

# Software Patents: A Trojan Horse

Welcome Ladies and Gentlemen,

I would like to thank the University of Verona for giving me the opportunity to give this talk here, professor Vittorio Murino and Davide Quaglia for organizing this meeting, and everybody else who helped, like Lorenzo Grespan, who took the initiative.

Software Patents: A Trojan Horse

Small & Medium-sized Enterprises are the backbone of economy. 80% of the new jobs in Europe are created by Small & Medium-sized Enterprises. Multinationals often create jobs elsewhere, SMEs create jobs here. Take good care of SMEs, and you will have a solid economy. In the coming hour we will see that software patents are bad for SMEs, are a major threat to interoperability, hinder instead of encourage innovation and lead to very high transaction costs.

Is there anyone who knows how many software patents there are in the US?

... About 150,000.

Imagine you are a software writer in the US, and you do not want to violate any patents. How could you do that?

... Stop writing software. It is impossible to write software in the US without violating patents.

## Webshop

Let's take a look at the webshop poster. These are patents that have been granted in Europe. A simple webshop can violate 23 patents. Every patent holder can sue the webshop owner, and take part of the revenue. There will not be any revenue left.

On number one we see "Selling things over a network using a server, client and payment processor, or using a client and a server" This patent covers internet shops. Everyone with a webshop may have to pay. Is it an invention to sell something? No, it is not, it is an everyday idea. Was implementing it so difficult? No, in every book on programming in Java for beginners it is explained. It is just a simple applet.

On number three we see "Shopping cart: Electronic shopping cart". I found the code for this one in "Programming in Java for Dummies". Some 230 lines of code, a few hours work. There are books with titles like: learn Java programming in 24 hours. When you

start with such a book in the morning, before lunch you will violate your first patent. Imagine you finish the book and put everything you learned on the internet. I can only say: Don't try this at home!

All kinds of things we already knew, like “tabs” (4) or “pay with a credit card” (9) are patented. These patents are trivial, and very broad in scope. They should never have been granted. A patent is a monopoly for 20 years, in exchange for the disclosure of an invention. These are not inventions. The European Patent Office grants patents for all software with a technical contribution in it. Using less memory or making things run faster is considered a technical effect by the European Patent Office. The patent grant threshold is ridiculously low. It is becoming impossible to write software in Europe without violating patents. And all this, while patents are not needed: software is already protected by copyright.

## Minimal efficiency gain

In Europe, you can get a patent for a minimal efficiency gain. Using less memory or making things run faster is enough. This is very detrimental. Let's make an addition sum. Society gets almost nothing, a minimal efficiency gain. On the other hand, society pays dearly: exclusion, monopolies, royalties, high transaction costs, higher prices, loss of interoperability, an overkill of patents, second hand solutions. Granting patents in exchange for a minimal efficiency gain is detrimental to society.

## Small & Medium-sized Enterprises

Small & Medium-sized Enterprises are the backbone of economy. 80% of the new jobs in Europe are created by Small & Medium-sized Enterprises. Multinationals often create jobs elsewhere, SMEs create jobs here. Take good care of SMEs, and you will have a solid economy.

Do patents protect the products Small & Medium-sized Enterprises make? No. Patents do not protect products. You may have patents on a few aspects of your product, but others may have patents on other aspects of the same product. Violate one patent, and you can not sell your product. Having patents does not give you protection.

Software is full of ideas, software will be full of patents. Tens, if not hundreds of patents per product are no exception. Multinationals acquire thousands of patents a year, make cross-license agreements. Small & Medium-sized Enterprises have to acquire tens or hundreds of licenses. One unfriendly patent owner can lock an SME out, on its own. Even if all the patent owners are friendly, each license will cost a few percent of the revenue: impossible to pay. Small companies and start-ups are locked out.

IBM has about 40.000 patents, of which some 10.000 software patents. In the US, IBM can almost always find a patent you violate, you have to take a license. IBM “earns” 1.7 billion dollars each year that way. This is often called the IBM tax. The man who designed this scheme, now works for Microsoft. Microsoft promised its shareholders to file for over 3,000 patents a year.

I spoke an Italian developer some time ago. He had a patent on an invention. He showed the invention to a company. It was not interested. Later he accidentally saw the company was selling his invention. He went to a lawyer, you know what the lawyer said? He said: “I’m too expensive for you. And I’ve got no idea whether we will win.”

I spoke with more patent owners. Philips, the Dutch multinational, has 100.000 patents. Philips makes money with it. But all the small owners, they never made a cent with their patents.

Deutsche Bank Research states that SMEs “are crucial providers of path breaking innovations, but would be most adversely affected by patentability.”

The SME-association UEA-PME represents 11 million companies, close to 50 million employees – a substantial part of the European workforce. The UEA-PME strongly opposes the Council's version of the software patents directive.

Europe wants to be the most dynamic knowledge society in 2010, this is called the Lisbon agenda. We can forget the Lisbon agenda, if we forget our Small & Medium-sized Enterprises.

## Studies

Let's take a look at the scientific evidence. The most interesting study was conducted by Bessen and Hunt, “An Empirical Look at Software Patents”. It is an empirical study on the effects of software patents on investments in innovation in the US. It concludes that software patents have in the US resulted in a transfer of resources from R&D to patenting activities. More patents meant less innovation, even within the companies that patented most.

Patents hinder instead of encourage innovation in fields where most innovation is incremental, step by step, such as in software development.

## Incremental innovation

Software is developed step by step. If one step is patented, follow up development is blocked. I would like to ask a question again. MPEG4 is a new video compression standard. Is there anyone who knows whether it is covered by patents?

... Yes, it is covered by patents.

Does anyone know how many patents?

... 900 patents. Every little step in it is covered by patents. From research done by Erich Bieramperl, a veteran specialist in the signal processing field, it appears that these 900 patents are each rather weak on their own, but together form an impenetrable thicket that makes programming in this area a hazardous exercise and license-payments unavoidable. Alternative implementations are seriously threatened by this massive amount of broad and trivial patents.

What has happened with the patent system, that this is possible? About a century ago patent offices started to lower the patent grant threshold. Big companies can build up huge patent portfolios, and finance their research departments that way. This is the reason you can get a patent in exchange for a minimal efficiency gain. It works for big companies. They amass patents, join patent pools.

In the software field, this has disastrous results. The software sector is highly competitive, with low entry costs, many small players, rapid consequential development and an additional source of innovation: open source. Unlike in other industries, in the software field interoperability is essential. The small players are taxed or kicked out of business, and patenting every little step blocks follow-up development. Interoperability is lost. Patents demolish the characteristics of the software field.

## Software patents are a major threat to interoperability

Interoperability lies at the foundation of the information economy and allows for fair competition by all players large and small.

One of the worst things that may happen, is that a standard is covered by a patent. If that happens, interoperability is lost. Keeping standards and protocols free of patents, is one of the biggest concerns of the World Wide Web Consortium, as you know, the organization that makes the internet protocols. It is costing them an enormous lot of time and effort, and even then they can not be sure. It is impossible to make a standard without any doubts whether it will violate a patent. If they fail, a standard can be taxed. Everyone who uses the protocol can be sued and has to pay.

You all know what this is. It is an Ethernet connection cable, with an Ethernet connection plug. Without this plug, no network. According to Dr. David Martin, this plug is covered by 683 patents.

## Monopolizing business

Selling something, or paying with a credit card, is not an invention, it is a way of conducting business, it is a business method. Business methods should never be patentable, there is no reason for it. People will always want to find ways to make money, there is no extra incentive needed. And you certainly do not want monopolies on ways to conduct business. And yet, in Europe, if you combine a business method with a very small technical contribution, like using less memory or making things run faster, you can patent the business method. This way, commercial uses of the computer can be monopolized, commercial uses of the internet can be monopolized.

## Patent trolls

A patent is an exclusive right, you can ask whatever you like for a license. Let me give you an example. Apple makes a very profitable mp3player, the iPod. Apple sells music for it, with iTunes. Apple is now being sued by a Hong Kong based company that demands 12% of the iPod and iTunes gross revenue, alleging that Apple violates its Digital Rights Management patent.

This 12% of the gross revenue is an enormous lot of money, just for one patent. Did Apple steal the idea, or is this a case of independent rediscovery? Independent rediscovery is very sad: you create something yourself, and then it turns out someone else already patented it. You do the work, and you have to pay someone. It can happen to anyone here in the room. The lower the patent grant threshold is, the bigger the chance on independent rediscovery. And the patent grant threshold is ridiculously low... Transaction costs in the software field go up enormously.

We are watching a new, devastating development, the emergence of the patent trolls. Patent trolls are parasites, they are a plague. These are companies that do not do any research, do not make any products, do not innovate. The only thing they do is acquire patents, and then extort money from companies.

## European manufacturing industries

Nowadays, cars, radios, televisions, washing machines, mobile phones, etc, contain software. Like Apple, with the iPod, the companies making these products can be sued for software patent infringement. The amount of software patents is exploding. Companies want to protect themselves against copycats with software patents. But these patents make them vulnerable for patent infringement accusations. Patent trolls found out it is more easy to copy patents than to copy products. They watch companies that are successful with patents, and then apply for patents that are close to these companies' patents. Software patents are a Trojan Horse.

In a market where things move so quickly, time to market and knowing what your customers need, is a much better protection against copycats than patents could ever be.

Let's take a look at the world map. The economic region without software patents, will have the lowest transaction costs, the most competitive market. If you succeed there, you will succeed everywhere. Europe should be that region with the lowest transaction costs.

## Bureaucracy

Patents are supposed to stimulate innovation. It is the only reason for their existence. And if they do not stimulate innovation, they should not exist. Unfortunately, there are other reasons they exist, bureaucratic reasons. The European Patent Office gets paid for every patent it grants. And patent officers get a point for every case they handle, and granting a patent is less work than denying a patent. It is a silly dynamic, leading to more and more patents.

The European Patent Office already granted 30.000 software patents, three quarters of them are owned by United States and Japanese companies. Most license money will leave Europe. The new members of the Union, mostly Eastern European countries, hardly own software patents and will never catch up - a European patent costs about 30.000 to 50.000 euros. The directive will have a devastating effect on the new member states' software companies. Eastern Europe will never own its software industry under the Council's text. And with 1.7 percent of the patents, a country like Italy won't do much better.

## Harmonization

The European Commission and the Council of Ministers want to harmonize the European patent laws. What does this mean? Although the European Patent Convention says “software as such” is not patentable, the European Patent Office granted 30.000 software patents. Over the years, the European Patent Office made the exclusion of “software as such” meaningless. A highly controversial interpretation led to the excesses we saw, the 30.000 software patents. And now they want to harmonize this mess. In the future patents like these will be enforceable on a European scale. Harmonization is not a neutral operation. The status quo is horrible. What Europe needs is a major roll-back.

It is said that the situation will not be as bad as in the USA, since in Europe inventions have to be “technical”. But “technical” is not defined, we already saw that a minimal efficiency gain is enough to get a patent. And business methods are patentable too if combined with a minimal efficiency gain.

## Summary

I'm coming to the end of this presentation. I will say a few words on the political situation, but first I would like to summarize a few things.

- 80% of the new jobs in Europe are created by Small & Medium-sized Enterprises.
- Software patents lock SMEs out.
- It is becoming impossible to write software without violation patents.
- Granting patents in exchange for a minimal efficiency gain is detrimental to society.
- Patents hinder instead of encourage innovation in fields where most innovation is incremental, such as in software development.
- Software patents are a major threat to interoperability.
- Software patents demolish the characteristics of the software field.
- Transaction costs in the software field go up enormously.
- The economic region without software patents, will have the lowest transaction costs, Europe should be that region with the lowest transaction costs.

## Political situation: Time is running out

In 2002 the European Commission proposed a directive that opened all doors for patenting software. In 2003 the European Parliament closed the doors. According to the European Parliament, an invention has to constitute a new teaching on cause-effect relations in the use of controllable forces of nature. For instance, the antilock braking system (ABS), which automatically brings a car to a stop, does this. It is a better way to stop a car. This is patentable. Data processing, on the other hand, should not be patentable.

This year the Council of Ministers re-opened the doors. Only Spain voted against, some countries, like Italy, abstained. Despite parliamentary motions in Germany, Poland and the Netherlands, the Council adopted a common position, which will endanger the European software industry.

The proposal is now being discussed in the European Parliament again. It will be harder this time, the multinationals woke up. Microsoft and IBM sent their top lobbyists to Brussels.

What most people don't know, the directive is at the moment also being discussed in the Council. The Council is talking with the European Parliament. What position should the Council take? And, what position should members of the Council, like the Italian government, take? The Council reached an outspoken common position, in which it does not believe any more. There were parliamentary motions in the Netherlands, Germany and Poland, there are seven unilateral declarations. The Council should not support its common position. Without strong European Parliament amendments an extreme directive

will become law, an extreme directive in which the Council itself does not believe any more. The council has to stimulate the European Parliament to make clear amendments to prevent this, to keep the lawmaking process going. Without this, within a few months we will have an extreme directive.

In the European Parliament, it will first go to the Juri-committee, which has a few Italian members. They will play a major role. Do inform them. Feed them with information. Unite, for instance, on the [it-parl@ffii.org](mailto:it-parl@ffii.org) list. Support the FFII amendments. Some of you will come to Brussels, I hope.

Time is running out, we have to act now. Do make noise. Speak out. And I hope that organizations of Small & Medium-sized Enterprises will speak out too. They will have to bear the hardest burden. Especially Italy, with all its Small & Medium-sized Enterprises, should never support patentability of software.

Thank you.

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