Free Software: what is at stake?

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The concept of Free Software was formalized in the early 1980s. It was inspired both by the principle of collaborative scientific publishing, and by the desire to provide each and every one with fundamental freedoms in the digital age. Thanks to the four freedoms it grants everyone (run the program, study the program and adapt it to one's needs, redistribute copies of the program, improve the program and publish these improvements), it aims to respect the users' freedom and the solidarity in digital communities.

These four freedoms are guaranteed by copyright-based licenses. They allow software authors to share their software with all mankind, while protecting it against exclusive appropriation. Richard M. Stallman, principal author of the GNU GPL, likes to explain that Free Software can be defined in three words: *"Liberty, Equality, Fraternity"*. Eben Moglen, the lawyer who advised him, often says that the license enables *"the creation of a common fund to which anyone can add, but from which no one can substract anything"*.

In practice, since Free Software can be freely used, copied, modified and redistributed lawfully by anybody, it has spread a lot over the last two decades; and the number of contributors to the common collection it constitutes is constantly increasing.

Today, the movement introduced by a few researchers has become a recognized phenomenon of society. Millions of users (individuals, NGOs, companies, administrations...) exercise the freedoms that come with Free Software. Thanks to the cooperation between these users over the Internet a quality offer exists It increasingly represents a direct competitor for the dominant actors of proprietary computing, such as Microsoft.

Pieces of software such as the GNU/Linux operating system, the Firefox browser or the OpenOffice suite are well-known examples of Free Software which, day after day, become more popular, and are commonly used in businesses and at home. In addition, the Internet's reliability is based on Free Software since its beginning, as is the reliability of some trading rooms (BNP Paribas) and planes (Rafale, Airbus 380). Free Software can be found in electronic devices (such as domestic Internet gateways...) but also in ATMs, mobile phones or PDAs.

A societal issue

Free Software can be copied legally by anybody, it can almost always be downloaded gratis from the Internet. This free of charge access, allows the less privileged populations to avoid resorting to illegal software copies to benefit from technological progress. Free software is thus intrinsically a tool to reduce the “digital divide”

Since Free Software is shared with its source code, this code can be studied to understand the techniques it implements so they can be reused and transmitted, including beyond the usual training and educational fields. The way free software developers cooperate through the Internet simplifies the transfers of expertise across borders.

Free Software is not a merchandise and those who develop it are contributing to the transmission to many people of scientific knowledge, technical expertise and technologies allowing them to access to Knowledge. Moreover, he GNU project – a key project for Free Software – was incorporated into the UNESCO-supported «Friends of the World Treasures» list[1].

An economic issue

Free Software allows the development of a dynamic economy referred to as “coopetition”, in which the actors share part of the R&D costs and compete on services based on common generic blocks. In the US, in Europe, in Asia, a real service-oriented economy has been created around Free Software.

The companies from that sector make a living on the support, training, integration, consulting and on specialization of generic blocks. The organizations using such software adhere to its model for the quality offer, but also because Free Software confers them more independence and a better control over the costs of maintenance and internal development.

The number of companies using Free Software steadily increases and, everywhere in the world, vast sections of States' and local governments' information systems migrate to Free Software.

A strategic issue

Free Software is more and more considered by public authorities and political leaders as:

- a way of enforcing sovereignty and industrial policies;
- a means to control public expenses;
- a means to achieve sustainable development.

Several projects illustrate this trend:

- the development of secured operating systems for military purposes (China, US, France ...);
- the political will to develop a national industry around Free Software (“Orient Ware” consortium between China and Europe, project of French “competitiveness cluster” around Free Software ...);
- the developments related to electronic administration (Free Software was made

1 UNESCO's 'Heritage World Treasures' Programme assumes a dual role of conservation and valorisation of patrimony, both tangible and intangible, and the integration of development in a social and local economic perspective.

compulsory for public administrations in Brazil and in the Netherlands, tax return procedure via the Internet in France...) and the migration of French members of parliament to a free operating system;

- the ever-growing use by developing countries (such as the actions led by the “French-Speaking communities University Agency” [Agence Universitaire de la Francophonie] ...).

As a conclusion, here is a quote:

> “*State services often use software whose source code isn't available, which prevents them both from correcting the errors that the suppliers would refuse to correct themselves and from checking the absence of security breaches in sensitive pieces of software. Sometimes, without knowing it, State services use software which secretly transmits confidential information to foreign companies or bodies. But the economic model of the software and telecommunication industries, pushed by the market, is mainly based on the appropriation of clients and the exponential exploitation of the users' profile. These economic models encourage strategies of incompatibility, industrial secrecy, programmed obsolescence and violations of individual freedom. If the French State, because of the communication networks being transnational, cannot claim to be able to eliminate by law such deep-seated deviations it can anyhow help the development in France of an information society respecting public liberties, consumer security and healthy competition, and hope to be regarded as a forerunner in Europe and in the world.”* (preamble of a French law proposal made by PS members of parliament in 2000[2], followed up in 2002 by French UMP senators[3]).

A few figures

- The total amount of decent quality Free Software is **worth at least € 12,000 million**. This represents **at least 131,000 men.year**, or an annual contribution of € 800 million euros, half of which **comes from developers based in Europe**. In terms of service, Free Software could represent up to **32% of the market of computing-related services in 2010**. (“The impact of Free/Libre/Open Source Software on innovation and competitiveness of the European Union”, January 2007, available on the European commission's website)[4]

- In France, in 2004, **80% of companies in the CAC40** [French Dow-Jones] and **56% of administrations** and of local public governments were using Free Software (PAC, 2004). **67% of companies** were using Free Software, 16% were considering to do so in 2005 and only 17% had no planned use whatsoever in the short term (InformationWeek, November 2004).

- In 2005, nearly **90% of companies were considering migrating** their Windows Server to Linux in the upcoming year (InformationWeek, Research Brief “Linux Outlook”, February 2005) and **70% of all web servers in the world** were free servers(Netcraft, November 2005 based on 74 572 794 web site).

- In France, in 2006, the French administration has spent 9% of its computing budget on Free Software developments and Free platforms, including labor expenses, whereas it had spent only 6% in 2005. This represents 900 million euros and 15% of the total market of IT services

2 http://www.assemblee-nationale.fr/11/propositions/pion2437.asp
3 http://www.senat.fr/leg/ppl02-032.html
4 http://ec.europa.eu/enterprise/ict/policy/doc/2006-11-20-flossimpact.pdf

for the French administration, with a 12% per annum growth expected during the next two years (Markess International, April 2006).

- In France, in 2007, the turnover of the Free Software industry reached **€ 730 million**, which represents a 66% increase compared to 2006 (figures from Pierre Audoin Consultant).
- Here is the **ratio of immigration/emigration of free software developers: France is by far last** though it is amongst the countries where student-engineers participate the most to Free Software projects (see [4]).