

The telecom standards experience shows the European Interoperability Framework (EIF) for software is right



European Committee for Interoperable Systems (ECIS) Presentation

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GOTTLIEB

December 10, 2008

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The European Interoperability Framework (EIF)

- The EIF proposes that public services use software based on open standards or open technical specifications, in order to guarantee interoperability, to facilitate future reuse of the software, and to provide long-term sustainability while minimizing constraints.
- In the words of the EIF, *“Openness of standards or technical specifications is important for public administrations because of its relationship with interoperability, freedom and choice”*, and *“Any Public Administration must be independent of any particular supplier in terms of having permanent access to and control over its own data.”* (p. 53).
- Specifications are “open” if *“[t]he intellectual property ... is made irrevocably available on a royalty free basis [and] There are no constraints on the re-use of the standard.”*

A criticism of EIF “open standards” definition

- “Open standards” definition (supposedly) would not allow users to benefit from a wide range of information and communications technology (ICT) products that implement standards such as DVB, GSM and MP3.
- BUT:
- EIF does not target consumer telecommunications or entertainment devices, but are focused on PEGS (Pan European Governmental Services).
- “The focus is on the interoperability within the context of complex, software based ICT systems.”
 - In software interoperability, as opposed to telecommunications radio interfaces and hardware, open standards that are available under RF conditions are becoming prevalent.

The telecom experience shows the EIF approach is right

IPR-related problems arise more and more because of:

1. Ever greater technical complexity
2. Ever greater legal complexity
3. Ever greater economic complexity
4. Ever greater reliance on IP-based standards

In the telecom sector, IPRs are needed for innovation, and FRAND licensing is the norm. But problems of “strategic misuse” of IPRs arise. In software interoperability it is not too late to avoid this.

2.1 – ever greater technical complexity of products increases risk of hold-ups and royalty stacks

- More network effects and interdependence of products
 - Owner of *de facto* standard may gain power, and if a firm has power, IPRs can be used to block interoperability, thus killing competition and innovation in neighbouring markets
 - Example: *Microsoft* case
- Ever greater complexity of products
 - 6,000 patents in WCDMA, determine functionality
 - Patent on one component can block entire product
 - risk of hold-up (example: *RIM (Blackberry)* case)
- Cooperative innovation fragments patent ownership
 - Risk of higher royalty stack, and difficulties to get all necessary licenses
- Greater vertical complexity of production
 - IPRs at different levels of trade create risk of double marginalization



2.2 – ever greater legal complexity increases risk of patent thickets choking innovation

- More and more categories of IPRs – not just patents and copyright, but also business patents, software patents, data protection rights, extension of protection of pharmaceuticals, etc.
 - Too much protection, or protection is granted even if risks and R&D costs are not high?
- “weaker” patents
 - Not enough “prior art” review
 - Even if patents are weak, patent litigation may be risky and costly
- Patent thickets”
 - Dense tangle of overlapping patent claims and other IPRs covering and surrounding a product or an area



Patent lawyer worrying how to get through a thicket

Example of “patent thickets”: *Valeo/LuK* case

- Judgment of January 26, 2005, *Tribunal de Grande Instance* of Paris
 - Very large number of patent applications, very difficult to challenge all
 - LuK systematically and unlawfully extended divisional patent applications to cover competitors’ inventions,
 - LuK lodged patent infringement proceedings against competitors even though it knew that it had no real chance of success because the underlying patents had been unlawfully extended.
 - Whenever applications were rejected, LuK would file appeals to maintain uncertainty, regardless of the chances of success.

 - The resulting patent “thicket” made it impossible for Valeo to compete
 - These practices were combined with misleading statements made to Valeo customers about purported violations of LuK patents, discouraging purchases from Valeo
 - Decision: abuse of dominance

2.3 – ever greater economic complexity increases risk of hold-up by trolls

- New revenue models suggest that IPRs are not the only model that can encourage innovation
 - Internet open standards are IPR-free,
 - Open source software does not rely on royalty income (but relies on copyright and derives income from follow-up services and complementary products)
 - Innovative advertising-funded services do not rely on fees to users
 - Two-sided markets: giving away one product for free may generate demand for another fee-paying product – sometimes therefore royalty-free can be “fair”
- New technology business models – “trolls” and “patent miners”
 - Can have good effects: a market for patents may foster innovation
 - Can have bad effects: patent traps and royalty traps (“hold-up”) may discourage investment – remuneration is taken away from the person who incurred R&D costs and bore the risk of product development

Example of “patent mining”:

- Creative brainstorming sessions or “patent mining”
- But also: buying up 1,000’s of patents developed by others....
- License patents, but do not make any products themselves
- Offer “protection” for “investors”



- “trolls” or the innovators of the future?
- It depends on how they use IPRs...
 - to encourage product development (good)
 - or to “trap” and “hold up” (*NTP/Blackberry*) (bad)

2.4 –greater reliance on patent-based standards increases risk of hold-up and royalty stacks

- Standard setting excludes inter-technology competition, and increases market power of patent owners whose patents are included in the standard. Result: industry implementing the standard becomes vulnerable:
- 1. Patent traps by insiders (members of standard setting organization):
 - Rambus, Qualcomm H.264,
- 2. Royalty traps / hold-ups by insiders
 - Qualcomm WCDMA,
- 3. Hold-ups by outsiders (patent trolls)
 - Blackberry (RIM) case
- 4. Circumvention of FRAND (sale of patent dropping FRAND promise):
 - IPCOM case, GE/Infineon case, N-Data, Rembrandt ATSC
- 5. Distortion of standards-setting process (vote stacking, etc):
 - IEEE 802.20, Microsoft OOXML



Conclusion: The telecom/consumer electronics, experience illustrates the danger of abuse

- In telecom, IPRs are needed for innovation, but...
- Some firms begin to use IPRs for strategic purposes, where IPR can be much more valuable than the investment in the innovation
 - Creating “thickets” of weak patents to exclude rivals even if not justified by R&D risk and costs (example: *Valeo/LuK* case)
 - To extend market power beyond duration of patents
 - To exclude rivals from neighbouring markets, to extend market power there (example: *Microsoft, Qualcomm*)
 - To “hold up” and exploit users after industry is “locked in” in a standard (example: *NTP/RIM (Blackberry), Rambus, Qualcomm*)
- Negative effects:
 - Innovators are vulnerable to IPR attack, “interoperability denial”, and “hold-up”
 - Remuneration is taken away from innovators and product developers
 - **This can discourage innovation – exactly the opposite effect than what IPRs are supposed to achieve!**

In telecom, FRAND is the only remaining solution

FRAND licensing means:

- A license or promise to license:
 - **No refusal or termination** of a license, **no injunctive relief**, no suit for treble damages, if defendant is willing and able to pay and license its essential patents on FRAND terms, but in good faith disagrees on T&Cs imposed by licensor
 - No constructive refusal to license (e.g., no excessive fees, no delays, etc.)
 - License should be available to all interested licensees on standard T&Cs
- Fair, reasonable rate –balancing all interests (proportionality). Art 82(a) and 81(3)
 - rate that IPR owner could have obtained in *ex ante* inter-technology competition (unless the IP owner took anti-competitive action to diminish ex ante inter-technology competition) = incremental amount industry can earn from licensed technology over next best alternative
 - **No monopoly rent**. Allowing IP owner innovation incentive, but not allowing IP owner to appropriate entire value of standard. Avoid Cournot stack
- Non-discriminatory – equal treatment of all licensees, including IPR-owner's own downstream business; no distortion of competition. Art 82(b) and (c) and 81(3)(b)
 - **No restriction of downstream competition on the merits** (no price-squeeze, no T&Cs that have the object or effect of restricting downstream competition, etc)
 - E.g., no differential treatment based on whether licensee purchases the licensor's downstream product
 - **No restriction of upstream innovation and technology competition** (no free NAP/pass-thru)

But in software interop it is not too late: royalty-bearing patents / restrictive licenses can be avoided

- For software interoperability, it is not too late to avoid the problems that the telecom industry experiences
 - Patents can play a useful role even if they are licensed royalty free for software interoperability standards without restrictions on re-use of the software code: create ability for revenues in sale of neighbouring products and services, and can be used to keep markets open (defensive suspension)
- Open source shows this approach is viable
- Internet experience shows this approach is viable
- And EIF is nuanced: “Open standards or technical specifications are preferred (for all the reasons given above), but if there is no suitable, feasible open standard or technical specification, one can investigate some of the “less open” alternatives.”