

# Software Patents?

## Policy, Law and Economics of Intellectual Property

EPIP Conference  
Munich, 7-8 September 2006

Prof. Dr. Reto M. Hilty  
Division Intellectual Property and Competition Law

**Max Planck Institute for Intellectual Property,  
Competition and Tax Law**



MAX-PLANCK-GESELLSCHAFT



MAX-PLANCK-GESELLSCHAFT

# Software Patents?

## I. Overview

II. Scope of Discussion on Software Patents

III. Previous Extension of Patent Law:  
Observations

IV. Further Extension of Patent Law:  
Requirements

V. Characteristics of Software

VI. (Economic) Goals of Legal Protection

VII. Conclusions

Prof. Dr. Reto M. Hilty

Division Intellectual Property  
and Competition Law

Max Planck Institute  
for Intellectual Property,  
Competition and Tax Law



# I. Overview

## ■ USA

## ■ Europe?

### ● EPO

- Art. 52(2)(c), (3) EPC: **Exclusion of “programs for computers” “as such”**
- Practice of EPO: widely liberal interpretation

### ● EU

- Diverse attempts at “harmonisation” (from 1999 on)
- EP rejects the Council’s proposition (6 July 2005)

### ● Result

- **No effective prohibition of software patents**
- Ongoing discussion



# Software Patents?

I. Overview

**II. Scope of Discussion on Software Patents**

III. Previous Extension of Patent Law:  
Observations

IV. Further Extension of Patent Law:  
Requirements

V. Characteristics of Software

VI. (Economic) Goals of Legal Protection

VII. Conclusions



## II. Scope of Discussion on Software Patents

### ■ Common Arguments:

- Interpretation of the **wording of the law**
- Notion of the **“technical character”** of software
- Conditions for patentability (**novelty, inventive step**)
- Verifiability of **state of the art** (“trivial patents”)
- Category of invention (process, product?)
- Suitability of patent law (costs, length of procedure)
- ...

→ **A too-narrow focusing on technical singularities**



## II. Scope of Discussion on Software Patents

### ■ Missing:

- Dissociation from a too technical perspective
- **Overarching perception** of impacts of
  - legal protection of innovation in general
  - protection via patent law in particular
- **Deductive approach:**

**Why legal protection for innovation at all?**



**What may patent law accomplish?**



**Is patent law the right answer for software?**



# Software Patents?

- I. Initial Position
- II. Scope of Discussion on Software Patents
- III. Previous Extension of Patent Law: Observations**
- IV. Further Extension of Patent Law: Requirements
- V. Characteristics of Software
- VI. (Economic) Goals of Legal Protection
- VII. Conclusions



### III. Previous Extension of Patent Law: Observations

- **Starting point: mechanical innovations** (product, process)
- **First fundamental extension: chemical products**
  - crucial question:
    - purpose-bound protection?
    - full product protection?
- **Later on: “Layer” of chemical product protection:**  
“living material” (**biotechnology**)
  - crucial question (full protection?) currently resurges
- **More recent: patents for software, business methods**
- **Most recent: patents for nanotechnology**



### III. Previous Extension of Patent Law: Observations

#### ■ Decisions on extension to “new” subject matter:

- legalistic
  - ethical
  - socio-political
  - “natural law”
- } considerations
- but **hardly ever** on
- **economic research**

#### ■ Economic research on patent law

- is quite advanced
- but
- focuses on
    - undifferentiated, general questions
    - **few comparative studies** on different subject matter



MAX-PLANCK-GESELLSCHAFT

# Software Patents?

- I. Initial Position
- II. Scope of Discussion on Software Patents
- III. Previous Extension of Patent Law: Observations
- IV. Further Extension of Patent Law: Requirements**
- V. Characteristics of Software
- VI. (Economic) Goals of Legal Protection
- VII. Conclusions

Prof. Dr. Reto M. Hilty  
Division Intellectual Property  
and Competition Law

Max Planck Institute  
for Intellectual Property,  
Competition and Tax Law



## IV. Further Extension of Patent Law: Requirements

### ■ Different variabilities have to be observed:

- **Skill requirements** for innovation (diligence or “ingenuity”?)
- **Investment requirements** (capital or HR intensive?)
- Possibilities of **amortisation** (mass or individual market?)
- Character of **related products** (long or short lifetime cycle?)
- **Industries** involved (SME or large enterprises)
- ...

### ■ Different (technical) subject matter may require

→ **differentiation within patent law**

or even

→ **different (= new) instruments of legal protection**



MAX-PLANCK-GESELLSCHAFT

# Software Patents?

- I. Initial Position
- II. Scope of Discussion on Software Patents
- III. Previous Extension of Patent Law:  
Observations
- IV. Further Extension of Patent Law:  
Requirements
- V. Characteristics of Software**
- VI. (Economic) Goals of Legal Protection
- VII. Conclusions

Prof. Dr. Reto M. Hilty  
Division Intellectual Property  
and Competition Law

Max Planck Institute  
for Intellectual Property,  
Competition and Tax Law



## V. Characteristics of Software

### ■ Assumptions on software characteristics:

- **Skill requirements:** very limited  
(programmer = inventor or craftsmen?)
- **Investment requirements:** (comparatively) limited  
(mainly human resources)
- **Amortisation:** possibilities depend on circumstances  
(standard software vs. individual software)
- **Related products:** very particular market situation  
(mostly short lifetime, permanent, dependent renewal)
- **Industries** involved: widely heterogeneous interests  
(dependence of SME on “standards” of large enterprises)



## V. Characteristics of Software

### ■ Conclusions:

- **Economics** of software and other subject matter **differ**
- Even characteristics of **different types of software** vary
- **Adequacy** of patent protection is (at least) **doubtful**
- Patent law may **harm** instead of stimulate **innovation**

→ A **“one-size-fits-all”** approach for the protection of **(technical) innovation** has to be challenged



# Software Patents?

- I. Initial Position
- II. Scope of Discussion on Software Patents
- III. Previous Extension of Patent Law: Observations
- IV. Further Extension of Patent Law: Requirements
- V. Characteristics of Software
- VI. (Economic) Goals of Legal Protection**
- VII. Conclusions



## VI. (Economic) Goals of Legal Protection

### ■ Legal Protection in General

- Legal protection requires **comprehensible justification** (intervention in dynamic competition = exception)
  - *One* (economic) justification: avoid “**market failure**”
  - “Market failure” **typically occurs**, if a market participant
    - faces the risk of not realising an (adequate) amortization
    - refrains from making (reasonable, desirable) investments
  - Occurrence of “market failure” **differs** from case to case; depends on **various circumstances of market situation**
- **Different kinds of innovations/investments may deserve different degrees of protection**



## VI. (Economic) Goals of Legal Protection

### ■ Legal Protection of Software

- **Evident likelihood of “market failure”:**  
mere copying of the medium containing the software  
→ coherent answer: **copyright law**
  - **Unlikelihood of “market failure”:**  
takeover of “common”, “minimal” programming ideas  
→ reverse engineering **too costly**
  - **Unclear likelihood of “market failure”:**  
fundamental, “epoch making”, adaptive software modules  
→ legal protection required for **sufficient incentives?**
- **Is patent protection the adequate answer to (possible) protection requirements?**



## VI. (Economic) Goals of Legal Protection

### ■ Risks of patent protection

- **Fundamental, adaptive software modules**  
→ (potentially) “essential facilities”
- **Granting of exclusive rights**  
→ jeopardises accessibility to/advancement of technology
- **Legal limitations on exclusive rights**  
→ unapt in practice (in particular “dependent invention”)
- **Disclosure requirements**  
→ usually insufficient in software-related patents

→ **If legal protection of software innovations is required:  
protection *sui generis* instead of patent protection?**



MAX-PLANCK-GESELLSCHAFT

# Software Patents?

- I. Initial Position
- II. Scope of Discussion on Software Patents
- III. Previous Extension of Patent Law: Observations
- IV. Further Extension of Patent Law: Requirements
- V. Characteristics of Software
- VI. (Economic) Goals of Legal Protection
- VII. Conclusions**

Prof. Dr. Reto M. Hilty  
Division Intellectual Property  
and Competition Law

Max Planck Institute  
for Intellectual Property,  
Competition and Tax Law



## VII. Conclusions

→ **More extensive economic research is required!**

- Truly existing **protection requirements**?
- Correlation of **investments** and possible **amortisation**?
- **Dependence** of SME on large enterprises?
- Impact of “**standards**” on application software?
- Objectives of legal protection: “**strategic patents**”?
- Impact of legal protection on **dynamic competition** (competition on innovation, competition on products)?
- **Open source** movement: different economic conditions?
- ...

→ **Lawyers (and legislators) depend on more information!**