency implementation should be similarly neutral."[43] The path to neutrality would supposedly rely on objective factors. In this sense, the Memorandum lays out that "agency IT investment decisions, including software, must be made consistent with the agency's enterprise architecture and the Federal Enterprise Architecture" and that "agencies must consider the total cost of ownership including lifecycle maintenance costs, the costs associated with risk issues, including security and privacy of data, and the costs of ensuring security of the IT system itself."[44] With respect to FLOSS, the Memorandum does not establish any visible preferential criteria, limiting itself to register that the "reminder applies to acquisitions of all software, whether it is proprietary or Open Source Software," and "must be considered when an agency is planning a software acquisition," since "differences in licensing may affect the use, the security, and the total cost of ownership of the software."[45]

      However, when one looks into the framework defined for the Federal Enterprise Architecture, as in Canada, it is not difficult to find some criteria which are better or only met by FLOSS. The Circular setting out the rules for the

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42.   e-Cology Corporation, *Open Source Business Opportunities, supra* note 36 at p. 37 (emphasis added).

43.   Executive Office of the President, Office of Management and Budget, "Software Acquisition," Memorandum M-014-16, (USA, 1 July 2004), <http://www.whitehouse.gov/omb/memoranda/fy04/m04-16.html>.

44.   Executive Office of the President, "Software Acquisition," *supra* note 43.

45.   Executive Office of the President, "Software Acquisition," *supra* note 43.

Management of Federal Information Resources,[46] for instance, which is mentioned in the Memorandum above, expressly defines as one of its basic considerations and assumptions that "[t]he open and efficient exchange of scientific and technical government information, subject to applicable national security controls and the proprietary rights of others, fosters excellence in scientific research and effective use of Federal research and development funds."[47] The fact that the Circular acknowledges the existence of proprietary rights should, of course, not obstruct the understanding that that basic assumption would be even better met whenever proprietary rights have been generally assigned or waived by the will of the rightsholders themselves. Furthermore, the existence of proprietary rights is clearly set out to be read as an exception, and not as the rule.

The Circular also defines Enterprise Architecture (EA) principles and goals,[48] and provides that an EA must "set direction on such issues as the *promotion of interoperability*, *open systems*,[49] *public access*, compliance with GPEA, end user satisfaction, and IT security."[50] Agencies must implement the EA so as to be consistent with principles such as "[facilitating] interoperability,"[51] and "[meeting] information technology needs through cost effective *intra-agency and interagency sharing*, before acquiring new information technology resources."[52] It also requires that the level of security of information technology systems be "commensurate to the risk and magnitude of the harm resulting from the loss, misuse, unauthorized access to, or modification of the information stored or flowing through these systems."[53] Very pertinently, those principles show that access to governmental information, including data and electronic records, must be set as the rule, and not the exception in a democratic country, as was observed above and will be developed further below.

But the federal US framework does not help to define any duty with respect to the adoption of FLOSS, and, in contrast to the Canadian framework, it does not give any more express clues about the ideological values that underlie its principles. However, some American states have propositions that clearly align with the claims being advanced in this paper. The recent movement in the Commonwealth of Massachusetts, received with great interest by the media, provoked an intense turmoil that caused the Senate to request the testimony of Peter Quinn, the State's Chief Information Officer of the Information Technology

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46.   Executive Office of the President, Office of Management and Budget, "Management of Federal Information Resources," Circular No. A-130 Revised, Transmittal Memorandum No. 4, (USA, 28 November 2000), <http://www.whitehouse.gov/omb/circulars/a130/a130trans4.html>.
47.   Executive Office of the President, "Management of Federal Information Resources," *supra* note 46 at s. 7(k).
48.   Executive Office of the President, "Management of Federal Information Resources," *supra* note 46 at s. 8(b)(2)(a). According to this section, "[a]n EA is the explicit description and documentation of the current and desired relationships among business and management processes and information technology. It describes the 'current architecture' and 'target architecture' to include the rules and standards and systems life cycle information to optimize and maintain the environment which the agency wishes to create and maintain by managing its IT portfolio."
49.   Executive Office of the President, "Management of Federal Information Resources," *supra* note 46 at Appendix IV. An open system is defined as a system "based on an architecture with published or documented interface specifications that have been adopted by a standards settings body."
50.   Executive Office of the President, "Management of Federal Information Resources," *supra* note 46 at s. 8(b)(2)(a) (emphasis added).
51.   Executive Office of the President, "Management of Federal Information Resources," *supra* note 46 at s. 8(b)(2)(a)(i).
52.   Executive Office of the President, "Management of Federal Information Resources," *supra* note 46 at s. 8(b)(2)(a)(ii) (emphasis added).
53.   Executive Office of the President, "Management of Federal Information Resources," *supra* note 46 at s. 8(b)(2)(a)(iii).

Division, and culminated in his resignation.[54]

In short, what happened in Massachusetts was a political battle surrounding the adoption of an open format for the Commonwealth's government documents—a political battle on a democratic issue. As very well expressed by Quinn, "the Commonwealth's documents belong to its people and should not be locked up in proprietary formats that either restrict access to those who are willing and able to buy particular software tools to open them, or prevent access to those records in the far future because their readability is dependent upon software that is no longer available."[55] Under his leadership, Massachusetts' Information Technology Division decided to include the obligatory adoption of the Open Document Format (ODF) in version 3.5 of its Enterprise Technical Reference Model (ETRM), based on the finding that ODF is "developed through an open peer review process, is maintained by an open community, and is available under patent and copyright licenses that impose minimal restrictions on software developers who wish to write applications to support it, now and in the distant future."[56]

The Open Document Format is not FLOSS. It can also be used by proprietary vendors in the development of their programs. To date, however, Microsoft, the biggest provider of office software suites still does not use open standards in its programs, and this was precisely the root of the controversy in Massachusetts. Even though ODF is not FLOSS, the arguments put forward to advocate its mandatory use in Massachusetts are not any different from those traditionally used with respect to FLOSS. They also clearly show that the adoption of open criteria, be it with respect to standards or code, does not mean giving preference to one provider over another, but it opens the path for competition in the provision of IT services. As accurately asserted in the ETRM version 3.5 FAQ, the "adoption of the Open Document Format creates no preference tied to a particular product or vendor. Because the Open Document Format is an open format, available to all, it can be adopted by any vendor who seeks to create desktop software."[57] And so can FLOSS....

Massachusetts is the only American state to adopt an explicit orientation towards openness in the computerisation of its government. Other states, however, have recently studied the adoption of acts that would either invert the pattern for contracting software, turning the use of proprietary programs into an exception, or mandate the adoption of FLOSS. In an example of the former, House

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54. For a lively discussion on this issue, see Pamela Jones, "Peter Quinn Exonerated," (12 December 2005) *Groklaw*, <http://www.groklaw.net/article.php?story=20051210103842722>.

55. Peter Quinn, Chief Information Officer, testimony in "Open Document Format," hearing (USA MA, 21 October 2005), Senate Post Audit and Oversight Committee, 184th General Court of the Commonwealth of Massachusetts, <http://www.mass.gov/?pageID=itdterminal&&L=3&L0=Home&L1=Open+Initiatives&L2=OpenDocument&sid=Aitd&b=terminalcontent&f=open_odf_cio_hpao_testimony&csid=Aitd>.

56. Quinn, testimony in "Open Document Format," *supra* note 55.

57. Information Technology Division, "Final ETRM Version 3.5 Open Document Format Standard: Frequently Asked Questions," (USA MA, 21 September 2005), <http://www.mass.gov/Aitd/docs/policies_standards/etrm3dot5/opendocformfaqs.pdf >. It was not very surprising that all providers but Microsoft Corporation applauded the adoption of the format. See Alan Yates, General Manager, Microsoft Corporation, "Re: Proposed Revisions to Information Domain-Enterprise Technical Reference Model," submission regarding "Open Document Format," to Executive Office for Administration & Finance and Information Technology Division, (USA MA, 8 September 2005), <http://www.mass.gov/?pageID=itdterminal&L=3&L0=Home&L1=Open+Initiatives&L2=OpenDocument&sid=Aitd&b=terminalcontent&f=policies_standards_etrm_35_responses_microsoft&csid=Aitd>.

Bill 2892 in Oregon,[58] although it established a value-for-money criterion, would have required the government to "[c]onsider acquiring open source software products in addition to proprietary software products,"[59] and to justify any option for proprietary software.[60] Among several motives for the bill, one in particular was very interesting as it indicated the political dimension of the debate. The bill acknowledged that "[i]t is also in the public interest that the state be free, to the greatest extent possible, of restrictions imposed by parties outside the state's control."[61] An example of the latter was Texas, where Senate Bill 1579 would have required the government to comply with the definition of *open source* and *open standards* in the procurement of software. Texas's bill, which is stronger than Oregon's, included detailed provisions to show that choosing between FLOSS or proprietary software is not a matter of choosing between different products (and thus discriminating vendors), but simply a matter of defining the correct model of contracting. Thus it states, *inter alia*, that a "contract for the procurement of software under this section shall comply with Section 2054.114"[62] (the section that defines open source and open standards). This is also clearly asserted with respect to the definition of open standards, where the bill states that "'[o]pen standards' means specifications for the encoding and transfer of computer data that: […among other things] (D) do not favor one implementer over another for any reason other than the technical standards compliance of an implementation."[63] In 2004, the State of California enacted a statute concerning the adoption of open source software in all of its ballot tally voting machines.[64]

In contrast to the American model, the European Union and its Member countries have embraced a more prospective and principles-oriented policy, explicitly recognizing the underlying values supporting FLOSS adoption by governments. As Mr. Jean-Marie Lapeyre, chief technical officer of the French tax agency, one of the largest entities to migrate to FLOSS in Europe, has very sensibly observed, there is a *cultural* difference between the Anglo-American and the French way of approaching things. In his words, "[i]t's not anti-American; it's a cultural difference—we think differently. [...] The English focus is on action, while we [the French] are more reflective."[65] It would be preferable to say, however,

58.   See Lisa M Bowman, "Open source battle heats up over Oregon bill," (10 April 2003) *ZDNet UK*, <http://news.zdnet.co.uk/software/0,39020381,2133230,00.htm>. Records from that time show how eloquent the debate was, with agents of the proprietary model afraid that the enactment of Oregon's bill could create a strong precedent to be followed by other states and by the European Union. The debate was marked by an anti-Microsoft sentiment, while the company threatened to sue Oregon schools for piracy if they did not acquire new licenses of Microsoft products.

59.   *Bill for an Act Relating to software acquisition by state government*, Bill HB 2892 (USA OR, 2003), 72nd Oregon Legislative Assembly, <http://www.leg.state.or.us/03reg/measures/hb2800.dir/hb2892.intro.html> at s. 1(2)(a) [HB 2892], reintroduced as *Bill for an Act Relating to software acquisition by state government*, Bill HB 2642 (USA OR, 2005) 73rd Oregon Legislative Assembly, <http://landru.leg.state.or.us/05reg/measures/hb2600.dir/hb2642.intro.html>.

60.   HB 2892, *supra* note 59 at s. 1(2)(c).

61.   HB 2892, *supra* note 59 at Preamble, 1(f).

62.   *A Bill to be Entitled an Act relating to software acquisition by state agencies*, Bill SB 1579 (USA TX, 13 March   2003), 78th Texas Legislative Session, <http://www.legis.state.tx.us/tlodocs/78R/billtext/pdf/SB01579I.pdf> at s. 8(i) [SB 1579].

63.   SB 1579, *supra* note 62, s. 1(2)(D).

64.   *Relative to ballot tally software*, Bill ACR 242 (USA CA, 3 June 2004), 2003–2004 Assembly <http://www.leginfo.ca.gov/pub/03-04/bill/asm/ab_0201-0250/acr_242_bill_20040603_introduced.html>, enacted on 3 June 2004 as *2004 Statutes of California* ch. 242, <http://www.leginfo.ca.gov/pub/03-04/bill/asm/ab_0201-0250/acr_242_bill_20040831_chaptered.html>.

65.   Ingrid Marson, "Europe and the US Philosophically Divided on Open Source?" (8 November 2005) *ZDNet UK*, <http://news.zdnet.co.uk/software/0,1000000121,39235707,00.htm>.

that such a reflective way of doing public policy is not exclusive to France, but it is rather a characteristic of continental Europe in general.

The European Commission's Open Source Observatory[66] summarizes in a very fortunate fashion, and in harmony with the argument of this article, that if "[d]ifferent organisations have different reasons for choosing OSS" this happens "especially in the public sector *where politics and other non-technical issues play a role.*"[67] These issues are widely reflected in the many aspects of FLOSS considered by the Commission. Indeed, in the document on "The Many Aspects of Open Source Software," the Open Source Observatory recognizes the existence of political, economical, technical, social and legal aspects for the adoption of FLOSS by the governments of the Member states.[68]

For those who tremble before any ideological line of argumentation, it will be particularly challenging to see the European Commission speaking about FLOSS as a means of promoting freedom and equality, of stimulating a digital heritage, of making education available and providing fun to students, and even of gathering social groups of developers who before would work as "lone rangers." In effect, the principles advocated by the Commission extend through a vast territory of justifications that are not only drenched in ideological concepts but also extremely interconnected with a wide understanding of the democratic principle, as I will examine. The encouragement of the use of FLOSS is also set out in the *eEurope 2005 Action Plan*, which was launched in the Seville European Council in 2002, and aims to develop modern public services and a dynamic environment for e-business in Europe.[69] In Action 3.1.1, the Plan established that the interoperability framework of pan-European e-government services to citizens and enterprises would "be based on open standards and encourage the use of open source software."[70] The Plan also prescribed a wider use of open standards and open source software as a means to achieve network security[71] and mandated that some cases of good practices for e-services should be selected and documented, resulting in templates or guidelines which will "consist of a methodology, an associated set of tools and software in open-source form."[72] It is also remarkable that the Commission approved a model license for software developed by the EU (the EUPL—European Union Public License), which

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66. IDABC European eGovernment Services, "The Programme," <http://europa.eu.int/idabc/en/chapter/3>. The Open Source Observatory is run by the European Commission's IDABC (Interoperable Delivery of European eGovernment Services to public Administrations, Businesses and Citizens), which is an EU program that has as its goals to encourage and support the delivery of cross-border public sector services to citizens and enterprises in Europe, to improve efficiency and collaboration between European public administrations, and to contribute to making Europe an attractive place to live, work and invest.

67. IDABC European eGovernment Services, Open Source Observatory, "The Many Aspects of Open Source Software," <http://europa.eu.int/idabc/en/document/1744/468> (emphasis added).

68. IDABC European eGovernment Services, Open Source Observatory, "The Many Aspects of Open Source Software," *supra* note 67.

69. See Commission of the European Communities, *eEurope 2005: An Information Society for All: An Action Plan to be presented in view of the Sevilla European Council, 21/22 June 2002*, COM(2002) 263 (EU, 28 May 2002) <http://ec.europa.eu/information_society/eeurope/2002/news_library/documents/eeurope2005/eeurope2005_en.pd>.

70. Commission of the European Communities, *eEurope 2005*, *supra* note 69 at p. 11.

71. Commission of the European Communities, *eEurope 2005*, *supra* note 69 at p. 16.

72. Commission of the European Communities, *eEurope 2005*, *supra* note 69 at p. 18.

expressly adopts the copyleft clause.[73] The justifications for this, reflected in a study developed at the Commission's request, were based on the view that "a copyleft license is *necessary*" if "the Commission intends to be protected against the appropriation of the application by third parties and to benefit from further developments made by its licensees."[74]

Following the broader umbrella of the European Commission, and in some cases preceding it, a generous number of Member states have adopted FLOSS policies to a smaller or larger extent. Comprehensive studies conducted by UNU-MERIT[75] under the FLOSSPols Project have found that up to around 79% of European local authorities use FLOSS.[76] Among the leading countries are Spain, Italy, Austria, Germany, Belgium, Sweden and France, and among those who use less FLOSS are Greece and the UK.[77] The study shows that "[r]eluctance to an increase of the share of FLOSS is especially expressed by respondents from the UK, which appears to have a relatively low share of FLOSS users."[78] Far from being insignificant, this data intertwines with the observations raised by Jean-Marie Lapeyre to show how the cultural differences between the English speaking world and the rest of Europe contribute to how public policies concerning FLOSS are carried out. They are not just cultural differences but also political, and reflect, for instance, different understandings with respect to human rights[79] and different conceptions of the democratic principle.

Many European Countries, such as Sweden, UK, Belgium, Germany, France, Spain, Italy, Estonia, Finland, Lithuania, and Netherlands, adopted policies encouraging (not mandating) the adoption of FLOSS to some extent – which has been happening extensively, while Denmark and the Netherlands have mandated the adoption of Open Standards.[80] Italy, by means of a Ministerial Decree, instituted a Commission for FLOSS in public administration charged with examining the technical, economic, and organizational aspects of the use of FLOSS.[81] The Government was of the view that "the distribution and the evolution of OS software can in fact determine a series of advantages in terms of: containment of price, security and transparency, non-dependence upon a

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73. European Union, "European Union Public Licence v1.0,"EUPL v1.1-EN (EU, 9 January 2007), <http://ec.europa.eu/idabc/servlets/Doc?id=27470>. The "Copyleft Clause" is in s. 5: "If the Licensee distributes and/or communicates copies of the Original Works or Derivative Works based upon the Original Work, this Distribution and/or Communication will be done under the terms of this EUPL Licence. The Licensee (becoming Licensor) cannot offer or impose any additional terms or conditions on the Work or Derivative Work that alter or restrict the terms of the Licence."

74. European Commission, Enterprise Directorate General, IDA/GPOSS, "Encouraging Good Practice in the Use of Open Source Software in Public Administrations: Report on Open Source Licensing of Software Developed by The European Commission (applied to the CIRCA solution)," (EU, 16 December 2004), <http://ec.europa.eu/idabc/servlets/Doc?id=24394>, p. 19.

75. MERIT, "Results and Policy Paper from Survey of Government Authorities FLOSSPols," (Maastricht, 25 August 2005), <http://flosspols.org/deliverables/D03HTML/FLOSSPOLS-D03%20local%20governments%20survey%20reportFINAL.html>.

76. MERIT, "Results and Policy Paper from Survey of Government Authorities FLOSSPols," *supra* note 75 at p. 16.

77. MERIT, "Results and Policy Paper from Survey of Government Authorities FLOSSPols," *supra* note 75 at p. 49.

78. MERIT, "Results and Policy Paper from Survey of Government Authorities FLOSSPols," *supra* note 75 at p. 50.

79. See Cass R. Sunstein, "Why Does the American Constitution Lack Social and Economic Guarantees?" no. 36, *University of Chicago Public Law and Legal Theory Working Paper* (January 2003), <http://www.law.uchicago.edu/academics/publiclaw/resources/36.crs.constitution.pdf >.

80. See Rishab Aiyer Ghosh, "Free/Libre/Open Source Software in Government," presentation at EuroOSCON (Amsterdam, 18 October 2005), <http://www.flossproject.org/papers/20051018/RishabGHOSH-eurooscon-flossgovt.pdf> at p. 9.

81. Ministero per l'Innovazione e le Tecnologie, *Istituzione della Commissione per il software a codice sorgente aperto —"open source"—nella Pubblica Amministrazione,* ministerial decree (ITA, 31 October 2002), <http://www.cnipa.gov.it/site/_files/os_Decreto%20MIT%2031%20ottobre%202002_c.pdf>.

single provider, elevated reusability, [and] accessibility to the small realities of development."[82]

Similarly, the French government has not adopted any assertively preferential policy either. However by 2002, the Agence pour les technologies de l'information et de la communication dans l'administration (ATICA) issued its guidelines on FLOSS. In that document, the agency expressly observed that the FLOSS movement is not, in essence, only a pragmatic movement, but that sharing code also has a *cooperative approach*, which is based on the *desire to pool software*.[83]

Finally, it is worth noting the movement in Spain, where the use of FLOSS in the public service has been the most extensive in Europe and has culminated with the formation of the International Network of Public Administrations for Free Software. The statement of principles of this network, supported by public figures of the calibre of Vinton Cerf, Manuel Castells, Pamela Samuelson and Pekka Himanen, among others, is recorded in the *Barcelona Declaration for the Advance of Free Software*.[84] That declaration, in line with the European Commission justifications,[85] also acknowledges several dimensions that present challenges and opportunities for the adoption of FLOSS by governments, namely in academic, technical, social, legal, and voluntary areas. The Declaration has been adopted by several local and national governments, abroad and in the EU, including the Brazilian federal government and some of its state and city governments, the Argentinian federal IT agency, the Peruvian Ministry of Education, some Italian localities, such as the Province of Rome and the Region of Toscana, the Spanish Ministry for Public Administration, and many governments of localities in Spain, such as Catalonia, Andalusia, Valencia, Madrid, Barcelona, and the "Extraordinary Extremadura."[86]

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82.   Ministero per l'Innovazione e le Tecnologie, "L'Open Source," (ITA, 20 February 2004), available at *Internet Archive*, <http://web.archive.org/web/20061209055545/http://www.innovazione.gov.it/ita/egovernment/infrastrutture/open_source.shtml>.

83.   Agence pour les technologies de l'information et de la communication dans l'administration, "Guide de choix et d'usage des licences de logiciels libres pour les administrations, " (FRA, December 2002), <http://synergies.modernisation.gouv.fr/IMG/pdf/Guide_LLL-2.pdf> at p. 6:

> L'émergence des logiciels libres repose sur un phénomène simple : la volonté de mutualiser les logiciels. Les logiciels sont un bien essentiellement immatériel et reproductible à peu de frais. La mutualisation de leur développement est une approche naturelle pour réduire les coûts ou améliorer la qualité d'un logiciel en accroissant son caractère générique, sa souplesse, sa richesse fonctionnelle et sa modularité. Cette idée de mutualisation est à l'origine des logiciels libres.

ATICA is currently known as Agence pour le Développement de l'Administration Électronique (ADAE).

84.   See International Network of Public Administrations for Free Software, *Barcelona Declaration for the Advance of Free Software* (18 May 2004), <http://www.lafarga.org/xarxa/en/declaration>.

85.   See IDABC European eGovernment Services, Open Source Observatory, "The Many Aspects of Open Source Software," *supra* note 67.

86.   See International Network of Public Administrations for Free Software, "Members," <http://www.lafarga.org/xarxa/en/members>. Spain, as noted, has been widely adopting FLOSS in its public bodies. In addition to the Ministry of Public Administration, the Ministry of Justice and the Ministry of Housing are also large scale FLOSS adopters. But it is a local region of Spain that has been one of the leading cases of FLOSS adoption in Europe. The Region of Extremadura, which is within the triangle formed by Madrid, Seville and Lisbon, used to be the poorest region in the EU, but it has raised its social standards with the use and deployment of FLOSS. As a result, the Region was granted the EU Regional Innovation Award four different times. See Ghosh, "Free/Libre/Open Source Software in Government," *supra* note 80 at p. 6. See also Marson, "Europe and the US Philosophically Divided on Open Source?" *supra* note 65, which reports that its policies involved the use of "Linux on 70,000 PCs and 400 servers in schools," as well as the deployment of "open source operating system on 14,000 PCs and 34 servers at hospitals and health centres across the region."

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4. SOME WRONG METAPHORS AND THE BRAZILIAN QUEST FOR DEMOCRACY

THE SOLID GLOBAL MOVEMENT TOWARDS the adoption of FLOSS in public administrations can be convincingly shown, as discussed above. Such a worldwide movement does not rely upon purely objective factors. It shows that even for those countries which did not formally mandate the adoption of FLOSS, which is most of them, there seems to be a sense of duty with respect to the establishment of guidelines for a concrete policy of migration. It does not seem acceptable in light of all the arguments presented that the status quo can continue, even though the arguments in support of FLOSS adoption often seem more subjective and less pragmatic. The status quo cannot continue because, more than an "aspiration," the adoption of FLOSS is grounded on a deontological argument. But if there is a duty, where does it stem from?

To get to the origin of such a duty, some mischievous metaphors must first be dispelled. These are frequently raised by detractors of the FLOSS movement, who seek to inculcate in stakeholders a sort of prejudice against the adoption of programs licensed in a less restrictive regime. Their intent is to paint free software communities as groups of fundamentalists, whose ideologies are a strange assemblage of religion with communism, backed by a precarious legal strategy.

To this end, the FLOSS movement is frequently described as quasi-religious. The community is portrayed as sharing fundamentalist and dogmatic values which are often associated with religious sects. The image of Richard Stallman posing as Saint IGNUcius[87] is emblematic of this claim and undermines the movement being regarded more seriously. The opponents of FLOSS usually describe the group as characterized by an ideology of poverty, suffering, and aspiration, and thus, as antagonistic to every possibility of profit or marketability.[88] Other times, FLOSS developers, and all those opposed to an unlimited strengthening of the intellectual property system, are also portrayed as a group of unabashed communists who want to eliminate any sort of incentive for innovation. Heading the offensive against open access defenders is former Microsoft President, Bill Gates, who stated in an interview in 2005, "[t]here are some new modern-day sort of communists who want to get rid of the incentive for musicians and moviemakers and software makers under various guises. They don't think that those incentives should exist."[89] This declaration caused the prompt reply of Richard Stallman, who sharply observed that, if this were true, then "an open Internet with protocols anyone can implement" would also be

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87. See Williams, *Free as in Freedom*, *supra* note 13 at p. 116.
88. At this point the free software and the open source movements would split. The latter, as seen above, would be based upon the idea that the values of openness and freedom must be voluntarily assumed by users and developers, and not be the object of a duty to be assimilated by means of a catechetical process. Sam Williams tells the story of a conference in which Stallman and Linus Torvalds spoke together, and Torvalds admitted that he was a fan of Microsoft's PowerPoint program. "From the perspective of old-line software purists, it was like a Mormon bragging in church about his fondness of whiskey. From the perspective of Torvalds and his growing band of followers, it was simply common sense. Why shun worthy proprietary software programs just to make a point? *Being a hacker wasn't about suffering, it was about getting the job done.*" See Williams, *Free as in Freedom*, *supra* note 13 at p. 157 (emphasis added).
89. Michael Kanellos, "Gates: Restricting IP rights is Tantamount to Communism," (6 January 2005) *ZDNet UK*, <http://www.zdnet.co.uk/insight/software/windows/0,39020478,39183197,00.htm>.

communism—and communism supported by that famous communist agent: the US Department of Defense.[90]

Neither the metaphors of religious zealots nor communists captures what the FLOSS movement really is: a movement for rights that is completely intertwined with the democratic principle. As such, I suggest a third metaphor, one that compares the GPL to a constitution. Maureen O'Sullivan, Senior Lecturer and respected advocate of the FLOSS movement in Europe, explains the quasi-constitutional facet of the GNU GPL:

> The GNU GPL is a rather loquacious licence, which includes an aspirational preamble closely resembling that of many constitutions and laden with moral prescription. Whereas constitutions often profess to take their cue from a heavenly body, the GNU GPL hones in on a devilish icon to be eschewed at all costs: that being the archetypal proprietary software licence. [...] The Preamble holds as its ideal the freedom of its users and "territory" from colonisation. It is an assertion of the sovereignty of open source participants against those who refuse to reveal their source code and appears to operate within a defined on-line territory.[91]

Indeed, one might suggest that the GPL, with respect to the values that are reflected in its text, worked by acknowledging the actual relation of forces within the free software community, that which the late Ferdinand Lassalle, in a famous speech, identified as the essence of all constitutions.[92] It reflected those values which the community perceived as inalienable rights. As Richard Stallman points out in *Free Software, Free Society*:

> The goal of GNU was to give users freedom, not just to be popular. So we needed to use distribution terms that would prevent GNU software from being turned into proprietary software. The method we use is called copyleft. [...]The central idea of copyleft is that we give everyone permission to run the program, copy the program, modify the program, and distribute modified versions—but not permission to add restrictions of their own. Thus, *the crucial freedoms that define "free software"* are guaranteed to everyone who has a copy; they become inalienable rights.[93]

90. Richard Stallman, "Bill Gates and Other Communists," (15 February 2005) *News.com*, <http://www.news.com/Bill-Gates-and-other-communists/2010-1071_3-5576230.html>.

91. Maureen O'Sullivan, "Making Copyright Ambidextrous: An Expose of Copyleft," (2002) 3 *Journal of Information, Law and Technology*, <http://www2.warwick.ac.uk/fac/soc/law/elj/jilt/2002_3/osullivan/> at p. 7. In the same sense, Sam Williams quotes *ZDNet software* columnist Evan Leibovich, who observes that "[j]ust as the Magna Carta gave rights to British Subjects, the GPL enforces consumers rights and freedoms on behalf of the users of computer software." Williams, *Free as in Freedom*, *supra* note 13 at p. 111, quoting Evan Liebovitch, "Who's afraid of the Big Bad Wolves?" (14 December 2000) *ZDNet*, available at Internet Archive, <http://web.archive.org/web/20070814060401/http://techupdate.zdnet.com/techupdate/stories/main/0,14179,2664992,00.html>.

92. "[T]he *actual* constitution of a nation lies in the real, actual relation of forces existing there, written constitutions are valid and stable only when they correctly express the actual relation of forces in a society [...]. *The actual relation of forces* in a given society constitutes the actively operating force which determines all laws and juridical institutions of this society in such a way that they cannot be other than what they are in their essential characteristics." Ferdinand Lassalle, "On the Essence of Constitutions (Speech Delivered in Berlin, April 16, 1862)," (1942) 3:1 *Fourth International* 25–31 <http://www.marxists.org/history/etol/newspape/fi/vol03/no01/lassalle.htm> at pp. 26, 31.

93. See Richard Stallman, "The GNU Project," in Joshua Gay, ed., *Free Software, Free Society: Selected Essays of Richard M. Stallman*, 1st ed. (GNU Press, 2002) 17–32, <http://www.gnu.org/philosophy/fsfs/rms-essays.pdf> at p. 22 (emphasis added).

The allusion to Four Freedoms (run, copy, modify, and distribute) as basic inalienable rights is not innovative, recalling former American President Franklin Roosevelt's speech to Congress on January 6, 1941, known as the "Four Freedoms speech." In his speech Roosevelt described four basic freedoms—freedom of speech and expression, freedom of worship, freedom from want, and freedom from fear—which later came to be posited in the *Universal Declaration of Human Rights*, whose preamble foresees that the "advent of a world in which human beings shall enjoy freedom of speech and belief and freedom from fear and want has been proclaimed as the highest aspiration of the common people."[94]

Even though it would be quite outlandish and unrealistic to state that the GPL is really a constitution, the GPL is like a constitution in the way that FLOSS licensing schemes tend to reflect the actual relation of forces in society. To a great extent, these schemes mirror the societal values of our time, our general conception of the good, and our natural perception of rights. Constitutional and human rights are certainly much more adequate metaphors for the freedoms of the FLOSS movement than any prejudicial references to religion or communism. Raised to the broader scope of public policy, however, those same freedoms cease to be mere metaphors and actually reflect values and principles that should be welcomed and fostered in a democratic regime.

In light of these values, Sergio Amadeu da Silveira, at the time heading the Brazilian Government's public policies on FLOSS, stated, when sued by Microsoft for, among other things, "excess in freedom of speech and *freedom of thought*"[95]:

> I'd like to register that the purchase of software that preserves the values of openness and freedom is, for the Brazilian government, a *subject unavoidably connected to the democratic principle*. And as it has been a long and painful path to reach our current democratic developmental stage in this country, we will not walk out [of] our fight. If democracy is a value full of ideology, it will

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94. Franklin Delano Roosevelt, "The Four Freedoms," Speech to the 77th US Congress (6 January 1941), <http://www.americanrhetoric.com/speeches/fdrthefourfreedoms.htm>. *Universal Declaration of Human Rights*, G.A. Res. 217 A (III), U.N. Doc. A/810 (United Nations, 10 December 1948), <http://www.un.org/Overview/rights.html> at Preamble.

95. Microsoft's suit was filed because of declarations of Sergio Amadeu to a major Brazilian magazine with respect to the practices of software vendors in the proprietary regime. In line with arguments of economists such as Shapiro and Varian, who wrote about the technological *dependency* and *imprisonment* of companies in the proprietary regime, Sergio Amadeu supposedly made a comparison between the practices of Microsoft and those of a "drug dealer." For Lawrence Lessig's comments on the case, see Lawrence Lessig, "The Local Ordinance We Call the First Amendment," blog posting to *Lessig's blog* (18 June 2004), <http://www.lessig.org/blog/archives/001983.shtml> (emphasis added). For a translation of the complaint, see "Demand for Explanation of Microsoft Informatica Ltda," (7 June 2004), available at *Lessig's blog*, <http://www.lessig.org/blog/archives/msft_complaint.pdf>, submission to *Microsoft v Amadeu* (BRA, Criminal Court of the District of Barueri, State of Sao Paulo). It is interesting to note that some years before, at a conference at the University of Washington, Bill Gates himself had affirmed: "Although about three million computers get sold every year in China, people don't pay for the software. [...] Someday they will, though. And as long as they're going to steal it, we want them to steal ours. They'll get sort of addicted, and then we'll somehow figure out how to collect sometime in the next decade." Reprinted in IDG.Net, "Microsoft in China: Clash of Titans," *CNN.com* (23 February 2000), <http://archives.cnn.com/2000/TECH/computing/02/23/microsoft.china.idg/>.

never be an insignificant value. If democracy is a dream, it's the one dream this country will never wake up from. The future is free.[96]

Brazil has quite a paradigmatic story to tell with respect to the adoption of FLOSS, though not so much for its dimension and organization, since the achievements of the Brazilian program have still not been successfully measured, and even within the government FLOSS policies have followed a somewhat discursive organization. Brazil has many local prefectures adopting laws mandating the use of FLOSS, and many ministries within the Federal Government that have opted to migrate towards its adoption. Brazil, however, lacks a more solid legal framework with respect to its procurement processes for contracting software services, which makes it particularly subject to lobbying by traditional software vendors. Its distinguishing characteristics are that since 2003 the government of President Luis Inacio "Lula" da Silva has been seeking to create a national policy which is declaredly based upon the democratic principle. As Cukierman and Pinheiro observe, "[c]urrent government policies in Brazil are linked essentially to the principles of freedom as expressed in free software, inseparable from the kind of democracy that the nation wants to establish."[97]

The Brazilian Federal Government's Reference Guide of Migration to Free Software ("Guia Livre") very eloquently states:

in the end the Government will always have before it two different ways of contracting [software]. One by which the Government and its citizens preserve more rights—rights inherent to Democracy—and another by which Government and citizens abdicate from those same rights. They are two different models of contracting. Choosing one or the other is not an option for the Government: it is, actually, a duty. The Government has the duty to contract preserving the values *freedom* and *openness*. The Government has the duty to contract in the better way for its citizens.[98]

With respect to Amadeu's declaration, it is emblematic that it followed a statement by Emilio Umeoka, president of Microsoft in Brazil, who, in an allusion to the time when Brazil restricted the importations of information technology goods in order to develop a competitive industry of its own, affirmed that if Brazil, with respect to FLOSS, restricted the sector again like it had done in the past it would "*wake up* and be dominant in something insignificant." Umeoka's declaration also noted that in some sectors and ministries the approach would be "much more *ideological*, not based on the *technical area*."[99]

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96. Quoted in Alexandre Silva Pinheiro and Henrique Luiz Cukierman, "Free Software: Some Brazilian translations," (2004) 9:11 *First Monday*, <http://www.firstmonday.org/issues/issue9_11/pinheiro> (emphasis by Pinheiro and Cukierman). For a thorough and rich analysis of the FLOSS movement in Brazil, see Julian Dibbell, "We Pledge Allegiance to the Penguin," (2004) 12.11 *Wired Magazine*, <http://wired-vig.wired.com/wired/archive/12.11/linux.html>: "We pledge allegiance to the penguin, and the intellectual property regime for which he stands. One nation, under Linux, with free music and open source software for all. Welcome to Brazil!"
97. Pinheiro and Cukierman, "Free Software," *supra* note 96.
98. Casa Civil da Presidência da República, Comitê Executivo do Governo Eletrônico, and Ministério do Planejamento, Orçamento e Gestão, "Guia Livre: Referência de Migração para Software Livre do Governo Federal," (BRA, 2005), < https://www.governoeletronico.gov.br/anexos/E15_469GuiaLivreV1.pdf/download > at p. 46 (author's translation).
99. Reuters, "In Brazil, Microsoft decries Linux use," *ZDNet News* (4 June 2004), <http://news.zdnet.com/2100-3513_22-5226503.html>.

This leads back to the differences between bureaucrats and officers of a democratic government, and invites the question: what if the affected technical area is constitutional theory or the constitution itself? Is democracy an insignificant value? Is it a dream? Is democratic ideology an evil to be combated? Here lies precisely where the detractors of free software fail to reveal what is wrong with government support of FLOSS principles. The part that follows will try to show why this is so by framing the question of the adoption of FLOSS by national governments as distinct perspectives of the democratic principle. It will explain from the standpoint of legal policymaking why governments should not only prefer using and fostering the development of FLOSS programs, but undertake this as a duty.

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5. A DEMOCRATIC FRAMEWORK FOR EVALUATING AND ADOPTING FLOSS

5.1. The Democratic Principle, Technology, and Social Justice

AS JJ GOMES CANOTILHO, Chair of Constitutional Law at the University of Coimbra, explains in his treaty on constitutional law and constitutional theory, Lincoln's formulation of a "government of the people, by the people, for the people" is still the most impressive synthesis of the essence of a democracy because it establishes a positive and substantial justification of the democratic principle, and not a merely negative and procedural defence of democracy as a means for selection, destitution, and limitation of stakeholder powers.[100] In this sense, the democratic principle would be inherent to an open[101] and active society, a society that grants its members the possibility of a holistic development of their personalities, in conditions of economic, politic, social, and cultural equality, as well as the freedom to take part in a dynamic political process where there is no schism between government and governed, but actually a continuous interplay between them throughout all the dimensions of political life. It is thus a principle with substantive and procedural dimensions: substantive because it conditions the political process to the pursuit of certain ends and to the fulfilment of certain values and principles (for example popular sovereignty, observance of the human rights, pluralism of expressions, and democratic political organization); and procedural because it links the legitimization of power to the observance of certain rules and procedures.[102] In the words of Canotilho, the democratic principle establishes itself, as a "form of life, form of rationalization of the political process, *and* form of legitimisation of the power. The democratic principle, as constitutionally posed, is more than a *method* or *technique* for the governed choosing the government, since, as a *normative* principle, considered in its several aspects political, economic, social and cultural, it aspires to turn into the leading impulse of a society."[103]

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100. JJ Gomes Canotilho, *Direito Constitucional e Teoria da Constituição* (Almedina, 2003) at p. 287 (emphasis added) (author's translation).
101. Though one substantially different from that advocated by Karl Popper. See Karl Popper, *The Open Society and Its Enemies*, 2d ed., vol. 1 (Princeton University Press, 1971).
102. Canotilho, *Direito Constitucional e Teoria da Constituição*, *supra* note 100 at p. 288–289.
103. Canotilho, *Direito Constitucional e Teoria da Constituição*, *supra* note 100 at p. 288.

In the same sense, Antonio-Enrique Pérez Luño,[104] Chair Professor of Philosophy of Law of the University of Seville, calling for a rescue of the original meaning that the expression *rule of law* ("Estado de Derecho") had before it was influenced by legal positivism, at a time when natural rights were considered to be a revolutionary threat, explained that the key for an analytic definition of the *rule of law* lies in showing the strict relation that exists between its ideological component and its technical-formal structure. Its ideological component is generally identified with the quest for justice (and thus for the human rights of freedom and equality), while the main objective of its technical-formal structure is to create an environment of legal safety for the development of the activities of the state.[105]

In sum, it is possible to say, first, that the democratic principle has ideological and normative content and can hence be addressed by different theories. Some prefer to identify this ideology as a minimalist one, where the role of the state is merely to preserve negative rights by offering security for the development of social relations, and the role of the citizen is merely to vote. Others, such as Canotilho and Pérez-Luño, identify the ideology with promoting *social justice*[106] and then contrast this theory of the democratic principle to a mere negative or structural concept of democracy (that of the suffrage). The democratic principle is also procedural, but it is much more than this. Second, by understanding the democratic principle in a positive fashion as the leading impulse of a society, one needs to understand as well that its values must be sensed in all dimensions of societal life, including the most intense power in contemporary society: the market.

It can thus be concluded that markets are not a strange concept to the democratic principle and to its ideals of social justice. As Bruce Ackerman points out:

> It is easy to view "liberty" and "equality" as if they were inexorably at war with one another. Easy, but a mistake. The great project of liberal political philosophy, over the last generation, has been to reject the false dichotomy between "leveling" equality and "free" markets that has had such a baleful influence over the modern mind. The challenge has been to reconstruct the tradition of the liberal Enlightenment to achieve a deep reconciliation of these superficially competing ideals.[107]

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104. Professor Pérez-Luño, one of the greatest continental European authorities in human rights and jurisprudence, is also a European pioneer in Information Technology Law ("Derecho de la Informática" or "Diritto dell'Informática"), together with Mario Losano and the late Vittorio Frosini.

105. Antonio-Enrique Pérez Luño, *Derechos Humanos, Estado de Derecho e Constitución* (Tecnos, 2001) at p. 243.

106. Let me express that by social justice I do not intend to reflect Rawls' understanding of justice as fairness. The most obvious reason is that here I do not advocate a framework of political neutrality, as Rawls would, with his understanding that "[j]ustice as fairness [... does not] try to evaluate the relative merits of different conceptions of the good." John Rawls, *A Theory of Justice*, rev. ed. (Oxford University Press, 1999) at pp. 80–81. For an interesting account of neutrality in Rawls and other authors, see George Sher, *Beyond Neutrality: Perfectionism in Politics* (Cambridge University Press, 1997). I would rather suggest, as Joseph Raz did in his *The Morality of Freedom*, that "there is nothing [in my theory] which speaks for neutrality. For it is the goal of all political action to pursue valid conceptions of the good and to discourage evil or empty ones." See Joseph Raz, *The Morality of Freedom* (Oxford University Press, 1986) at p. 133. As it focuses on values, or, more particularly, on those values which it understands as righteous reasons for action, this article professes a particular conception of the good. And it is a conception of the good which would be very unlikely to be captured by Rawls' idea of an original position of equality (where human ambitions would be beautifully covered by an imaginative veil of ignorance). State intervention in the market (for instance by using its purchase power) to promote wider avenues in which knowledge can be shared against traditional defences of full blooded ownership of intellectual goods is certainly not something which a liberal neutralist author would defend.

107. Bruce Ackerman and Anne Alstott, "Why Stakeholding?" (2004) 32:1 *Politics & Society* 41–60 at p. 41.

In the same spirit, Crawford Macpherson, in a visionary essay written in 1973 about the interplay between technology and democratic theory, argued that the Western concept of democracy was founded on an individualistic root that restricts democracy to a political concept, and "puts a high value on individual freedom of choice."[108] That is to say, developed upon the doctrines of Locke and Bentham, "[t]he liberal market postulates were well entrenched before the liberal theory was transformed into liberal-democratic theory."[109] Hence, according to Macpherson, the entrenchment of market postulates "meant the entrenchment of a peculiar concept of man's essence. The pre-democratic liberal theory was based on a concept of man as essentially a consumer of utilities, an infinite desirer. "Man was essentially a bundle of appetites demanding satisfaction."[110] Between claims for equality or for security for property, even an unequal property, the liberal market postulates, as well as liberal democracy, would have no doubts in choosing to preserve security.[111]

That which Ackerman acknowledges as the greatest project of political philosophy over the last generation is argued by Macpherson to be a quest which actually dates to the nineteenth century, when different critics of the market morality, especially John Stuart Mill, sought to reconcile the values of liberal individualism with the ancient values of natural law, then perceived as being denied to the working class. The idea was no longer to conceive man as an infinite desirer, whose personality could unlimitedly expand over the personality of others, but to assert "an equal right of every individual to make the most of himself."[112] Mill's attempts failed in practice. As Macpherson argues, "we still rely on the capitalist market incentive of a right of appropriation, no longer quite unlimited (for our tax structures generally set an upper limit) but with a limit so high as to be far beyond the reach of most men, and so, for them, virtually unlimited."[113]

For Macpherson, however, technology would present new possibilities for demoting that mercantilist concept of an individual as an infinite desirer and appropriator, or at least its justification. Such an idea was initially conceived as necessary for providing incentives to engage in the productive process, turning people into labourers and consumers in the service of industrial activity. Now, however, technology shifts that process. First because, "by releasing more and more time and energy from compulsive labour, [it] allow[s] men to think and act as enjoyers and developers of their human capacities rather than devoting themselves to labour as a necessary means of acquiring commodities."[114] Secondly, it renders the idea of scarcity, which had been for millennia the general human condition, obsolete. In contrast, technology now multiplies productivity, and, I would add, turns the centrality of our economy and social life into the unlimited universe of intangible goods. Nonetheless, as Macpherson acknowledges, "we are in danger of having [scarcity] riveted on us in a newer and more artificial form."[115] As he says:

108. Crawford B Macpherson, "Democratic Theory: Ontology and Technology," in CB Macpherson, *Democratic Theory: Essays in Retrieval* (Oxford University Press, 1973), 24–38 at p. 25.
109. Macpherson, "Democratic Theory," *supra* note 108 at p. 26.
110. Macpherson, "Democratic Theory," *supra* note 108 at p. 26.
111. Macpherson, "Democratic Theory," *supra* note 108 at p. 26.
112. Macpherson, "Democratic Theory," *supra* note 108 at p. 32.
113. Macpherson, "Democratic Theory," *supra* note 108 at p. 33.
114. Macpherson, "Democratic Theory," *supra* note 108 at p. 37.
115. Macpherson, "Democratic Theory," *supra* note 108 at p. 38.

> [T]wentieth (and twenty-first) century technology will make possible the realization of the more democratic concept of man's essence; but that technological change in our lifetime, if left to operate by itself within the present social structure and guided only by our present ambivalent ontology, without a conscious reformulation of the concept of man's essence appropriate to the new possibilities, is as likely to prevent as to promote the realization of liberal-democratic ends. It is in this sense that I regard the race between ontological and technological change in our society as *fateful*."[116]

In the same spirit, Tambini, Tsagarousianou and Bryan explain in *Cyberdemocracy* that, on one hand, new media technology may provoke a "rebirth of democratic life," with the opening of new public spheres.[117] On the other hand, however, *citizen rights* are being replaced with consumer rights in a market that, if left to its own devices, will ensure that "ideals other than [its own] have a minor role in the debates." It seems the answer to the questions they raise is in the affirmative: "Are we witnessing a carve-up of new market possibilities by telecommunications service providers and computer firms? An attempt to make the democratic process dependent on their technology?"[118]

The idea that we should democratize markets or foster the promises of technology does not equate to a communist venture. Freedom of initiative is not an ideal to be abolished, nor is the market *per se*. What contemporary political theory seeks to portray is that the classic liberal-democratic tradition needs to be revisited in light of the ideals of social justice, extending the democratic principle through other venues than simply that of the election, control, and destitution of the stakeholders. Of course, different conceptions of liberal democracies around the world exist, and they are reflected, for instance, in different perceptions of economic, social, and cultural rights. American and continental European ideologies differ in this respect, and this does not make Europe a communist redoubt.

And so it happens with respect to FLOSS. As will be argued in the parts below, the values shared by the FLOSS movement could be justified in many dimensions under the democratic principle, if one had an extended comprehension of what such a principle aims toward: granting an equal right of every individual to make the most of himself, be it with respect to exerting the share of control on the political institutions, fulfilling cultural self-determination, enjoying the outputs of an ethics of solidarity, or taking part in the process of economic and social development of the country or even the global networked society.

Some, as discussed above, seek to paint (and, here, welcome) the quest for FLOSS as a communist venture, calling for the "[a]bolition of all forms of private property in ideas."[119] Others assume that free software is just an expression of the bigger framework of a different mode of production, called "commons-based peer production," which would benefit from a "systematic advantage

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116. Macpherson, "Democratic Theory," *supra* note 108 at p. 25 (emphasis added).
117. Cathy Brian, Damien Tambini, and Roza Tsagarousianu, "Electronic Democracy and the Civic Networking Movement in Context," in Roza Tsagarousianu, Damien Tambini, and Cathy Brian, eds., *Cyberdemocracy: Technologies, Cities and Civic networks* (Routledge, 1998) 1–17 at pp. 3–5.
118. Brian, Tambini and Tsagarousianu, "Electronic Democracy," *supra* note 117 at p. 8.
119. Eben Moglen, "The dotCommunit Manifesto," (January 2003), <http://moglen.law.columbia.edu/publications/dcm.html> at p. 7.

over markets and firms in matching the best available human capital to the best available information inputs in order to create information products."[120] Whether one would align more to the right or to the left in the debate is not the question that this article seeks to answer. In effect, I do not see the "copyleft regime" as intrinsically rightist or leftist. I prefer to characterize it, following O'Sullivan's creative construction,[121] as ambidextrous. Indeed, the FLOSS movement is an attempt to reconcile the ideals of freedom and equality with respect to the information age. It is as leftist or rightist as the normative or ideological values present in the democratic principle itself. It is a movement of balance, which in most cases relies upon an innovative construction (the copyleft clause) to invert some values of the current imbalanced intellectual property system, promoting what has been increasingly recognized as the right of access to knowledge.

An eventual intertwinement of FLOSS and the democratic principle might define the comprehension of public policies concerning FLOSS as deontological, and thus not simply as an aspiration. As soon as all are entitled to a membership with respect to the democratic system and that states should obviously promote democratic values, there would be no excuse for failing to adopt FLOSS—unless in exceptional circumstances when higher harms to the public interest could stem from immediate adoption, or cogent public policies could justify secrecy. As expressed in the Brazilian guide for migration,[122] as between two different contractual choices (FLOSS or "proprietary"), one that grants to society more rights and values that are compatible with the democratic principle, and another that extirpates those same rights and values from societal life, there is not a stark moral choice or even a choice at all; there is only a duty. That division which exists between open source and free software, creating an aspirational movement from one and a deontological one from the other, could not take place with respect to the question of embracing democracy or not.[123]

Democratic principles are in general normative and programmatic, as extensively expressed in many post-war constitutions. Nonetheless, democracy is not a mere emotional experience. Even though it may also have a sensitive dimension, democracy is much more. It is an objective goal to be pursued unremittingly. It is *per se* a program of government, a duty of care. The constitutional reflection of the democratic principle is perhaps the closest one can get to the *grundnorm* of a country – the source from which all other legal norms and, under them, policies extract their validity. Thus when a constitution speaks about the rule of law or about democratic rights, it is not just saying that this is *good*, but it is saying that this is *due*.

As seen above, one may seek to draw the distinction between civil and political rights, on one hand, and economic, social and cultural rights, on the other hand, to say that the latter category implies only a moral of aspiration, the obligation of a state "to take steps […] to the maximum of its available resources, with a view to achieving progressively the full realization" of those rights, as framed in the *International Covenant on Economic, Social and Cultural*

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120. Benkler, "Coase's Penguins," *supra* note 15 at pp. 375, 444.
121. O'Sullivan, "Making Copyright Ambidextrous," *supra* note 91.
122. See Casa Civil da Presidência da República, Comitê Executivo do Governo Eletrônico, and Ministério do Planejamento, Orçamento e Gestão,, *Guia Livre*, *supra* note 98 at p.46.
123. See Fuller, *The Morality of Law*, *supra* note 25 at pp. 5–6, 11.

Rights.[124] Others, however, would promptly note that, with respect to the right to access, the Commitment achieved in the Tunis Round of the World Summit on the Information Society[125] pontificated that UN Member countries:

> *shall strive* unremittingly [...] to promote universal, ubiquitous, equitable and affordable access to ICTs [...] everywhere, to ensure that the benefits are more evenly distributed between and within societies, and to bridge the digital divide in order to create digital opportunities for all and benefit from the potential offered by ICTs for development.[126]

One may still add to this the fact that the right to access is neither merely nor mostly an economic, social, or cultural right. It has of course these expressions, but it is also based upon a full commitment to achieving the democratic principle in all dimensions of societal life, including, as demonstrated above, the civil and political expressions that are at the very root of the liberal comprehension of the democratic principle.

With an awareness of all the dimensions of the democratic principle with which the FLOSS movement intertwines, it is possible to disagree with arguments such as those raised by David S Evans and Bernard Reddy in a study developed by the Cambridge, Massachusetts-based NERA Economic Consulting firm, at the request, and with the support, of Microsoft Corporation. That study, criticizing arguments of Lawrence Lessig in support of the obligatory adoption of FLOSS by governments, favoured an objective approach to FLOSS. In its economic analysis of governmental intervention on the software market, the study began by invoking postulates of modern economics and authors, such as Adam Smith, to defend the propositions that "market forces generally do a rather good job by themselves at maximizing social welfare"[127] and that the fact that "the

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124. *International Covenant on Economic, Social and Cultural Rights* (16 December 1966), <http://www.unhchr. ch/html/menu3/b/a_cescr.htm>, 993 *United Nations Treaty Series* 3 (entered into force 3 January 1976) at art. 2.1. Nonetheless, there is a great discussion concerning the justiciability of those rights (see, for instance, Henry Steiner and Philip Alston, *International Human Rights in Context: Law, Politics, Morals*, 2d ed. (Oxford University Press, 2000) at pp. 275–300), the Committee on Economic, Social and Cultural Rights of the United Nations (UN, CESCR) has already acknowledged, in its General Comment No. 9, that "there is no Covenant right which could not, in the great majority of systems, be considered to possess at least some significant justiciable dimensions." See UN, CESCR, *General Comment No. 09: The Domestic Application of the Covenant*, E/C.12/1998/24 (3 December 1998) at para. 10, <http://www.unhchr.ch/tbs/doc.nsf/0/4ceb75c 5492497d9802566d500516036?Opendocument>.

125. The World Summit of the Information Society (WSIS) was established by the Resolution 56/183 of the General Assembly of the United Nations, on 21 December 2001. Its first phase was held in Geneva in 2003, with the objective of asserting the political will of the stakeholders and establishing the foundations for a pluralistic Information Society. It resulted in the Geneva Declaration of Principles and Geneva Plan of Action. The second phase, held in Tunis last November, had the objective of putting in practice the Geneva Plan of Action and convening on solutions for the realms of internet governance, finance mechanisms and follow-up implementation of the Geneva and Tunis documents. See especially, United Nations, Internet Telecommunications Union, WSIS, *Tunis Agenda for the Information Society,* WSIS-05/TUNIS/DOC/6 (rev. 1), (18 November 2005),
<http://www.itu.int/wsis/docs2/tunis/off/6rev1.html>. As reported by the International Telecommunications Union, a specialized agency of the UN system responsible for the executive secretariat of the Summit, "nearly 50 Heads of state/government and Vice-Presidents and 197 Ministers, Vice Ministers and Deputy Ministers from 174 countries as well as high-level representatives from international organizations, private sector, and civil society attended the Tunis Phase of WSIS and gave political support to the Tunis Commitment and Tunis Agenda for the Information Society." United Nations, Internet Telecommunications Union, WSIS, *Basic Information: About WSIS* (17 January 2006), <http://www.itu.int/wsis/basic/about.html>.

126. United Nations, Internet Telecommunications Union, WSIS, *Tunis Commitment,* WSIS-05/TUNIS/DOC/7-E, (18 November 2005), <http://www.itu.int/wsis/docs2/tunis/off/7.html> at para. 18 (emphasis added).

127. David S Evans and Bernard Reddy, "Government Preferences for Promoting Open-Source Software: A Solution in Search of a Problem," (21 May 2002), <http://ssrn.com/abstract_id=313202> at p. 52.

market-generated allocation of resources is imperfect does not mean that the government can do better."[128] They conclude that there is neither a reported market failure in the software sector nor harmful externalities that would justify government intervention. The reason why governments intervene would be thus purely political, and not grounded on any technical merits. In their words:

> as users of software, governments face daily decisions about what software to use—decisions that, in general, are no different than the decisions that must be made by countless private firms and individuals around the world. When legislators get involved, however, these decisions have moved from the strictly technical/economic arena to the political. Much the same is true when administrators set up special commissions to consider whether to institute government policies that favour open source. Decisions based on the merits would not need such special commissions–private firms and individuals make their decisions without commission recommendations.[129]

Fortunately, governments do not decide purely as corporations; if they did, they would probably not be needed. By taking a broader perspective into account, governments must pursue that which is the general conception of the good, in whatever field they may address. Nothing which relates to the polis must be foreign to the political arena. There are no externalities to democratic theory.

5.2. FLOSS and Cultural Democracy

As Rod Dixon, Senior Attorney of the US Department of Education, very eloquently explained, computer source code is speech:

> Although the purpose of writing source code is not to draft letters to lovers or communicate contractual terms that may bind two parties,[130] source code can be read or understood by computer programmers, computer hobbyists, mathematicians, scientists, and other professionals who are trained in the particular programming language in which the source code is written.[131]

Hence, he argues, there would be sufficient grounds to protect the expression of this source code under the First Amendment of the US Constitution.

If computer code is speech, it is clearly something that influences the definition of human identity, that which Manuel Castells defined as "people's source of meaning and experience."[132] One may argue that up to now such influence has not been strong. It should not be forgotten, however, that computer software is not so old an invention, and that digital literacy is likely to increase with

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128. Evans and Reddy, "Government Preferences for Promoting Open-Source Software," *supra* note 127 at p. 55.
129. Evans and Reddy, "Government Preferences for Promoting Open-Source Software," *supra* note 127 at p. 57.
130. I would differ slightly from such a perspective, in the sense that many times legal relations are, indeed, instrumented by the code of computer programs, which are designed specifically to work as a constraint. This perspective will be described later in the article (see part 5.4 below).
131. Rod Dixon, "When Efforts to Conceal May Actually Reveal: Whether First Amendment Protection of Encryption Source Code and the Open Source Movement Support Re-Drawing the Constitutional Line Between the First Amendment and Copyright," (2000) 1 *Columbia Science and Technology Law Review* 3 <http://www.stlr.org/html/volume1/encryption.pdf>.
132. Manuel Castells, *The Power of Identity: Information Age, Economy, Society, and Culture*, 2d ed. (Blackwell, 2004) at p. 6.

time. In a nothing-forced analogy, one may think about the assimilation of written literacy throughout history and about its privileged status over many centuries. One may also analogize code to law,[133] and conclude that even though not every citizen is instructed in legal literacy, laws must be written in a clear way, so as to be understood by those who merely want to study it. And one may think of several institutions that were created by law and that spread over time to common understanding and defined particular characteristics of particular societies[134] that suddenly happened to define the way the whole world was established. Code is an early science. Its institutes are not dominated by all people. At least for the numerous groups that up to now have been joining in the communities of software development, each of those having its particular identity and sharing beliefs, principles, and values around lines of bits, one may certainly conclude that code, for them, *is* their identity. If we turn to the universe of academia and business, one will have an even greater account of the possibilities of code to define individual and collective sources of meaning and experience.

Human identities are generally framed in a relationship of power. In Castells's words:

> the social construction of identity always takes place in a context marked by power relationships[...]. [F]rom a sociological perspective, all identities are constructed. [...] [I]n general terms, who constructs collective identity, and for what, largely determines the symbolic content of this identity, and its meaning for those identifying with it or placing themselves outside of it.[135]

In this process, Castells argues, language holds a fundamental position, as an "attribute of self-recognition, and of the establishment of an invisible national boundary less arbitrary than territoriality, and less exclusive than ethnicity."[136] It is not without reason that many constitutions, to some extent, devote central articles to the establishment and regulation of the official language of a country. The succinct *Canadian Charter of Rights and Freedoms* devotes nothing less than eight of its thirty-four articles to the official languages of the country. Walter Ong tells us the story of the development of the Korean alphabet, which was decreed by King Sejong, of the Yi Dynasty, in 1443 AD. Until that time, there was not a Korean way of writing or a Korean identity with respect to their written culture. Due to the power of the Yi Dynasty, and to Sejong's decree, in three years a new alphabet was developed, simplifying the Korean tradition of writing with Chinese characters.[137]

An imposition like this would be impossible to accomplish today. The symbolic values that shape the development of a culture are becoming more and more concentrated in the hands of a few big market players that monopolize the construction of collective meaning, and at the same time are diluted through the fragmented and cacophonous discourses carried out on digital networks. States

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133. See especially, Lawrence Lessig, *Code and Other Laws of Cyberspace* (Basic Books, 1999).
134. For a formidable account on how the identity of the Roman and the Greek peoples were influenced by their laws and institutions, see Numa Denis Fustel de Coulanges, *The Ancient City: A Study on the Religion, Laws and Institutions of Greece and Rome* (John Hopkins University Press, 1980).
135. Castells, *The Power of Identity*, *supra* note 132 at p. 7.
136. Castells, *The Power of Identity*, *supra* note 132 at p. 55 (emphasis in original omitted).
137. Walter Ong, *Orality and Literacy: The Technologizing of the Word* (Methuen, 1982) at p. 92-93.

are increasingly turning into "nodes of a broader network of power."[138] In such a network, they are just part of a larger system in which individual identity is constructed by the "enacting authority and influence from multiple sources."[139]

Below, some technological reasons are identified that demand that computer programs be licensed in a regime of freedom and with access to their source code. What I seek to portray here is the potential of computer programs to impact the definition of human identity, the very meaning of human beings in their social relations and in their own reflection of themselves. Such potential, even if one focuses simply on the information that is immediately embedded in the source code of computer programs, may already bring an extremely powerful claim in support of licensing in a regime of freedom. Even if the semiological content of computer programs may seem only to affect programmers, the fact is that it is likely that computer literacy in the information age may expand to capture a much larger number of people than we can presently imagine. Further, the openness of computer programs is even more justified because their technological architecture may frame the way we live and perceive ourselves and our society.

For this reason, George Greve, President of the Free Software Foundation Europe, criticized *Time Magazine* for naming Bill and Melinda Gates as Persons of the Year for their donations of computers to poor African children. Greve argued that logically all the machines "are loaded with Microsoft Windows, in other words proprietary software. Like all proprietary software, it remains and puts the user under the control of the proprietor of that software."[140] Thus, alluding to Gates's speech about piracy in China,[141] Greve put it straightforwardly:

> What is true for China is also true for Africa. So in his own words, what Mr Gates is doing is addicting the African population and struggling economy to the products of his company. This sounds much like the cigarette industry distributing gratis cigarettes. Others have plainly compared it to the model of drug lords. And since little children always look good on TV, these ~~cigarettes~~ computers preferentially go to schools in Africa.[142]

What is clear is that computer programs, not only by the content of their code, but also by their functionalities, increasingly contribute to shaping the very meaning of people. By defining the modes of establishment of assorted human relations, those who write computer programs design the interface between the individual and the group and also contribute to the reflexive construction of the self. As social software, which Madison defines as the "technology that embodies evolving social patterns [...] [and] heightens the salience of informal, stable online groups,"[143] computer programs are a very relevant part in the construction of democratic discourse; they are an important constituent of the public sphere.

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138. Castells, *The Power of Identity*, *supra* note 132 at p. 357.
139. Castells, *The Power of Identity*, *supra* note 132 at p. 357.
140. George Greve, "When Doing Good Does Bad," in *Free Software Foundation Europe*, (22 December 2005), <http://www.fsfe.org/en/fellows/greve/freedom_bits/when_doing_good_does_bad>.
141. See IDG.net, "Microsoft in China," *supra* note 95.
142. Greve, "When Doing Good Does Bad," *supra* note 140 (strikeout in original).
143. Michael J Madison, "Social Software, Groups and Law," (2006) *Michigan State Law Review* 153–191 at p. 158, <http://ssrn.com/abstract=786404>.

As such, they must not escape the scrutiny of societal control. FLOSS principles provide for individual and collective control of democratic significations when the semiotic and functional values of computer programs are kept in a relationship of freedom where parasitic appropriation is not allowed. In a time where information and culture are becoming the central goods of political life, we must thus speak of a democratic culture or semiotic democracy.

In *Digital Speech and Democratic Culture*, Jack Balkin discusses the new features brought to the nature of freedom of speech by digital technologies in the information age. The digital revolution, he argues, places this freedom in a new light, rendering possible an amplified participation and interaction of individuals in the construction of societal meaning. It brings a democratic culture into existence, according to Balkin,[144] joining the choir of other authors such as William Fisher, in *Promises to Keep*, and John Fiske, in *Television Culture*, who speak of a *semiotic democracy*.[145]

Freedom of speech, Balkin argues, is an important ingredient in the constitution of human personality in the information age. It is a process that is both interactive and appropriative, benefitting from the properties of routing around (reaching audiences directly) and glomming on (appropriating things from the mass media as raw material for new creations), and which thus helps people to influence the semiological values of our time, collectively taking part in the definition of who they are. However, Balkin also presents the great contradiction of the digital age, which lies in the twofold nature of information. Indeed, at the same time that new information technologies aid individual participation in the cultural life, information is also an important source of wealth for businesses, which seek to "[shut] down or [circumscribe] the exercise of [...] freedom and participation."[146] Trying to profit from this twofold nature, media corporations invoke the constitution both to interpret "the free speech principle *broadly* to combat regulation of digital networks and *narrowly* in order to protect and expand their intellectual property rights."[147] That raises the problem that traditional free speech doctrines are more focused on a restricted understanding of the political speech process and less on individual autonomy to take part on the cultural discourse. A democratic culture, Balkin argues, is much more than representative democracy. It is linked to the protection of digital speech as "a social activity, a matter of interactivity, of give and take,"[148] which "creates new communities, cultures and subcultures."[149] Thus, if free speech has to do with democracy, it is with a cultural democracy, with something far broader than the idea of suffrage or mere "deliberation about issues of public concern,"[150] a democracy that favours the possibilities of "ordinary people [to] gain a greater say over the institutions and practices that shape them and their futures."[151] The protection of this new conception of freedom of speech (and democracy) demands also a

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144. Jack M Balkin, "Digital Speech and Democratic Culture: A Theory of Freedom of Expression for the Information Society," (2004) 79:1 *New York University Law Review* 1–58.
145. See William W Fisher III, *Promises to Keep: Technology, Law, and the Future of Entertainment* (Stanford University Press, 2004) at p. 28. See also John Fiske, *Television Culture* (Methuen, 1987) at p. 95.
146. Balkin, "Digital Speech," *supra* note 144 at p. 15.
147. Balkin, "Digital Speech," *supra* note 144 at p. 24.
148. Balkin, "Digital Speech," *supra* note 144 at p. 34.
149. Balkin, "Digital Speech," *supra* note 144 at p. 34.
150. Balkin, "Digital Speech," *supra* note 144 at p. 34.
151. Balkin, "Digital Speech," *supra* note 144 at p. 35.

reinterpretation of the role of governments, which are called upon to promote popular participation in communicative processes, open designs that are suited for societal control, and the enforcement of rights against censorship. It would also be necessary to change a rights-based discourse towards a perspective of values. That is to say, freedom of expression should be protected not only in face of a possible violation, but as a process *per se.* More than this, free speech values—of "participation, access, interactivity, democratic control, and the ability to route around and glom on"[152]—should be embedded in the very technological infrastructure of our society

Thus, when choosing between FLOSS and proprietary licenses, between one model that allows for the control of cultural values by the very people that will reflect them, and another model in which the process of collective signification is controlled by a small set of monopolist companies, which license, which model should the state embrace? Should the state, this institution whose relevance has been increasingly blurred by its incapability to ensure the preservation of important values for life in society, this entity whose very aptitude to govern has been lost day by day to big media, this fiction of which even the *procedural* meaning has been progressively missed in the democratic process, seek to regain its role in providing a safe-harbour for the development of human identity, or should it definitively give up to a takeover by the often insensitive forces of the market?

5.3. A New Social Democracy: Law, Ethics, and the Emotions of FLOSS

Law, in being just, cannot ignore the most important values that are shared by the society it seeks to rule. The theoretical separation between law and morality was a typical characteristic of legal positivism and of the particular liberal model it intended to serve. With the passing of the twentieth-century, whose second half was marked by a theoretical reconciliation between the law and societal values, particularly following repulsion against the barbarities committed during the Second World War under the "rule of law," there is no more room to ignore that a democracy must respect the ethics, and the ethos, of its time.

Unfortunately, however, and very paradoxically, classic liberal values are seemingly being revisited by the unevenly shaped intellectual property system of today. In response, as an obvious signal that something is not going right, peer-to-peer file sharing networks and other collaborative movements seem to develop as an identity of resistance against those dominant forces which have been forcefully legitimized by the rule of law. Anti-piracy campaigns carried out by advocates for the dominant intellectual property system, catechetical processes conducted by international organizations,[153] and education about intellectual property law seek to promote an ever stronger model of restrictions to the circulation of knowledge. Such model runs in opposite direction to the new sharing ethic that characterizes social processes in the information age.[154]

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152. Balkin, "Digital Speech," *supra* note 144 at p. 54.
153. See Pedro de Paranaguá Moniz, "The Development Agenda for WIPO: Another Stillbirth? A Battle Between Access to Knowledge and Enclosure," (1 July 2005), <http://ssrn.com/abstract=844366> at pp. 28 and ff.
154. See Andres Guadamuz, "The 'New Sharing Ethic' in Cyberspace," (2002) 5:1 *Journal of World Intellectual Property* 129–139 at p. 129.

In "Cyberlaw and the Norms of Science,"[155] Dan Burk raises a very interesting example of how the internet incorporates in its constitution the set of cultural values that were shared by the scientists who conceived its original characteristics. He claims that the early architecture of the internet reflected the ideals of the academics at that time. Its properties of being a means for sharing information in a decentralized and non-hierarchical fashion reflect, inter alia, the values of universalism (being impartial), communalism (building a commons for the free interchange of information), and independence (the ability of the scientist to manage his own research schedule) that were the values of its creators.

More generally, technologies have ethics, which are the ethics of their creators. But a social ethic also comes to exist with the independent life of a technology. This ethical circle expands in direct correspondence to the degree of penetration of a given technology in society. This is most evident, certainly, in the technologies that frame the cognitive values of humanity, that is, our capacity to understand and experience the world. Oral tradition, and oral societies, had their own ethics. That ethics was undoubtedly changed with the advent of the writing culture, which suddenly gave to the world the capacity to conserve information, revisit it, and build a dialogue based on the transmission of the ideas in a more stable and precise way. The ethics of literacy was, and certainly is, an ethics substantially different from the ethics of orality.[156]

But perhaps the ethics and the ethos of this world have never experienced such a strong transformation as the one that arose with the advent of information technologies, and particularly with the advent of the internet. Human perception of time and space was suddenly thrown into a whirlwind of hyper-connections that radically changed our understanding of the world and of ourselves. The possibility of touching the globe and sharing information in an unprecedented dimension caused the emergence of a new individual and a new ethic. Certainly the world is changing, but a revolution is also occurring within. As early as 1987, in *L'Uomo Artificiale: Ettica e Diritto Nell'Era Planetaria*, Vittorio Frosini, wrote about people of the technological age. He said:

> The man of the technological age is [...] different from the men of all the generations that have preceded him in his history, and not only because he is able to complete enterprises that in the past had been dreamed of but were never believed to be possible (like the ubiquity, multiple long distance conferences, spatial flights, the automated thought); but above all because man, able at the same time to communicate with all the other men living on the earth, to separate himself from life on the earth and to move in the world of machines created by men, to entrust himself to the machine for an exact thought, *has become a new man just in his inner image*.[157]

The inner image of these new individuals is not an image of complete autonomy. Individuals of the information age project themselves as a node of the network society. At the same time that they struggle to preserve the individual

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155. See Dan Burk, "Cyberlaw and the Norms of Science," *Boston College Intellectual Property and Technology Forum* (4–5 June 1999), <http://www.bc.edu/bc_org/avp/law/st_org/iptf/commentary/content/burk.html>.
156. Ong, *Orality and Literacy, supra* note 137.
157. Vittorio Frosini, *L'Uomo Artificiale: ettica e diritto nell'era planetaria* (Spirali, 1986) at p. 8 (author's translation) (emphasis added).

values of their inner sphere, they feel an undeniable desire to expand their personality towards others, towards the wider spheres of collectivity. For instance, from the original conception of an absolute right to privacy as developed by Samuel Warren and Louis Brandeis in 1891,[158] humanity came to an age where one speaks about the concept of an informational right of self determination. Such a right is not understood as merely "an intra-subjective value, but as the self-determination of the subject in the context of his relations with other citizens and with the public power."[159]

Indeed, as Frosini observes elsewhere:

> in today's mass society the principle of privacy, such as it was conceived, much as a puritanic myth, in an era characterized by the strong individualism of a rampant capitalism, is no longer accepted. [...] [T]he right to privacy has taken a new direction: it is no longer a purely negative attitude, whereby an individual tries to keep other people from interfering in his private life, refuses to allow information about himself to be circulated and renounces society (the old concept of "to be let alone"). On the contrary, this new approach is a positive one, whereby an individual affirms his freedom and dignity, places a limitation on computerized information power, and actively controls the means and the ends of such power.[160]

It is the perception that "both solitude and companionship have a part to play in forming human awareness to be a man."[161] In the networked society, freedom is exercised in reciprocity. It is not being free of the others. It is being free by means of the others.[162]

As this new individual expands towards and through others, a very different society in its own image is also formed. In "The Hacker Ethic as the Culture of the Information Age,"[163] Pekka Himanen argues that if we can speak of the relationship between the "Protestant ethic" and the capitalist ethic, as Max Weber did in *The Protestant Ethic and the Spirit of Capitalism*,[164] in the

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158. See Samuel D Warren and Louis D Brandeis, "The Right to Privacy," (1890) 4:5 *Harvard Law Review* 193–220, available at *Louis D Brandeis School of Law Library*, <http://library.louisville.edu/law/brandeis/privacy.html>.

159. Antonio-Enrique Pérez-Luño, *Manual de Informatica y Derecho* (Ariel, 1996) at p. 43 (author's translation).

160. Vittorio Frosini, *Law and Liberty in the Computer Age: The Harvard Papers* (Tano, 1995) at pp. 32, 34.

161. Frosini, *Law and Liberty in the Computer Age, supra* note 160 at p. 35.

162. Wolfgang Hoffmann-Riem [Justice of the German Supreme Court], "Liberdade como Autonomia Recíproca de Acesso à Informação," transcribed by Tércio Sampaio Ferraz Jr, in Marco Aurélio Greco and Ives Gandra da Silva Martins, eds., *Direito e Internet: relações jurídicas na sociedade informatizada* (Revista do Tribunais, 2001) at p. 242 (author's translation).

> The right to informational self-determination is thus not a private right of defence of an individual who cast himself aside of society, but seeks to make participation in communication processes possible to anyone. The others [human beings] constitute the social environment in whose limits the personality of each one expands: autonomy, and not the anomy, of the individual, is the image that directs the Constitution. Autonomy must be possible in socially connected vital spaces, in which freedom of communication—or better: freedom in common— cannot be oriented towards a concept that limits the protection to a self-centered protection, but needs to be understood as the exercise of freedom in reciprocity. This freedom does not mean being free *from* the others, but being free *by means* of the others. In modern communication relations the idea of the extension of *freedom in reciprocity* presents itself in an expressive fashion.

163. Pekka Himanen, "The Hacker Ethic as the Culture of the Information Age," in Manuel Castells, ed., *The Network Society: a Cross-Cultural Perspective* (Elgar, 2004) 420–431.

164. Max Weber, *The Protestant Ethic and the Spirit of Capitalism*, trans. Talcott Parsons, 2nd ed. (Scribner, 1930), <http://www.archive.org/stream/protestantethics00webe/protestantethics00webe_djvu.txt>. See extensive reference to Max Weber's works in Himanen, "The Hacker Ethic," *supra* note 163 at pp. 420–421, 427–428.

information age we can talk about the relation between "the hacker ethic" and the ethic, or the "work culture," of our time.[165] The network society, he clarifies, is still a capitalist society. But its ethic is of a passion for creation and for self-development and of a different relationship with time and money. He identifies this new culture with the culture of hackers (not the criminals, but the "heroes of the computer revolution," as described by Steven Levy[166]). The networked structure of contemporary society, the importance that the values of openness and sharing assume, and the willingness to play, explore, create, and share, reflect this positive attitude of the individual towards technology and others.

Hence, from whatever perspective one examines contemporary society—be it the inner image of an individual or the culture of the information age—those properties to which Burk referred engendered the development of a new morality. It is a new morality that is extremely different from those that preceded it and which thus has to be treated differently, and not necessarily in an analogous way. The conclusion is that the law ought to have a responsive attitude towards the moral values of today's society, and that this responsive attitude will not be fulfilled by bringing the rule of law to an amoral expression. Neither legal positivism nor scientific positivism can be desired goals if we want to protect individual and collective values. Legal positivism is the highest ambition of those who believe in the possibility of segregating law from the universe of moral reasoning; scientific positivism is the conception of those who think that society can be governed by the universal values of science. They are similar in the end: both forget that morality is always there, and that law, state, and society are not dissociable structures.

In September 2003, a study conducted by the Stanford Institute for Economic Policy Research (SIEPR) under the direction of Professor Paul A David[167] concluded that the motivation for developing FLOSS was rarely based on economic reasons. The results of a survey concluded that 77.8% of the developers deemed returning derivative works they created to the community of developers as important or very important; 68.6% of the respondents also pointed to promotion of the FLOSS mode of development as a reason to take part in the movement.[168] In another study, conducted by the MIT Sloan School of Management, Lakhani and Wolf show that a "central issue in F/OSS [Free/Open Source Software] research has been the motivations of developers to participate and contribute to the creation of a public good. The effort expended is substantial. Individuals on average contribute 14 hours per week."[169]

This raises the question, what kind of ethics should governments seek to foster in a democratic society? Should it be the emulative ethic of the proprietary

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165. Himanen, "The Hacker Ethic," *supra* note 163 at pp. 421, 424.
166. Stephen Levy, *Hackers: Heroes of the Computer Revolution*, 1st ed. (Dell, 1984).
167. Paul Allan David is Professor of Economics and Senior Fellow of the Institute for Economic Policy Research at Stanford University. He is Professor Emeritus of Economics and Economic History in the University of Oxford, where he is also an Emeritus Fellow of All Souls College, and currently Senior Fellow of the Oxford Internet Institute.
168. Paul Allan David, Andrew Waterman, and Seema Arora, "FLOSS-US: The Free/Libre/Open Source Software survey for 2003," *Stanford Institute for Economic Policy Research* (September 2003), <http://www.stanford.edu/group/floss-us> at p. 18.
169. Karim R Lakhani and Robert G Wolf, "Why Hackers do What They Do: Understanding the Motivation Effort in Free/Open Source Software Projects" in Joseph Feller *et al.*, eds., *Perspectives on Free and Open Source Software* (MIT Press, 2005) 3–21, <http://ssrn.com/abstract=443040> at pp. 18–19.

system or the ethic of sharing and solidarity which seems to inspire the FLOSS movement? In arranging a procurement process when it is possible to choose between those two different models, are there grounds to affirm that one or the other fits better into the democratic principle?

Choosing to embrace the particular ethic of a collaborative movement is not an unprecedented event in history. An interesting example is raised by Robert Merges. In "From Medieval Guilds to Open Source Software," Merges shows how states in a given moment ratified the statutes of medieval guilds, recognizing "norms [which] in the first instance [had been] generated by the members in response to the needs and demands of specific technologies and industries."[170] Analogizing guilds and the open source movement, Merges explains that both depended upon norms that were shared within communities and had a bottom-up origin and that those norms reflected shared values concerning what could be appropriated by the members of the community. Both guilds and FLOSS are "groups of technologists in which the work of individuals has been amplified by *sharing* and *combination* with others in the group."[171] Both are "clear embodiments of [a] collective spirit."[172]

Another question that could be asked is whether there is a particular kind of emotion that should be shared in a democratic state. Should states care about what sort of emotions are flourishing in its society? And, in this sense, would the FLOSS model rely on particular motivations that better fit into the democratic principle? These questions may seem strange, and excessively abstract, but there is a growing field in legal theory dedicated to the study of the interplay between law and emotions. As Rachel Moran observes:

> no matter how law struggles to evade the truth of emotion, feelings persist. For though they cannot be reduced to lofty abstractions, they are the essence of daily life. They endure and make us human in our everyday suffering and our illogical hope. [...] The power of authentic emotion, as much as and perhaps even more so than the authority of law, holds out the promise of shared humanity and an escape from hierarchy.[173]

In "Law and the Emotions," Eric Posner argues that "[o]ne reason for the neglect of emotions in legal theory may be that the dominant strains of normative legal theory—economic analysis, moral-philosophical analysis, and constitutional analysis—rely on methodologies that are not well suited to analyzing emotion."[174] However, "[b]y changing payoffs from behavior taken in emotion states, the law can influence both incentives in the emotion state and incentives to cultivate desirable emotional dispositions."[175] He further argues that "[f]ear, disgust, and the other emotions all have their different idiosyncrasies, and a well-designed

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170. Robert P Merges, "From Medieval Guilds to Open Source Software: Informal Norms, Appropriability Institutions, and Innovation," (13 November 2004), <http://ssrn.com/abstract=661543> at p. 12.
171. Merges, "From Medieval Guilds to Open Source Software," *supra* note 170 at p. 22 (emphasis added).
172. Merges, "From Medieval Guilds to Open Source Software," *supra* note 170 at p. 22.
173. Rachel F Moran, "Law and Emotion, Love and Hate," (2000) 11:2 *Journal of Contemporary Legal Issues* 747–784 at p. 784. See also Susan A Bandes, ed., *The Passions of Law* (New York University Press, 1999); Zenon Bankowski, *Living Lawfully: Love in Law and Law in Love* (Kluwer, 2001).
174. Eric A Posner, "Law and the Emotions," (2001) 89:6 *Georgetown Law Journal* 1977–2012, <http://ssrn.com/abstract=241389> at pp. 1977–1978.
175. Posner, "Law and the Emotions," *supra* note 174 at p. 1978.

legal system exploits them differently."[176] The law does engage with emotions on matters ranging from restrictions on cigar advertising to the celebration of national (or humiliation) days. Constitutional traditions value the pursuit of happiness. There is some controversy on the extent to which law should engage with the emotions of jurors. In all these matters, it does make sense to ponder on how (and to what extent) the design of legal institutions may elicit emotions that are of great societal significance. In our case, it is worth pondering on the role of emotions in the enablement of discourses that define the techno-political infrastructure of our societies – and that 'enframe' the culture and, in all this, the ethics of our time. The design of proper fora for the establishment of democratic discourses based upon and surrounding intellectual goods is one of the most important tasks for 21st century identity politics – and one deeply enrooted on the emotional aspects that permeate such discourses. These need to be addressed by states of the most different liberal affiliations, to the extent that such states purpose to be liberal ones.

　　　　In this sense, the two following questions can be asked. First, what kinds of emotions would be more beneficial to foster, and what kinds of emotions should be avoided in a democratic society in relation to the ways we and our governments deal with our intellectual creations? When we look into matters concerning FLOSS it is thus very important to consider, for instance, what kinds of policies should be developed to counter the legal strategy of the dominant agents of the market to create an atmosphere of Fear, Uncertainty and Doubt (FUD) to destabilize the adoption of FLOSS.[177] The techniques of claiming that FLOSS licenses are invalid, suing for software patent infringement, and threatening to sue governments with a legacy of pirate systems if they move towards less restrictive schemes are some of the various strategies that proprietary vendors have used to create a negative atmosphere for the adoption of FLOSS as a public policy. The same goes with the introduction of models that seek to inculcate an inaccurate semblance of freedom and hence generate confusion in a normative order for whose functioning the role of instruments like the General Public License is of so fundamental importance.

　　　　Second, we should also ponder on what attitudes could be expected from law with respect to the inherent emotionalism of FLOSS communities. Strongly subject to inflamed disagreements, communities of FLOSS developers are always on the verge of forking. Forking, as defined in the Wikipedia, happens "when developers take a copy of source code from one software package and start independent development on it, creating a distinct piece of software."[178] Even though it is a common occurrence, forking is considered to be a negative event, since it results in lost time, energy and, in some cases, money. Hence, also in this respect a public policy which seeks to approximate law and the state from the emotions experienced in a contemporary society could prove to be of particular interest to the development of FLOSS communities, and thus to the preservation of the same beneficial (and democratic) values that justify the adoption of FLOSS by the state.

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176. Posner, "Law and the Emotions," *supra* note 174 at p. 1981.
177. See Andrés Guadamuz González, "Legal Challenges to Open Source Licenses," (2005) 2:2 *SCRIPT-ed Journal of Law & Technology* 257–264, <http://www.law.ed.ac.uk/ahrc/script%2Ded/vol2-2/challenges.doc>.
178. "Fork (software development)," in *Wikipedia* (17 January 2007), < http://en.wikipedia.org/w/index.php?title=Fork_(software_development)&oldid=101299505>.

Problems related to the first question could be addressed by means of a clear mandatory framework with respect to FLOSS use by governments, with legal safe-harbours that protect users from badly intentioned campaigns of software monopolies, and campaigns that inform "uninformed users about the existence and the characteristics of [FLOSS],"[179] as well as about the inaccuracies of FUD techniques of propaganda. Problems related to the second could be addressed through procurement processes that require FLOSS projects to commit a group of developers to participate for a certain period of time, through economic incentives conditional on that requirement or through material or organizational incentives for the professionalization of FLOSS communities.

5.4. FLOSS and an Open Political Democracy

The third dimension of FLOSS, which could support the justification of its adoption by governments under the democratic principle, is easier to understand, even for those who do not adopt a very extensive conception of democracy—that is to say, it would justify FLOSS adoption even for those who restrict the democratic principle to its formal expression. In such a dimension, it will be argued, FLOSS can be understood as a decisive political instrument within the boundaries of traditional conceptions of citizenship itself.

Open source code renders possible an amplified participation of citizens in the universe of decisions relative to the *polis*. By having the possibility, by themselves or by others on their behalf, to know what the code that runs within their governments' computers says, citizens can have access to the infrastructure that determines how their governments work, to the architecture that defines the way by which several actions that have important implications on their lives will be carried out. Whether we should regulate code to be open also in relations that take place exclusively in the market is, of course, a very important issue, as the power of markets increases so as to equal or supplant the power that many governments have. However, this would exceed the scope of this analysis.[180] With respect to the code that runs in the computers of our governments, the argument here is that its development and licensing should be agreed to in ways that provide citizens with wider possibilities of control and thus of participation in the formal structure of the political process. Under the open government principle, transparency must be the rule, and opacity the exception. Be it with respect to the code that runs in polling machines or in electronic procurement systems, or with respect to dozens of other critical or ordinary governmental software applications, citizens have the right to know which instructions comprise the ghost in the machine.

It is important, therefore, to understand that if one accepts that code has equivalent properties to law, since it determines the way assorted relations are established, modified or extinguished, then law must be accessible to those affected by its commands. As Lawrence Lessig argues, "'free software'—or 'open source software' [...]—is itself a check on arbitrary power," "a structural guarantee

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179. Stefano Comino and Fabio M. Manenti, "Free/Open Source vs Closed Source Software: Public Policies in the Software Market," (July 2004), <http://ssrn.com/abstract=469741> at p. 1.

180. An interesting question could be raised, for instance, with respect to whether corporate governance regulations could have any say on the choice amongst different models of licensing.

of constitutionalized liberty."[181] "[O]pen code reduces the reward from burying regulation in the hidden spaces of code. It functions as a kind of Freedom of Information Act for network regulation. As with ordinary law, open code requires that lawmaking be public, and thus that lawmaking be transparent. [...] [O]pen code is a foundation to an open society."[182] Hence, "[i]f code is a lawmaker, then it should embrace the values of a particular kind of lawmaking. The core of these values is transparency. What a code regulation does should be at least as apparent as what a legal regulation does."[183] Lessig states even more clearly:

> I've argued for transparent code because of the *constitutional values it embeds*. I have not argued against code as regulator or against regulation. But I have argued that we insist on transparency in regulation and that we push code structures to enhance that transparency.
>
> The law presently does not do this. […] The law prefers opaque to transparent code; it constructs incentives to hide code rather than to make its functionality obvious.[184]

Likewise, in the recent *The Wealth of Networks*, Yochai Benkler presents several arguments in support of the adoption of FLOSS by states, including that FLOSS promotes:

> the *value of transparency* of software used for public purposes. […] The basic thrust of these arguments, […] is that free software makes it possible for constituents to monitor the behavior of machines used in governments, to make sure that they are designed to do what they are publicly reported to do. The most significant manifestation of this sentiment in the United States is the hitherto unsuccessful, but fairly persistent effort to require states to utilize voting machines that use free software, or at a minimum, to use software whose source code is open for public inspection.[185]

The open government principle, inherent to the democratic principle, very clearly identifies that whenever governments have the possibility to contract in a way that preserves the openness of computer source code, there is no justification for not doing so. Still, it makes one question how governments should proceed when there is no available software licensed within the FLOSS model: should governments contract proprietary software or should they develop their own solution? The creation of an international pool of software, building upon the database jointly maintained today by UNESCO and the Free Software Foundation, could prove to be an important policy to address those kinds of situations by increasing coordination between, and avoiding duplication of, efforts by national states.

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181. Lessig, *Code and Other Laws of Cyberspace*, *supra* note 133 at p. 7.
182. Lessig, *Code and Other Laws of Cyberspace*, *supra* note 133 at p. 108.
183. Lessig, *Code and Other Laws of Cyberspace*, *supra* note 133 at p. 224.
184. Lessig, *Code and Other Laws of Cyberspace*, *supra* note 133 at p. 225 (emphasis added).
185. Benkler, *The Wealth of Networks: How Social Production Transforms Markets and Freedom* (Yale University Press, 2006), <http://www.benkler.org/Benkler_Wealth_Of_Networks.pdf> at p. 322 (emphasis added).

5.5. FLOSS and Economic Democracy

From a limited perspective, one could identify the immediate aspect of economic savings as the single important point of convergence between the adoption of FLOSS and the democratic principle. After all, by saving money that otherwise would be put toward the costs of expensive software licenses, governments will be able to spend the same amount more wisely on social projects targeted towards the inclusion of their citizens in the information age, thereby promoting the development of their economies in a continuous and cyclical process of autonomy. This was precisely what happened with the poor Spanish region of Extremadura, as noted above.

On a wider scale, however, the adoption of FLOSS should also be envisaged as a means of "democratizing innovation," as argued by Eric von Hippel. As he explains, "it is important to ask about the social welfare effects of innovation by users" [...] because "social welfare is likely to be higher in a world in which both users and manufacturers innovate."[186] The FLOSS movement would promote these effects because its "communities do not allow contributing innovators to […] control the use of their code. Instead, contributors use their authors' copyright to assign their code to a common pool to which all—contributors and non-contributors alike—are granted equal access."[187] In such an innovation process, "[a]s lead users develop and test their solutions in their own use environments, they learn more about the real nature of their needs. They then often freely reveal information about their innovations. Other users then may adopt the innovations, comment on them, modify and improve them, and freely reveal what they have done in turn."[188] In a system like this, the economic outcomes are likely to be higher than in a restrictive system; but even if they are not, they are likely to be shared by a greater number of innovators. The commons-based peer-production model, thus, allows more people to benefit from the outcomes of societal development.

In "The Many Aspects of Open Source Software," the European Commission's Interoperable Delivery of European eGovernment Services to Public Administrations, Businesses and Citizens (IDABC) discusses the importance of stimulating a digital heritage, given that every society is standing on the shoulders of previous generations. The IDABC examines how the FLOSS movement would contribute to this process by constituting a natural pool of knowledge and expertise, where "new generations of people can freely build upon that knowledge to create new and innovative solutions for new problems."[189] The document also addresses the peer-review process where "many different people and organizations look at the software from a different perspective" as a means of stimulating innovation at a "global spreading and fast development pace, [which] makes OSS more innovative than closed software."[190]

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186. Eric von Hippel, *Democratizing Innovation* (MIT Press, 2005), <http://web.mit.edu/evhippel/www/books.htm> at p. 107.
187. von Hippel, *Democratizing Innovation*, *supra* note 186 at p. 113.
188. von Hippel, *Democratizing Innovation*, *supra* note 186 at p. 109.
189. IDABC European eGovernment Services, Open Source Observatory, "The Many Aspects of Open Source Software," *supra* note 67.
190. IDABC European eGovernment Services, Open Source Observatory, "The Many Aspects of Open Source Software," *supra* note 67.

In a similar vein, Lessig argues that opening the code of government computers is important to the development of an ecosystem where people and governments are free to develop code however they wish and to improve upon prior developments. He argues:

> If the federal government develops a system to handle welfare claims, what reason does it have for hiding the code for that system from the states? Why not let the states take that code and build upon it? And if the states, then so, too, with the universities. In each case, the aim should be to expand the reach of these powerful and valuable resources, not to contract and hoard them when no value to the hoarding exists.[191]

Especially in the context of developing countries, as Benkler notes, FLOSS may work as an instrument to transfer technology, "with the potential of local software programmers to learn the program, acquire skills, and therefore easily enter the global market with services and applications for free software."[192]

<div align="center">*</div>

<div align="center">6. CONCLUSION</div>

IN TUNIS, THE WORLD DECIDED TO embrace a neutral approach with respect to FLOSS adoption by governments. After pressure from the US delegation,[193] the Tunis Commitment limited itself to registering the conviction that:

> governments, the private sector, civil society, the scientific and academic community, and users *can utilize various technologies and licensing models*, including those developed under proprietary schemes and those developed under open-source and free modalities, in accordance with their interests and with the need to have reliable services and implement effective programmes for their people.[194]

The above wording can be interpreted in two different ways: either as a commandment for non-discrimination, whereby the commitment would prescribe that mandatory provisions on behalf of FLOSS should be avoided, or merely as a blank rule that leaves room for each country to decide internally about FLOSS. On one hand, the second interpretation may seem more likely, otherwise the reference to "in accordance with their interests" would not make sense.[195] On the other hand, the fulfilment of such a rule to meet the democratic principle, as advocated in this paper, would lead to the natural understanding that adopting FLOSS is not an option, but a *duty*.

191. Lessig, *The Future of Ideas*, *supra* note 20 at p. 247.
192. Benkler, *The Wealth of Networks*, *supra* note 185 at p. 321.
193. William New, "Open Source Agreed in UN Information Society Summit Preparations," blog posting to *Intellectual Property Watch* (10 October 2005), <http://www.ip-watch.org/weblog/index.php?p=98>.
194. United Nations, Internet Telecommunications Union, WSIS, *Tunis Commitment*, *supra* note 126 at para. 29 (emphasis added).
195. Though governments can utilize both licensing models, in some concrete moments they must choose one or the other. In doing so, they will pursue the particular interests of their people. In such a process, nothing seems to prevent anticipatorily having a general rule that mandates the adoption of FLOSS applied to every future case.

This imperative would hold even for those countries that resist a broad interpretation of the democratic principle and seek to limit the idea of democracy to its formal expression. As argued above, even the political and structural dimension of the democratic principle would justify the adoption of FLOSS as a means of promoting citizen participation in government decisions. Nonetheless, as Maria Eduarda Gonçalves observes in *Direito da Informação [Information Law]* there is no contemporary democracy that limits itself to recognizing a merely formal expression of the democratic principle. In her words:

> No system will refrain [...] to establish the commitments considered as adequate between the exercise of individual freedoms and rights, and their regulation and control in the name of the general interest. Even the liberal legal-economic systems, favourable to the free labour of the laws of the market, admit that the State must intervene in the creation of the conditions [...] that render possible, namely, *a general and equitable access to the means of communication and to the necessary sources of information for the accomplishment of the rights of the person.*[196]

It seems, thus, that the rule framed in the Tunis Commitment would not resist a more in-depth assessment of its validity with respect to any system of constitutional rights in Western democracies.

This paper had as its central purpose the development of a normative framework for investigating whether under the democratic principle a governmental duty to embrace the principles present in the Free/Libre/Open Source Software movement exists. The point of departure was an explanation of the differences between the movements (free software and open source), gathered under the general idea of FLOSS. The article then sought to portray in a snapshot the current stage of national and regional policies with respect to the adoption of rules or guidelines for the procurement of software, as well as investigating whether specified countries were following, to a smaller or larger extent, any strategy for implementing FLOSS.

The conclusion was that many countries, even those that have not mandated the adoption of FLOSS (meaning most of them), were following a movement to implement FLOSS that rarely relied upon purely objective factors. That is to say, normative and ideological factors were identified as playing an important role in the process and, it was argued with particular reference to Brazil, those are associated with democratic ideology. The article then explained how the democratic principle has evolved from a formal and structural conception towards a substantive dimension, which inclusively is not sensed purely in the relations between individuals and the state, but in all the realms of societal life. That is to say, I showed how the democratic principle has been subject to a reconciliation between the old values of classic liberal democracy and the renewed values of social justice.

The discussion then turned to establishing a justification for the adoption of FLOSS with respect to different dimensions of the democratic

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196. Maria Eduarda Gonçalves, *Direito da Informação: novos direitos e formas de regula.ção na Sociedade da Informação* (Almedina, 2003) at pp. 24-25 (author's translation) (emphasis added).

principle. I argued that the adoption of FLOSS principles should be understood as essential for the establishment of a cultural or semiotic democracy, where it is possible for people to take part in the construction of the signs that define their own sources of meaning and experience. Second, I identified the FLOSS movement with a particular contemporary ethic, which Himanen identified as "the Hacker Ethic," and argued that in a democratic system law must correspond to the shared values of a given society. Third, I examined the intertwining between FLOSS and the traditional concept of a political democracy, arguing that a contemporary understanding of the open government principle must include the disclosure of the code of the computer programs run by the state. Finally, I argued that the adoption of a FLOSS policy by the state is essential for democratizing the possibilities of innovation and that those effects must also be extended towards the international stage to maximize the potential for emerging economies' technological development.

I conclude by emphasizing again that there is a moral duty of any democratic state to adopt a contractual model which preserves more rights to the government and to its citizens. That is to say, it is not acceptable to think that states can merely adhere to restrictive End User License Agreements as predetermined by monopolist companies without pondering more carefully about the content and the clauses inserted into those instruments. Between two different models of contracting software, a state must adopt the one that fits better into its particular conception of democracy. Nonetheless, I am not arguing here in favour of a particular license. Even though my sense is that the copyleft clause is essential to maintaining FLOSS always under the same regime of freedom, thus reflecting the perception of a morality of duty as identified by Fuller, I am not defending any particular license as invulnerable and perfect. The evolution of the system must and will certainly be carried out by its agents. What is only known for sure is that we should embrace its democratic promise.