



The role of intellectual property and industrial property in the economics of information

Laurent Benzoni
Summary of the speech at the Pavillon Ledoyen
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« The role of intellectual property and industrial property in the economics of information »¹

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The role of information in the development of mankind's society dates back more than 300 000 years, as underlined by René Passet in his books "Economics and the living" (*L'économique et le vivant - Economica*, 1996). In prehistoric times, the Neanderthal species gave way to *Homo sapiens*. This « evolution » ended the process of the continuous skull growth of the *Homo* species. Although the skull, which encases the brain, continued to grow, the brain itself never changed size. How can we explain this paradox? *Homo sapiens* invented the tool, crystallizing information and know-how. In short, this prehistoric man externalized his intelligence into tools which allowed him to better perform in his environment and satisfy his needs. This man's internal intelligence, via his brain, allowed him to use these tools, thereby increasing his own efficiency—despite the fact that he did not understand the how and why of the tools. In more concrete terms, we all know how to strike and light a match, but not everyone knows the chemical composition of a match, or the physical qualities leading to the quasi-instantaneous lighting of the match. Since this historic mutation, the types of storage and transmission of information have become the crux of the development of our societies. Progress in this area is accelerating, information is no longer just a means, it has almost become the end to these means. Human activity in rich societies means processing

information to produce information and then use it: in a Western-based country the average individual spends more than half of his/her time awake by contacting « information-related machines », be it for the means of production (computers), exchanges (Internet, telephone), consumption (Television, radio, or recorded music). This change has been underway for 20 years and has blurred how our societies function. It translates the switch from a material civilization, as coined by François Braudel, to an information economy and society.

The information economy is characterised by the concentration of production factors and how people consume information-related goods. These goods are different from material goods since using these goods does not change their quality: they cannot intrinsically be modified. The information-related goods can also be digitalised: they can be copied at a nil marginal price, and indefinitely so, or until demand has been met. These goods, however, are expensive, even very expensive, to create. Given this backdrop, economists can feel ill at ease, because economic theory is founded on the principle of rarity. Today, however, we need to build an economic system where efficiency is developed in a context for information goods which cannot be depleted by use, and which, once they have been designed can be potentially overabundant. The ultimate paradox is that proprietary law created rarity: the owner of an informational good requires that others be granted access rights, its price is mechanically higher than the marginal cost, and social well-being is changed.

The crux of the debate therefore focuses on the level of production of rarity that the creation of property rights must have regarding informational goods. How can you maintain the incitation for the design and the creation of such goods? The nature and the scope of the protection of authors'

¹ Summary of the speech at the Pavillon Ledoyen, april 13 2005.

rights and the question of software patents are part of this perspective.

These debates are resurfacing from the 19th century, when economists debated over the implementation of the first modern texts governing intellectual property rights and patent invention. From 1860 to 1873 a strong free-exchange wave swept across Europe and many economists preached the abolishment of both monopolies and patent law. Hostility was so great, that the Netherlands repealed its patent legislation. In 2004, Dutch company Philips, was the leading company to file patents with OMPI. This debate was fuelled throughout the 19th century and a number of economists clamoured loudly and strongly against patents, such as Dupuit who considered that patents created social costs, namely transactional costs, which were higher than the gains reaped from unprotected creation. An economist, Gabriel Rodriguez summarises this position when he writes: «How can we progress, or even work when the tiniest industrial operation, requires an infinite number of authorisations, not to mention salaries and wages? (Journal des économistes, 1862). Even though this citation dates back to 1862, the phrase can be easily applied to today's situation regarding software patents.

Regardless of the outcome of the debates between partisans and adversaries, laws protecting intellectual property were adopted across all Western countries. With hindsight, we can note that these rules preserved the equilibrium between the circulation of knowledge and the protection of authors and inventors, especially in terms of the unprecedented progression of knowledge and inventions, and their diffusion among economic and social systems throughout the 20th century.

So why should we change a system with a positive bottom line? As stated above, the change sparked by technological

breakthrough in information technologies leads to a change in the very nature in the functioning of economic systems (cf. see: Curien et Muet, *La Société de l'information*, CAE, 2004).

In economies, and more globally, in societies where productive resources and consumption standards are rooted in information goods, intellectual property laws as well as their management and regulation have been set up as measures accompanying a material economy which is becoming obsolete. Laws protecting intellectual rights must now be designed as a cornerstone of the information economy in a context where economies are global and exchange both information and knowledge.

I would like to focus the remainder of my presentation on two key points.

Removing over-protective barriers of author's rights

We find the status of author's rights as too-protective. Indeed the system so favours the creators of initial rights, that it now seems as a hindrance to diffuse knowledge. Authors' rights are especially protected in terms of timespan, 70 years after the death of the author, is too long and the nature of protection is too constraining. This overprotection has two negative consequences: it impedes the spreading of information – thereby raising the cost to access this knowledge– and it fragilises the legality of original creations which rely on the combining, recompiling or processing of information via automatic methods. I feel that the following anecdote illustrates the limits of the current system. A full length feature *Insurrection Résurrection*, sold 203 seats in movie theatres. At one point the actor-director whistles *l'Internationale*, the French Communist party anthem for 7 seconds in an improvised sequence of the film. Today, the director is being billed 1 500 euros in

music rights, approximately 5 euros per paid ticket due to *l'Internationale's* music rights. Indeed, the music will become public in 2014. This anecdote is highly revealing. How can you justify, unless derived from feudal rights, a direct link to royal privileges? Or the fact that third parties are paid an economical rent? How does protecting a dead author's rights incite living authors to be creative? What is the real contribution of the 7 seconds of the whistled tune to the film's value? Does the furtive borrowing of the original work, which is a marginal element in the film, constitute a violation of rights? Is the author penalised? Is creation inhibited? Can't we consider that the *Internationale* is, as everyone believes it to be, free of rights? These debates have already been held, but it's time to rekindle them. Indeed, a number of tasks such as copying, combining and processing of information goods can all be managed from a PC and then sent across the planet over the Internet. In short, the potential cycle of distribution of information and knowledge is very short and access to information is broad. What should we think about rights initiated in the opposite context, where information circulates quickly and where there is free access to knowledge and information?

Software patents: an industrial economics measure

The second point is key to develop the information society. To avoid all confusion, let us start by stating that the creation of specific software patents does not impede the existence of licensed software coined free software. Free software does not mean free of rights. Indeed, this type of software has its own "specific" licensing, such as GPL, which are highly constraining licences for their users. Patents and free software can also co-exist legally, as in the United States. The objective of a software patent is to protect the producers or inventors of these goods, especially since software can be

very expensive to develop and to test. In the global competitive environment, this is not merely a micro-economic decision to spur investment and innovation in this sector. It is also a real measure of industrial economics in terms of the domain's scope, because it can include embedded software. When the US accepted software and semi-conductor patents in the beginning of the 1980's, it was part of a specific context relative to the decline of the US and confronted by the rise of a superpower, Japan. Given this backdrop, where hardware production seemed to be inevitably destined to be delocalized, the need to provide better international competition to protect software seemed to be the best strategy for US interests. The US Supreme Court showcased the worries and sought to relax the legal framework via economic conditions by authorising the software patent. Software protection in Europe underlies the same issues. An economic zone with high ? labour costs for qualified personnel should maximise the valuation of its comparative advantages in international competition by specialising in sectors with strong added value, such as software publishing and definitely not IT services which are already in the throes of intense international competition cost-wise (a phenomenon called offshore) (for more information see, L. Benzoni, *l'Economie du logiciel*, www.omsyc.fr). Like the United States, Europe needs actions which stake out industrial strategy in software publishing. Software patents are part of this strategy. More than 10 000 patents were legally filed by the European Patent Office in a cloudy legal framework which apparently excludes this possibility. The current situation needs to be clarified and protecting innovation in this sector could be the impetus needed to compensate for the required costs of Europe's quality labour force and which produces these innovations (education, formal university education, continuing education training, social protection, and so on, as all these elements are linked).

America's mistakes should be used to build an efficient and adapted European system

If a European software patent is a requirement, we need to avoid the mistakes made in the United States. The US patent system generates prohibitive costs for all players and gives rise to extreme legal uncertainty. The number of court cases has skyrocketed (more than 2500 pending) and for the most part, focus on major software publishers, since they are cash-rich. American law is too broad: for example, a case can focus on intellectual methods such as educational techniques. The *first to invent* system is the rule and is less efficient than the European *first to file* system. More, markets apprehend the innovational value, instead of focussing on the means and resources deployed to create software (companies should be rewarded for the effort) or the state of the art at filing time (rewarded for innovation). The time-span for a software patent does not necessarily have to be the same as the industrial patent's standard 20 years. Indeed, the twenty years do not reflect the information economy's time cycle, which is shorter than the more material economy's time-span.

Given these stakes and the specificities, the definition of *sui generis* law for software patents often seems necessary (cf. B. Caillaud, in *La propriété intellectuelle*, CAE, 2003). The efficient solution is more likely to lie in improving the process of patent licensing than improving legal texts. This is a lesson learned from the United States. Let's review a few of the possible areas for improvement: the creation of a third-party to grant patents with in-depth files to better understand the genuine level of the state of the art at the time of the patent request, increase the strike of the patent office and perhaps even create a patent regulatory agency, lower the prohibitive costs tied to filing patents for small companies, start-ups, individuals,

harmonise legislation for easier cross-reconciliation, and so on. These are the key technical elements to build an efficient European software patent which are lacking in European debates today on software patents. These debates have become too ideological and tend to pit the US against Europe, yet we all know that the real competitive threat lies elsewhere.

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