

Software patents, innovation and competition policy

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Innovation in the software sector

Much more dynamic innovation cycle than in other areas of the service sector, so in the software sector:

- **“Rapid innovations and effective development processes are of even more importance [than in other sectors] for competitiveness”
(Fraunhofer)**

Innovation in the software sector

- **“Obstacles to conducting development work even more serious ... than in other branches of the economy”**

Innovation in the software sector

- “Open source ... is already the most important external source of software components [and its] importance will increase greatly”
- “Open source ... is a functional input which makes the development of own software more effective”

Patenting in the software sector

- **“Patents have the least widespread of all formal and informal protective strategies and have the least significance”**

Patenting in the software sector

- “1/3 of companies and 2/3 of independent developers have been hindered in the execution of their own projects by patents belonging to others”
- “20% [of software developers] and 40% [of software-dependent manufacturers] are involved in lawsuits [related to IPR]”

Software patent quality

- **Software claims account for about 25% of US patents granted today**
- **However, they account for 40% of “submarine” patents**
- **Issued software patents are typically of very low quality and very poorly referenced to prior art**
- **Complexity and speed of development makes it harder for patents to be properly screened, assessment is left to the courts**

Software patenting strategies

- No disclosure (treble damages)
- Lawsuit threats
- Cross-licensing
- Standards hijacking

No disclosure

- Software companies advise their programmers *never* to look at prior art or patent databases, lest a later infringement claim include damages for *wilful* infringement
- This impedes innovation and counters the basic purpose of a patent (as opposed to trade secret), which is public disclosure to further innovation

Lawsuit threats

- **Bad patents are granted, but it is too expensive to challenge them in court**
- **Holders of bad patents extract revenue by threatening infringement lawsuits – going to court is more expensive than licensing**
- **Companies with no running business can hold industries to ransom through lawsuits (Eolas vs Microsoft)**

Cross-licensing

- **Most large software companies don't look to patents for revenue but for defensive cross-licensing: they cross-license all their patents without review to competitors, essentially forming cartels**
- **Most large companies patent purely for defensive purposes – e.g. Microsoft started building a huge patent portfolio after losing a court case (Stac Elec.)**

Standards hijacking

- **The deliberate non-disclosure of patents held during the process of developing a standard; once the standard is agreed upon, the patent is disclosed and monopoly rents charged (Rambus)**
- **New policies in many standards bodies to try to prevent this**

Software patents and SMEs

- **SMEs cannot build up defensive portfolios large enough to participate in cross-licensing cartels, so they:**
- **SMEs are thus extremely vulnerable to anti-competitive frivolous lawsuits from larger competitors.**

Software patents and SMEs

- **The inherently poor quality of software patents granted means that every software developer may infringe thousands of patents**
- **Any large firm has a patent portfolio broad enough to sue a competitor too small to have its own defensive counter-portfolio**

Software patents and SMEs

- **Very few SMEs are able to develop patent strategies of their own**
- **Even rarer is the SME that has patented innovative technology and succeeds in maintaining a running business based on its patents**
- **More common are SMEs that are sued out of business, or have no business but rely on frivolous lawsuits for revenue (Eolas)**

Patents and open source software

- **Software patents can be very damaging to open source software – individual developers are in a similar (but worse) position as SMEs**
 - **Moreover, with the source code available for anyone to inspect, finding potential “infringements” to generate frivolous lawsuits is easy**
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Patents and open source software

- **Open source is playing a major role in re-introducing competition into the software market**
 - **Thanks to open source, Microsoft does not have a monopoly position in some sectors of the server market**
 - **This is especially so in Europe, which has acted as a software patent “refuge” for open source**
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Patents and open source software

- Europe has many more open source developers than the US, even in US-based projects (Debian: 48%)
- 50% of European developers earn income from open source
- The absence of the European software-patent “refuge” would lead to a significant change in the competitive environment, in Europe and globally