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**Patent system**

**Principles of the Patent System**
- provide protection to technical principles
- stimulate and support technical innovation
- create competition “Win in product, win in patent”
- create economic growth

What is the problem with software?

**Software economy**

Revenue with Software Products by region

Source: IDC
Europe: Software Economy

1996
Revenue: € 37 bill.
Tax revenue: € 15 bill.
Jobs: 340,000

2001
Revenue: € 60 bill.
Tax revenue: € 22 bill.
Jobs: 430,000


Views on software

Technical view
PAST: mainframe computing, minicomputers
TODAY: personal computing, pervasive computing, embedded computing

PROBLEM TODAY:
software is expensive to develop, but easy to copy

Legal view
PAST: Copyright protection only
TODAY: Copyright protection, patent protection

QUESTION TODAY:
What is the best way to protect software in a competitive market?

Copyright vs. Patent I / legal FACTS

<table>
<thead>
<tr>
<th>OWNER</th>
<th>Utility patent</th>
<th>Copyright</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROTECTION BEGINS</td>
<td>Granted after examination by Patent Office</td>
<td>upon creation, fixation of original expression</td>
</tr>
<tr>
<td>DURATION OF PROTECTION</td>
<td>Protection for max. 20 years</td>
<td>Protection for 50 to 120 years</td>
</tr>
<tr>
<td>SUBJECT MATTER</td>
<td>Protects technical ideas, concepts, principles</td>
<td>Literary, dramatic, musical, scientific work</td>
</tr>
<tr>
<td>STANDARDS FOR INFRINGEMENT</td>
<td>Scope of protection defined by scope of patent claims</td>
<td>Copying and improper appropriation</td>
</tr>
<tr>
<td>STANDARDS FOR VALIDITY</td>
<td>Originality, novelty, nonobviousness</td>
<td>Originality &amp; fixation in a tangible medium of expression</td>
</tr>
</tbody>
</table>
**Legal Background**

**Patents:**
- National Patent Laws
- European Patent Convention
- Patent Cooperation Treaty (PCT)

-- Directive on the patentability of computer-implemented inventions

**Copyright:**
- National Copyright Acts
- European Union Directive 91/250/EC on the legal protection of computer programs
- Berne Union for the Protection of Literary and Artistic Property

**Limitations with software patents**

Traditionally disallowed
- some statute laws exclude programs for computers as such;
  - Art 52(2,3)
  - influence on patent filing strategy

Prior art poorly codified
- lack of long-term patent data base

Patent system moves more slowly than the software industry
- issue of software patent might take more than 3 years i.e. longer than normal software innovation cycle

**Advantages of Patent Protection**

**Scope**
- If claimed properly broader scope than copyright

**Independent Creation**
- Protection against independent creation
  - computer program developed first subject to patent protection

**Monopoly**
- Patent protection allows to exclude others from making, using, selling, importing
- no proof of copying by infringer
- threat of future infringement prevents from emulating technology
**Advantages of Copyright Protection**

**Lower standard**
- lower threshold compared to required inventive step

**Less expensive**
- average costs: software patents $20,000 – 50,000 €
  - copyright registration: $< 1,000 €

**Shorter time to effect protection**
- patent issued 2 – 3 years after filing

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**Patent OR Copyright**

**Business view**
- What are the grounds for competition?
  - market share, speed, quality, support
  - price
  - software innovation

**Legal view**
- predictability to get software patents granted
- predictability to the resolution of software patent and copyright litigation cases

**Technological view**
- What kind of innovation is important to your software development?
  - Incremental or fundamental changes
  - hardware innovation
- What is the product life cycle of your software?
  - compared to term of right

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**USPTO software patent applications**

US Patents / IPC Class G06F

![Graph showing USPTO software patent applications from 1995 to 2000 by country (DE, JP, US, Total)]
Patenting Software and Services, Harald Hagedorn  /  13

Patenting Software and Services, Harald Hagedorn  /  14

Patenting Software and Services, Harald Hagedorn  /  15

**EPO Software patent applications US, JP, EP, DE**

**Granted Software Patents: ca. 20000 +**

**Software patents issued in 2000**

**Who owns Software patents?**

**Patents issued in year 2000**

**software related inventions to protect by patent**

**What kinds of things can IP protect in software?**

*software you can think of . . .*

- Interfaces (User and other)
- Language & extensions
- Data structures
- Tools
- Business methods
- Features/Functionality
- Integration
- E-commerce solutions
- Internet solutions
- Debugger
- Operating systems
- File systems
- Graphics & windowing systems
- Compilers & simulators
- Cryptography & data compression
- Data storage and retrieval
Why do companies apply for software patents?

- Provide competitive advantage
- Protect your investment
- Control market growth
- Revenue generation
  - Product exploitation Licensing programs
    Help form strategic alliances with partners
- Access to underlying technology in exchange for state of the art
- Legitimization
  - Market
  - Investors
- Cross-license
  - Avoid blocking patents
  - Avert litigation
- Counter claim is best defense in patent litigation

Current issues with software patents in Europe

Objectives to be addressed by EU directive on CII

- Harmonization among EU member states
  - What makes a computer implemented invention technical?
- Legal certainty, transparency, clarity of law
- Enforceability of granted software patents
- Rise awareness for software patents
- How to deal with business method patents

Business method patents

Methods for doing business

- Teaching
- Selling, Trading
- Valuation of assets e.g. risk evaluation
- Insurance
- Financial
- Services
Conclusion

- Patentability of software is a challenge to the patent system
- Software patents are reality
- Software companies can’t ignore them
- Open questions exist on
  - Quality standard in granting software patents
  - Cross border enforcement of software patents

One hundred years ago, companies made products. Manufacturing drove the economy. Now it’s all about ideas. Knowledge is the foundation of today’s economy. In fact, up to 85% of the market capitalization of today’s Fortune 500 now lies in intellectual assets, rather than traditional tangible assets.

(Source: The Gartner Group, October 2001)