

Business Method Patents, Innovation, and Policy

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Outline *(paper, not talk)*

- What is a business method patent?
- Patents and innovation
- Patent quality
- Survey of policy recommendations
- The opposition system

Simple economics of patents

The Patent System Viewed by a Two-Handed Economist

| Effects on: | Benefit | Cost |
|-------------|---|--|
| Innovation | creates an incentive for research and new product/process development; encourages the disclosure of inventions | impedes the combination of new ideas & inventions; raises transaction costs for follow-on innovation; provides an opportunity for rent-seeking |
| Competition | facilitates the entry of new (small) firms with a limited asset base or difficulties obtaining finance | creates short-term monopolies, which may become long-term in network industries, where standards important |

What is a business method patent?

- A patent on a method of doing business, broadly defined?
- A patent on implementing a traditional method of doing business in software or on the web?
- A patent classified in US Patent Class 705 (Data processing: financial, business practice, management, or cost/price determination)?

Some examples

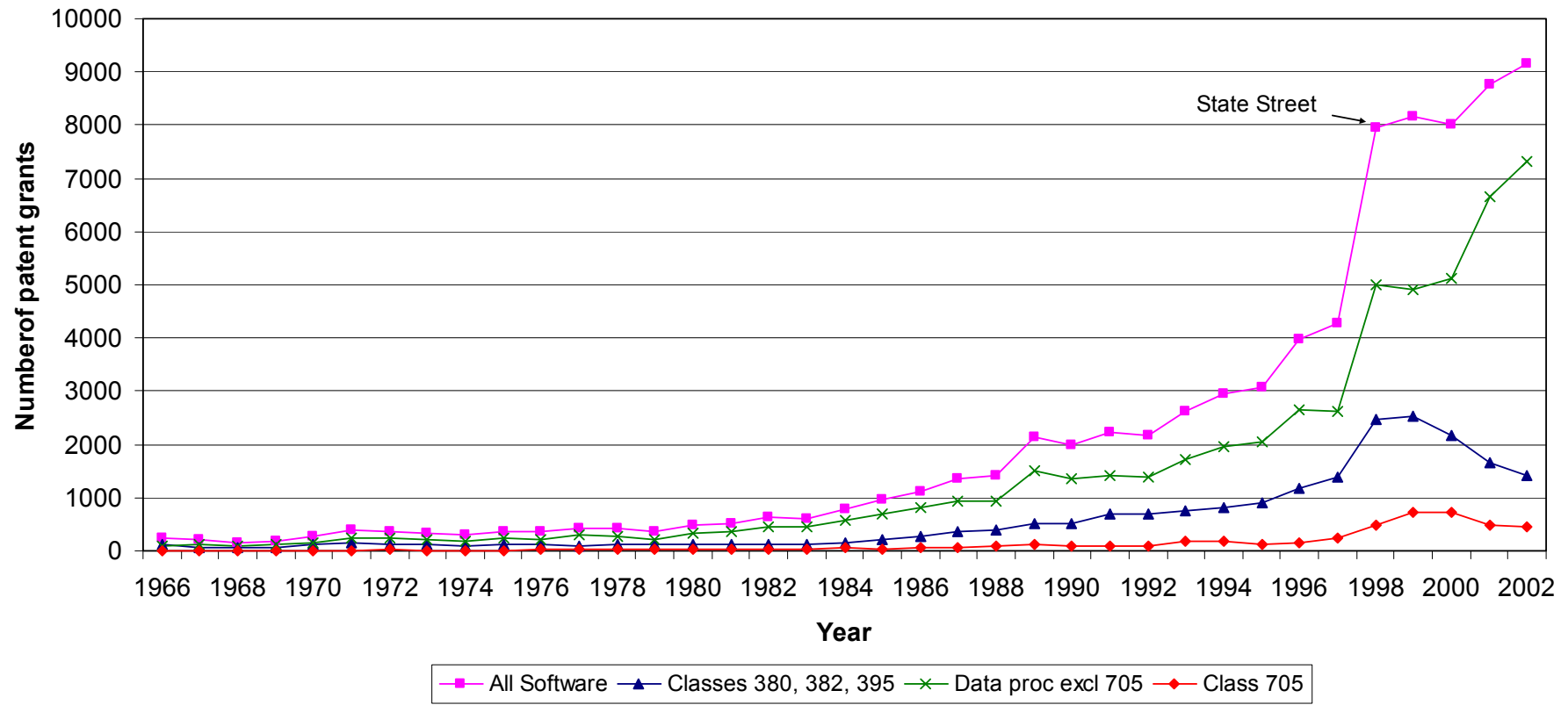
- 5806063 (Sept 98, class 707)
 - Y2K patent on adjusting the date by changing the base year (now under re-examination)
- 5933841 (Aug 99, class 715)
 - structured document browser which includes a constant user interface for displaying and viewing sections of a document
- 6067562 (May 00, class 709)
 - system and method for downloading music selections from a digital radio broadcasting station that contains several hundred selections
- 6175824 (Jan 01, class 705)
 - method and apparatus for choosing a stock portfolio, based on patent indicators including citations

Software/business method class definitions

- All software: 380, 382, 395, 70X, 71X
 - Older software: 380, 382, 395
 - Newer software: 70X
 - USPTO business method patents: 705, subject to special treatment
 - Two examinations
 - Prior use defense

Trends in software patenting

US Patent Classes with Software/Business Method Patents
1966-2002

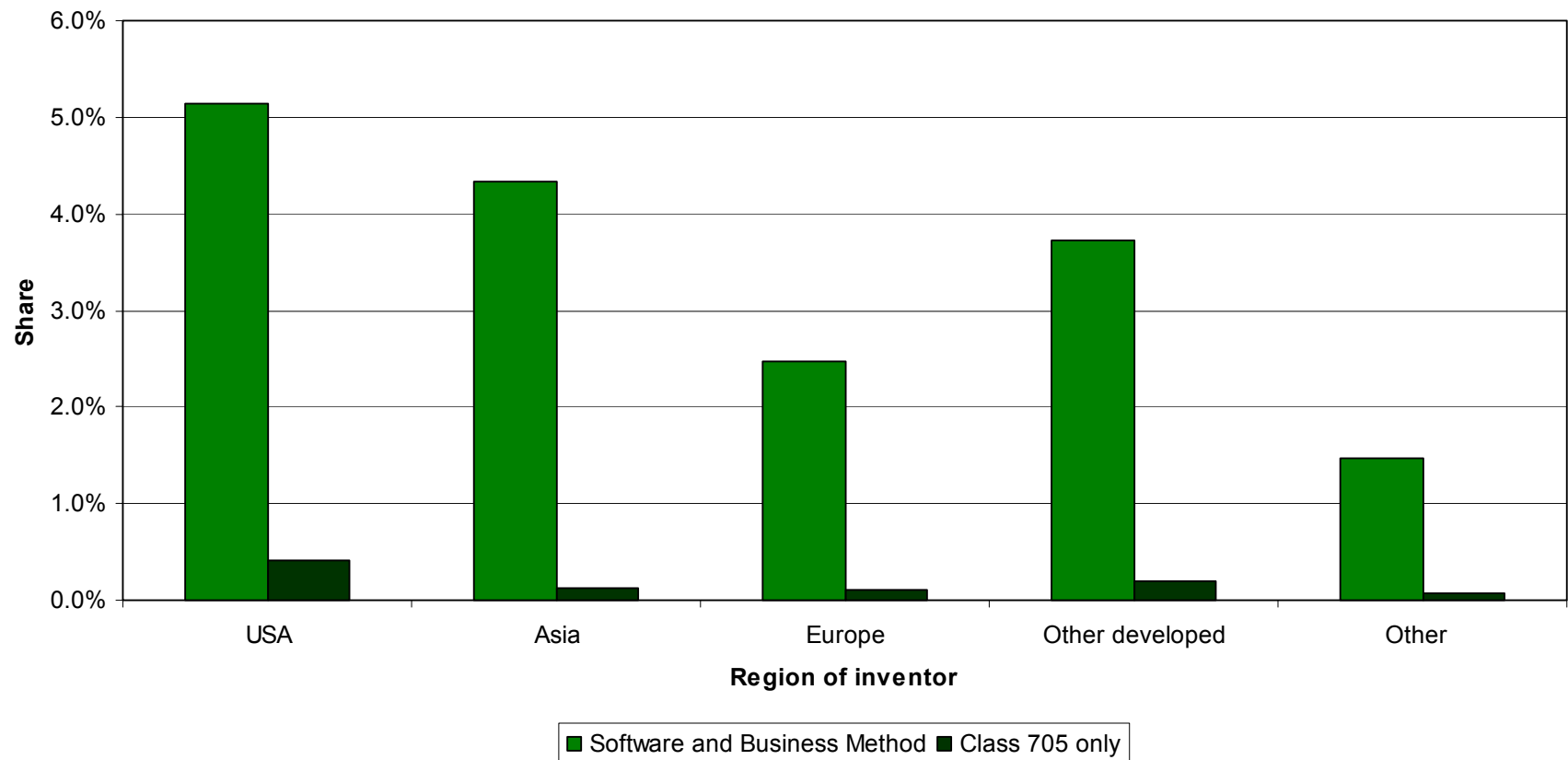


Critiques

- Recent increases in patent applications criticized by many for
 - Inappropriate subject matter
 - e.g., US vs Europe on business methods/software
 - Low quality or obviousness standard
 - Driven by strategic (defensive) purposes rather than “value creation”

Region of Origin

U.S. Patent Grants 1993-2002



Does the patent system increase innovative activity?

- 19th century cross-country evidence
 - Moser
 - Lerner (this conference)
- 20th century – survey evidence
 - Cohen et al/Levin et al for the US
 - Arundel for Europe
- 20th century – effects of changes to system
 - Hall & Ziedonis - semiconductors
 - Baldwin et al – Canada
 - Branstetter & Sakakibara – Japan
 - Bessen & Maskin – software
 - Arora et al – across sectors

Conclusions (1)

- Introducing or strengthening a patent system
 - does increase patenting and the strategic uses of patents
 - does *not* result in an increase in innovative activity broadly
- But
 - it redirects innovation toward things that are patentable and away from those protected by secrecy
 - it may increase innovation in pharmaceutical and biotechnology areas, and possibly specialty chemicals.

Conclusions (2)

- The existence and strength of the patent system *does* affect the organization of industry
 - allows trade in disembodied knowledge
 - facilitates the vertical disintegration of knowledge-based industries
 - enables the entry of new firms that possess only intangible assets

Patent quality

- High quality patents
 - Satisfy statutory requirements:
 - Novel
 - Non-obvious
 - Useful
 - Provide sufficient disclosure
 - Are valid with certainty (including certainty about scope)

Consequences of low quality

- Investment in innovation and commercialization slowed by uncertainty
- Some areas of research avoided by small and new firms (Lerner 1995)
- Slows advance in cumulative technologies (increases level of fragmentation of rights)
- Clogs the process in patent offices, especially as others increase patenting in response

Survey of U. S. policy recommendations

- Consensus (nearly) that the average quality of patents being issued during the past decade or so is too low, especially in the software and business method areas
- Some agreement on the reasons:
 - overburdened patent office
 - lack of expertise in the relevant areas
 - lack of prior art databases
 - weakening of the non-obviousness test, partly through court decisions

Survey of policy recommendations

- Raise standard of patentability and non-obviousness
 - Barton 2000, 2001, Bakels and Hugenholtz 2002, Dreyfuss 2001, Kasdan 1994, Lunney 2001, Meurer 2002, Quillen 2001
- Reinstate the business method exception?
 - Yes (Dreyfuss, Meurer, Bakels and Hugenholtz, and Thomas 1999)
 - No (AIPPLA, others)
- inter partes post grant re-examination system modeled on the European opposition system may raise quality
 - Janis 1997, Levin and Levin 2002, Graham et al 2003a,b, Merges, Wegner 2001, Mossinghoff 2003

Patent oppositions

- Graham, Hall, Harhoff, and Mowery (2003a,b) – comparison of the US re-exam and European opposition systems
- Description
- Determinants of take-up
- Preliminary welfare computations

USPTO re-examinations

- Ex parte proceeding
- Competitors discouraged from filing
 - Grounds limited to new prior art
 - Reduces ability to use prior art in litigation
- Rate is very low (less than one per cent)
- Cost: \$10-100K depending on complexity
- About one half of cases involve patentholder as requester
- Much higher probability for highly cited patents; lower for software

EPO Oppositions

- Inter partes
- Overall rate about 8%
- Cost: 13-22K\$
- Much higher for highly cited patents; lower for computers than for biotech/pharma
- Some evidence that they are more heavily used by German firms familiar with the system

Outcomes from Oppositions (EPO) and Re-examinations (USPTO)

| Outcome | Opposition | | Re-examination, excluding owner- requested | |
|----------------------------------|-----------------|----------------|--|---------------|
| | Total number | Total share | Total number | Total share |
| No change to patent | 5,590 | 22.4% | 476 | 25.9% |
| Patent amended | 6,466 | 33.0% | 1,151 | 62.7% |
| Patent revoked | 6,655 | 35.1% | 209 | 11.4% |
| Closed/no outcome | 1,753 | 9.6% | 0 | 0.0% |
| Total with an outcome | 20,464 | 100.0% | 1,836 | 100.0% |