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A PHILOSOPHICAL ANALYSIS OF INTELLECTUAL PROPERTY RIGHTS AS THEY PERTAIN TO SOFTWARE

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Abstract

The protection, extent and utility of intellectual property rights (IPRs) are becoming increasingly a matter of concern throughout the world—in some countries for the first time. In such a state of affairs, it is important to clarify foundational issues. This paper endeavors to contribute a novel philosophical (rather than an empirical) analysis of intellectual property rights and their ramifications—though legal considerations will unavoidably enter into the analysis. The main purpose of this study is to explore the implications of IPRs as they pertain to software. The issues surrounding IPRs are important because the world is moving more and more towards a knowledge economy, which demands a constant stream of intellectual ideas to sustain it. Moreover, since IPRs can frequently determine both the types of product and services businesses provide, they can be ignored only at great risk. What follows is an examination (with special attention to conditions in the United States and China) of the philosophical and legal foundations of IPR as well as objections to the very institution of IPRs. This paper concludes with a critique of the free software ideology and offers proposals to end the impasse among those clamoring for and offering free software on the one hand and those wishing to profit commercially from creating and supplying useful software on the other hand.

Keywords: Intellectual property, software, open-source, patent, copyright, copyleft

To try to give a definition of property as of an independent relation, a category apart, an abstract and eternal idea, can be nothing but an illusion of metaphysics or jurisprudence.
—Karl Marx, *The Poverty of Philosophy*

During the session of April 2, the (French) Chamber of Deputies rejected, by a very large majority, the literary-property bill, BECAUSE IT DID NOT UNDERSTAND IT (sic).
— Pierre-Joseph Proudhon, *What Is Property? An Inquiry into the Principle of Right and of Government*

Introduction

As the above quotations from Marx and Proudhon attest, it is difficult to analyze the notion of property, and especially intellectual/literary property as well as any rights pertaining to it. The issues surrounding such property are, however, of great import and need clarification no less than justification.

A popular legal guide defines *property* as “anything that you can own exclusively with the protections of the law” and “to become property, the object must be something that can be controlled.” (Poor) Any effort to justify or even to explicate intellectual property presents complex problems, and the matter of software rights adds even more complications and controversy.

To convey the fundamental character of intellectual property in brief compass, I suggest, as a working definition of *intellectual property*, that it consists of a set of useful or artistic ideas with potential economic value. Physical property has mass as well as

location and occupies space, whereas an idea does not; hence the problems of protection are more complicated. Ideas, of course, may be embodied in physical form, but the material is not the idea. Nevertheless, physical embodiment is a necessary condition for the protection of intellectual property in the United States—probably because physical constructs are more suitable for evidentiary claims. The notion of potential economic value is also significant because it implies that someone believes the set of ideas or their expression can be converted to more traditional economic goods, normally, money. Societies with well developed production, marketing and court systems along with a wish to reward idea creation are the ones most likely to provide for protection of and respect for intellectual property rights.

A non-exclusive list (Rogers 2002) of ideas that are protected from being copied by the legal codes of the United States (as mentioned in the Copyright Act of 1976, 17 U.S.C. § 102) and many other nations are

- literary works
- musical works
- dramatic works
- pantomimes and choreographic works
- pictorial, graphic and sculptural works
- motion pictures and other audiovisual works
- sound recordings
- architectural works

These are protectable in the United States, provided that they are “original works of authorship fixed in a tangible medium of expression” (Rogers 2002). Ironically, *reproductions* of a work of art are also copyrightable. (Poor, p.195) Software is protected under this law as literary work (§ 101). US courts have extended this protection to include databases, even though facts are per se non-protectable. The legal justification is that the “compilation involves some minimum degree of original selection or arrangement” (Rogers 2002) It is a matter of some philosophical interest to consider what this law tells us is *not* protected “(i)n no case does copyright protection . . . extend to any idea, procedure, process, system, method of operation, principle, or discovery (§ 102 (b))” (Rogers 2002) The wording in this sentence, while not using the specific term *software*, seems to exclude it by its general characterizations (e.g., *procedure*, *system*). Operating systems, in particular, as well as the results of systems analysis do not seem to qualify for protection either! Thus it had to be decided by the courts for reasons of commercial necessity to make software protectable.

Other protectable entities are trade secrets, trademarks and inventions—“the property you have in the product of your own mind or brain: a thing you invent, design, write for publication or manufacture for sale.” (Poor, 189) Software has been held to be protectable under one or more of these categories. A “utility patent” is granted for “any new, useful and non-obvious process, machine manufacture or composition of matter.” (Rogers 2002, Patent Basics, p. 1)

While utility patents are the most frequently mentioned in discussions of IPRs, there is another kind of patent known as a “design patent.” It would seem from the name that this might apply to software (the result of systems design) and especially to the “look and feel” of software; but that is not the case. Design patents protect “any new, original, and ornamental design for an article of manufacture.” (Rogers 2002, Patent Basics, p. 1) A philosophical analysis could one day inform the law with a more rigorous conception of software features.

Societies promise very little protection of the right to exploit the fruits of one’s labor in creating ideas and expressions; and often, in practice, the promised protection comes up short, mainly because of difficulties in enforcement and widespread efforts to circumvent this protection.

Since IPRs are basically monopoly rights, there is bound to be some tension felt in any society that simultaneously encourages innovation and unfettered competition. Moreover, the rights to intellectual property are themselves a kind of property with economic value-- they can normally be transferred; for example, appraising their value “before forming a Joint Venture, acquiring a company, or entering into a contract is very important as it can help determine the amount of a transaction price or capital contribution.” (Lehman) Such issues as *what exactly is property*, *is it a worthwhile institution*, and *what should be the terms of ownership*, are inherently philosophical and form a major part of the ensuing analysis.

General Concept of Property

Philosophical/Definitional Fundamentals

When we speak of *property*, we generally mean: something owned, a possession, such as a piece of real estate. The original meaning pertained to tangible items but was extended to intangibles, for which there is evidence of, or potential for, legal title, e.g., rights, patents, copyrights franchises and trademarks. *Personalty* refers to movable assets (things, including animals), which are not real property, money or investments. This is not the same as personal effects, which include clothes, cosmetics and items of adornment. Real property is any interest in land, structures, anything firmly attached to the land, and integrated equipment (such as light fixtures or a well pump), anything growing on the land, and all "interests" in the property. (Dictionary.law.com). *Usufruct* is a special relationship pertaining to property, namely, "the right of enjoying all the advantages derivable from the use of something that belongs to another, as far as is compatible with the substance of the thing not being destroyed or injured." (Random House Webster's Unabridged Dictionary) It is this concept that covers using software *licensed* by the software maker, when we do not own the software itself.

Ambiguous property rights (in contrast to "unequivocal control rights") arise when owners' rights are not guaranteed beforehand. Instead, owners have to fight for actual control with interested parties, ex post (based on analysis of past performance). This situation typically arises from informal agreements say, with government, venture capitalists or co-inventors. (Li)

Origin of Property Rights

Many philosophers have speculated on the origin of property rights, but none more famously than John Locke in his 1690 Treatises, §26:

Though the earth and all inferior creatures be common to all men, yet every man has a "property" in his own "person." This nobody has any right to but himself. The "labour" of his body and the "work" of his hands, we may say, are properly his.

Locke's remarks require some qualification. In actuality, a captive or slave has only ambiguous rights to his person; similarly, programmer has rights to the program he/she created only if there is no agreement to the contrary, say with an employer or contractee. Locke goes on to say that the claim to ownership applies to what has been extracted from nature:

Whatsoever, then, he removes out of the state that Nature hath provided and left it in, he hath mixed his labour with it, and joined to it something that is his own, and thereby makes it his property. It being by him removed from the common state Nature placed it in, it hath by this labour something annexed to it that excludes the common right of other men.

Excluding the rights of other men implies a monopoly--so far so good for a philosophical justification of monopolistic software rights. However, the monopolistic owner of software rights would derive little solace from Locke's further qualification to the effect that there should be enough (enjoyment by others) before absolute control is *properly* conveyed to the owner of property (whose rights of control depend on his/her labor or perhaps because of legal transfer of such rights).

For this "labour" being the unquestionable property of the labourer, no man but he can have a right to what that is once joined to, at least where there is enough, and as good left in common for others.

Thus the right to exclusive enjoyment of property, according to Locke, depends on there being enough and as good property for others to enjoy. The implications of this statement for the realm of software are enormous. If a program is unique, others have insufficient means to purchase or enjoy it; hence, the person who created it by his/her labor can not be a legitimate owner. A solution to a good many software piracy issues is thereby suggested: make the product available to others, perhaps by a sliding scale of prices depending on an economic means test. The prospect of open source software will be discussed later. In any case, by making software more accessible to many who might otherwise disobey the laws against copying, ownership rights are thereby secured as much as possible, and potential copiers are gradually socialized to respect intellectual property rights, and perhaps feel encouraged to create some of their own—and seek protection for it!

Objections to Property Ownership in General

Proudhon a leading French socialist-anarchist thinker in a famous definition (that exasperated even Karl Marx) wrote: “WHAT IS PROPERTY! may I not ... answer, IT IS ROBBERY.” In case one may think that surely Proudhon is merely exaggerating for emphasis, and must believe that property ownership is at least originally justified as the result of merit, he dispels that belief by saying: “every social advantage accorded, or rather usurped, in the name of superior talent or service, is iniquity and extortion.” Later he seems to clarify his objection to the institution of property by implying that the evil arises when a land owner obtains mastery over others when they work the owner’s land as tenant farmers and become wage slaves:

Originally, the word PROPERTY was synonymous with PROPER or INDIVIDUAL POSSESSION. It designated each individual's special right to the use of a thing. But when this right of use, inert (if I may say so) as it was with regard to the other usufructuaries, became active and paramount,—that is, when the usufructuary converted his right to personally use the thing into the right to use it by his neighbor's labor,—then property changed its nature, and its idea became complex. (Proudhon 1840)

Rights Pertaining to Property

Property ownership confers a set of rights, which can, if desired, be separated and assigned to others owners. Normally, ownership entails rights to future ownership (remainder), to enjoy for a period of time (tenancy or life estate), to reclaim the property back (a reversion) if it is no longer used for its current purpose (such as use for a hospital, school or city hall) or is no longer used as contracted. In relation to software and web pages, there are also the right of distribution and the right of communication to the public, including when “members of the public may access these works from a place and at a time individually chosen by them” (article 8, TRIPS agreement— Agreement on Trade-Related Aspects of Intellectual Property Rights).

Benefits of Allowing Property Ownership

Most modern industrialized governments recognize a need for IPRs. The very first article in the US Constitution (§8) reads: “The Congress shall have power: ... To promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.” A genuine philosophical issue arises from this provision: why is this form of property, intellectual property, not as permanently protectable as that afforded to real property? The sociological answer is that too many interested parties would be deprived of the benefits of useful IP. If someone owns land in Oregon in perpetuity, it does not seem to be an issue to those in another state, whereas anyone anywhere might wish the benefits of a certain idea. Yet someone could reasonably contend that the respective time limits of protection should be reversed, for no owner created the land; thus it would seem right to favor invention of a piece of intellectual property over land ownership. The rights of the idea creator, according to this line of reasoning, should, therefore, be greater—the product seems to be more fully his/hers.

In China, there is great tension among three IPR factors, namely, the rights of IP owners, the desire of the people to enjoy work created elsewhere, and the need to foster local industry.

“The State Council clearly understands that the lack of IPR protection is a severe constraint on the development of creative products. Investments in R&D cannot be made without a reasonable assurance that the resulting intellectual property will be protected long enough to earn an economic return. Software designers, authors, filmmakers, musicians, and others cannot earn a living if their products are immediately pirated. (Lehman)

The rationale for a time limit offered here is just long enough to earn an economic return. But we may ask, how much return on an investment in IP should be allowed? Do the Chinese have in mind the break-even point, so there is little or no gain or perhaps just no loss? This would hardly be an even handed treatment of the idea creator/owner.

Harms of Allowing Property Ownership

If IPRs are viewed as hampering the economic development of third world countries and keeping them on the wrong side of the digital divide, what can be done? Barton writes "the risk that intellectual property rights slow the movement of technological

capability to developing nations, suggests that harmonization efforts might most wisely consider one common standard for developed nations and a different one for developing nations" (p. 15, cited in Correa)

The UNDP "Human Development Report 1999" expresses similar concerns:

The relentless march of intellectual property rights needs to be stopped and questioned. Developments in the new technologies are running far ahead of the ethical, legal, regulatory and policy frameworks needed to govern their use. More understanding is needed--in every country--of the economic and social consequences of the TRIPS agreement. Many people have started to question the relationship between knowledge ownership and innovation. Alternative approaches to innovation, based on sharing, open access and communal innovation, are flourishing, disproving the claim that innovation necessarily requires patents. (Correa, p.73)

Protection of Property Rights

Existing Protections

Motivation for Protection

Normally we feel that protecting intellectual property rights will have the salubrious effect of encouraging new creations. However, there are some people, not motivated by financial gain, who are content merely to benefit society or simply to be well known as the creator of some piece of intellectual property and do not seek protection for their work. There can be an ulterior financial motivation, however: A company can still derive benefits from giving software away but then charging for its maintenance. Examples of such products available without protection in the software realm are freeware and various GNU-like products, especially Linux. There is also a strong marketing potential for producing manuals and developing the products further.

Need for Protection

There are several possibilities for abuse of IPRs, which naturally call for corresponding laws aimed at protecting IPRs. Some major abuses are given below:

- **Counterfeiting** – e.g., issuing illegal software in legal-looking packaging. Microsoft has to contend with people physically stealing their (difficult to reproduce) holographic authenticity labels and placing them on plausible looking boxes containing illicit software.
- **Cybersquatting** -- registering a domain name that is never actually used by the registrant, but is one that a large company might one-day wish to use. "People have registered trademarks as Chinese domain names with the 'dot com dot cn' suffixes with the intent to sell this domain name to the trademark owner. One of the first prominent cases was the dispute over ikea.com.cn. Ikea alleged that the registrant registered this name in bad faith with the intent to sell this name to Ikea. The registrant was not very credible when he argued that he had chosen the name Ikea, because "I" stood for Internet, and "Kea" was the name of an Australian talking parrot that should symbolize communication. The registrant could also not explain why he at the same time registered a significant number of other prominent trademarks." (Lehman)
- **Patent abuse** -- primarily using another's idea without a license. As a remedy, the patent holder has a right to seek compensation. American companies have been known to calculate that it would be foolish to pay a private inventor for his invention, when they might possibly 'design around' the patent. (Rogers 2002, Patent Basics)
- **Trademark misuse** – using a logo commonly associated with another product or company (or one very similar to the original).

Since consumers continually rely on what they regard as tried and trusted companies when purchasing products, it is sound social policy that such reliance not be vitiated. Further, if a product bearing an illicit logo is shoddy, the reputation of the original company suffers irreparable harm. As Shakespeare observed:

Who steals my purse steals trash; 'tis something, nothing;
'Twas mine, 'tis his, and has been slave to thousands;
But he that filches from me my good name

Robbs me of that which not enriches him,
And makes me poor indeed. *Othello*. Act iii. Sc. 3.

- **Copyright infringement** -- software piracy, copying software without license or payment.

Software piracy is very much like cheating on one's income tax; many do it without much fear of being caught. Pirates sometimes even feel self-righteous about revamping property rights and or systems of pricing in general. Making a political-economic point is often proffered as justification for their behavior. Naturally, this ignores the reasons for protecting IPRs: that companies and individuals will have motivation (beyond just psychic satisfaction) to research and work on producing better software. If these activities are no longer protected or protection becomes meaningless; in the absence of economic incentives, the people who are willing to pay for software and its attendant features (warrantees, etc.) are measurably deprived. The Business Software Alliance came into being to enforce such protection and to encourage only legal use of software use and distribution. They describe several types of software piracy. (Software Management Guide – <http://www.bsa.org/usa/policyres/admin/gsmus.pdf>)

- a. End User Piracy – reproduction of company owned software without a license to do so; also obtaining upgrades without having the earlier version of software
- b. Client-Server Overuse -- the installation of a software product on a server, when the license is for a smaller number than the actual number of users
- c. Internet Piracy -- the Internet has sites where people can download and trade illicit copies of software
- d. Hard-Disk Loading – hardware vendors include unlicensed software on their computers to make them more marketable.

There are, of course, risks to use of illegal software. Software that has passed through many copy operations is more likely to fail and there will be no vendor support. There is no warranty protection, and illegally obtained software, having been on many different computers, is more likely to have a virus.

Modes of Protection

The relevant provisions in the new Chinese Criminal Law are as follows: typically IPR infringement results in fines or imprisonment from three to seven years. (Lehman) In the United States, protection is achieved primarily through the threat of litigation for large amounts of money.

Limitations on IPRs

In China, official industry analysts are constantly on the lookout to prevent any person or company seeking to acquire a patent for crucial technology from being in a position to demand that all competitors pay royalties or seek licenses. At present the Anti-Unfair Competition Law in China does not deal with matters pertaining to anti-trust issues, but as its economy grows, China is expected to pay anti-trust matters greater heed.

Lester Thurow (1997) proposes that owners of patents and copyrights voluntarily accord companies in developing countries cost-free or at least reduced rates on royalties and licenses. Clearly, this opens up the unintended possibility of, say, rich companies using and setting up front companies benefiting from this subsidization specifically for the purpose of acquiring technology at cut-rates in order to remarket the technology at a profit. Such reduced rate software could easily be sold in the United States. Protection efforts would be quite a bit more difficult than for outright counterfeits, because the products would be legal. There would have to be distinctive markings on subsidized packaging to aid law enforcement in preventing this abuse.

In the United States, the copyright statute offers some relaxation of the stringent protection of copyrighted material, known as the doctrine of "fair use." For the convenience of libraries, archives, teachers and researchers, limited reproduction of copyrighted works without the permission of the owner is allowed. (Rice 1998)

Methods of Protecting IPRs

The International Intellectual Property Alliance (IIPA) recommends that its members should institute several specific measures "to foster local economic growth and increased trade and investment among member states of the Free Trade Area of the Americas (FTAA)." In a Position Paper presented to the Third Business Forum of the Americas, the IIPA puts the burden on governments

to enforce copyright laws in order to reduce the current high levels of commercial piracy and to proceed with rapid implementation of the new WIPO copyright treaties as well as the TRIPS Agreement. Finally, the governments are urged to reduce both tariff and customs barriers which affect the free circulation of information, education and entertainment-based goods and services.

These barriers may include customs valuation practices, quotas, regulatory issues, discriminatory taxation, certification procedures and restrictions on both content and technological aspects affecting the copyright industries. It is important for Governments to ensure that customs valuation is based on the physical medium embodying the copyrighted good, and not the value of the copyrighted good itself. (International Intellectual Property Alliance)

Other (perhaps excessively severe) measures that governments could take to protect IPRs would be to raid homes, schools, and businesses where there is suspected copyright infringement, and confiscating the offending products as well as the means of reproducing them. Still, given the widespread abuse (piracy) and difficulty of enforcement, it would be wise to find better ways of discouraging IPR infringements. Forbes cites some less drastic methods of coping with piracy:

There are two ways to fight piracy in China. The first is the Coca-Cola method” “you make your product so well and you distribute it so cheaply that there is no money left for the counterfeiters.” (Thomas Lee) Boam (a commercial attaché at the US embassy in Beijing) says. The second is the Budweiser approach. Budweiser beer cans in China have fluted edges that are difficult to manufacture. Chinese breweries can brew beer and call it Budweiser, but they can’t yet put it in a can that looks real. (Meredith 2003)

Implications of Existing Protections

Some further philosophical-ethical matters require consideration. IPR protections can cover property in either a general or specific way. This raises the question as to whether rights, worded so as to describe an idea (or expression) in a fairly general way, also apply to all specific instances of the main idea or just to the instance that gave rise to the right of ownership. For instance, suppose someone had ownership of the GUI (graphical user interface technique of navigating computer files) idea, when all he/she created was a specific GUI. Should that prevent others from legally incorporating improvements or changes? On the other hand, if someone had ownership rights to a specific text editor, say EMACS, should others be barred from claiming general rights to the general editor idea (perhaps after having produced a different, improved editor and then claiming ownership of the editor idea in general)? Perhaps the easiest way to deal with these issues is to have no software IPRs whatsoever.

This train of thought leads directly to issues relating to the “open source” software movement. The open source “community” believes in lifting all restrictions on the copying, use, modification, and distribution of its software, provided that people who take advantage of these freedoms do not impose restrictions of their own on any modifications they make or upon distribution of the software that is contrary to the aforementioned freedoms. This “restriction” is a way of protecting freedom to use software and prevent those who improve it from generating any proprietary commercial rights. The GNU website explains its unique concept of copyleft vs. copyright:

Copyleft is a general method for making a program free and requiring all modified and extended versions of the program to be free software as well. (Stallman)

One would undoubtedly be correct in assuming that the motivation for this movement is influenced by leftist views in political economy. However, there are also non-ideological reasons to support this cause: for instance, to make software freely available and to encourage programmers everywhere continually to improve and enhance the software, which would then be free to consumers. Richard Stallman the chief exponent of GNU writes:

The simplest way to make a program free is to put it in the public domain uncopyrighted. This allows people to share the program and their improvements, if they are so minded. But it also allows uncooperative people to convert the program into proprietary software [<http://www.gnu.org/philosophy/categories.html#ProprietarySoftware>]. They can make changes, many or few, and distribute the result as a proprietary product. People who receive the program in that modified form do not have the freedom that the original author gave them; the middleman has stripped it away.

Stallman’s aim is more than software improvement, however. It seems to be directed at eliminating ownership and profit-making from software creation altogether, even if the programmer adds value to existing software by “mixing” his/her labor (*contra*

Locke). He elucidates the difference between his free software ideology and the rival open-source philosophy, on the GNU website:

Open source is a development methodology; free software is a social movement." For the Open Source movement, non-free software is a suboptimal solution. For the Free Software movement, non-free software is a social problem and free software is the solution.

Even open-source Linux presents special problems to a capitalist system of IPRs. As reported in *Business Week*, "one Microsoft executive, chief strategist Craig Mundie, ... calls Linux unhealthy for the technology industry. 'It ultimately is a question about whether societies are going to value intellectual property or not.'" The existence of a truly excellent, free operating system, of course, puts a damper on commercial developers continuing to produce alternatives.

Notwithstanding any leftist motivations, some

open-source software programmers ...don't have a problem with people making money off their work--or making money themselves. Miguel de Icaza, the Mexican programmer who created GNOME, software that makes Linux easier to use, in 1999 co-founded Ximian Inc., a private Boston company that sells software for making Linux easier to install and update. (Kerstetter 2003)

Even if protected and unprotected software could live side by side for a while, it seems clear that the whole system of IPRs will eventually erode, with unknown and possibly baleful consequences for industrialized society dependent on a constant stream of new inventions and creations.

Philosophical Objections to the Free Software Ideology

With regard to the free software ideology, one may well pose certain practical and philosophical questions regarding its reputed universal applicability as a model for software production and acquisition: Why should just software be singled out as an industry in which the creators of ideas should not make a profit directly from their creations? Free software advocates have answered that programmers can still make a living by writing manuals or providing advice to those who use the free program. How would the programmer be able to survive if, ironically, as a result of his hard work, the software were so clear that very few users needed advice? Irrespective of that, the charge for advice would have to be quite high to compensate for all the development time plus the advice time. Further, the amount of expected income would be unsettlingly unpredictable versus a system that involved a direct charge for the program. Might not there be, moreover, an incentive to the creators of free software deliberately to obfuscate their products to increase their consulting business? Is there not also an incentive to charge more for advice than would be the case if there were some profits from selling the software? Is it not better to separate out the costs for providing the program and subsequent services, rather than having the latter subsidize the former? What guarantees are there that the software creator him/herself would even be the one consulted for advice and not some third party? Suppose the software creator were not adept at, or even interested in dispensing advice, because he/she prefers to be creating new software. Is a programmer not more fruitfully and satisfyingly employed in what he/she knows best?

Why, one may ask in the name of philosophical consistency, should software advice itself not be offered free of charge? If the Stallman's model were generalized beyond the software industry, one could, for instance, say to car manufacturers: give your cars away; just try to make money from spare parts, repairs, and perhaps repair manuals. The fact that cars are material and software is not does not matter here. The above problems demonstrate the intrinsic unsoundness of the free software model.

Concluding Recommendations

In the preceding discussion evidence and reasons were presented to show that society needs to provide adequate motivation and incentives for software invention and creativity, but without undue disadvantage to potential users who simply cannot afford the software. Society would benefit from a system that would acclimatize would-be and habitual infringers to the mode of paying for what others have created for their benefit. It is best that they not become inured or addicted to illicit activity nor become indifferent to the stigma of being labeled "software pirates." Furthermore, a state of affairs in which accusations and retribution are leveled against whole nations leads to much international misunderstanding, trade wars, and possibly the breakdown of the entire system of international commerce and law. Therefore, a certain liberality and *temporary* relaxation of protective standards

should be reserved for basically honest, deserving, and striving countries/companies. They could be excused from all but a minimum payment of license fees. The intention of the liberalization would be to assist those trying to reach a level of technology competence, at which they could become creative and productive contributors to the world economy. Both the purpose and duration of the liberalization period should be well understood for the system to succeed.

As a practical matter, not everyone could be eligible for this or a similar plan. We would have to institute a mechanism to determine who is really deserving: companies less technologically advanced might apply (say, to an international body) for a *grant of exemption* from, or *reduction in fees* for licenses and royalties. A condition of participation in this plan would contractually restrict the beneficiaries from using the benefits received to undermine the IPR owners, say by using the subsidized products to compete against them in their customarily profitable markets. Under a variation of this plan, companies could apply for *financial grants* from an organization like the World Bank; these funds would then be used to compensate the advanced companies whose ideas the applicants wish to use. This alternative has the advantage of preserving the system of incentives and protection of IPRs as well as eliminating revenue loss for the advanced companies (in contrast to the Coca-cola plan). Thus a compromise between helping others to develop intellectual property and totally excluding those in need of such help could be reached, while still maintaining the institution of private intellectual property rights.

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