Business Method Patents, Innovation, and Policy

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Outline

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

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

- 6015947 (Jan 00, class 84)
  - method of teaching music by first teaching rote understanding of musical notes and progressing to a structural understanding of notes on a musical staff – after learning small portions of a scale, the student learns other small sections of the scale until all notes on the musical scale have been learned.
- 6257248 (Jun 02, class 132)
  - method for cutting hair with scissors and/or other implements in both hands
- 5491779 (Feb 96, class 395)
  - three dimensional presentation of multiple datasets in unitary format with pie charts

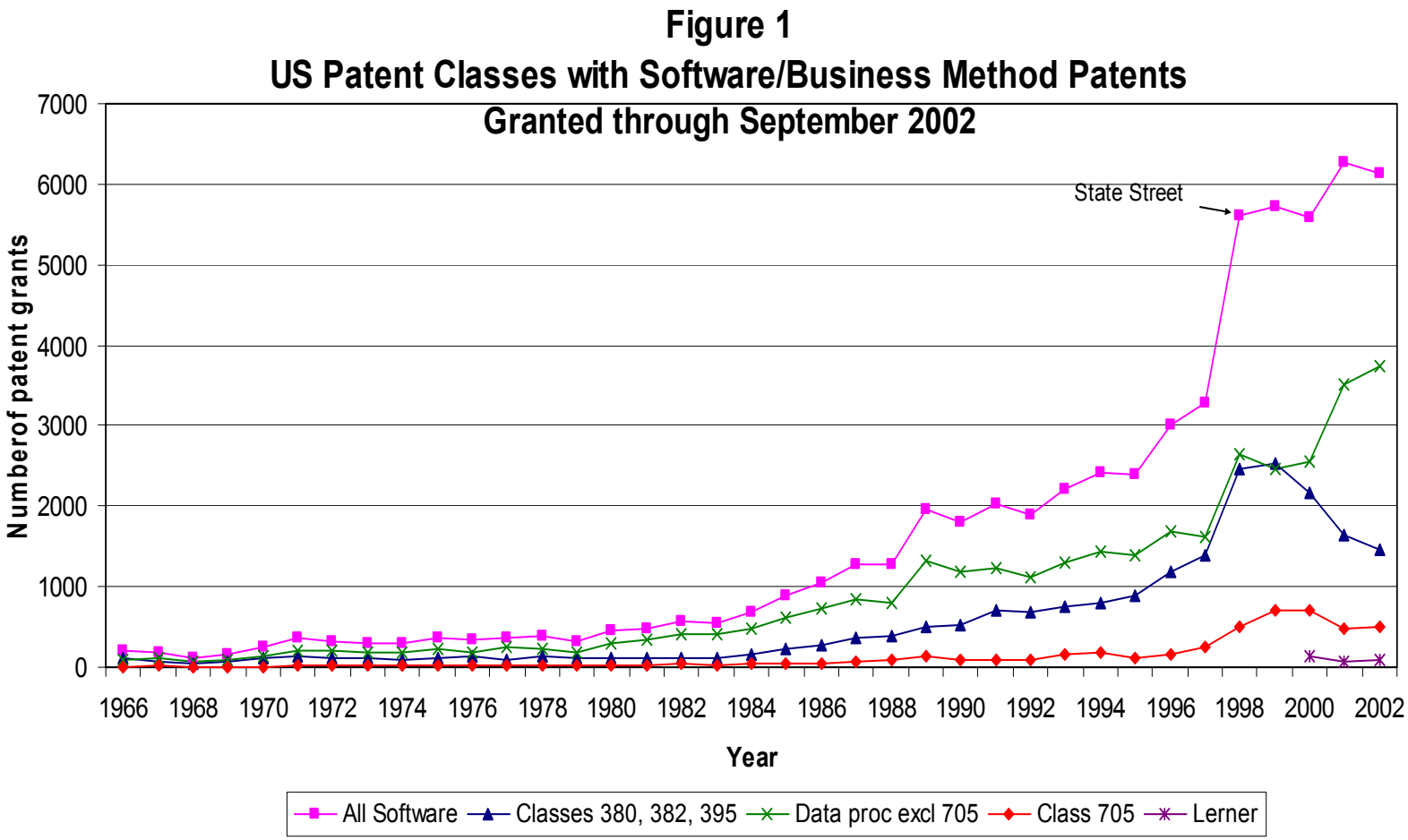
Some examples

- 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
    - Relevant subclasses (Lerner):
      - 705/35: Finance
      - 705/36: Portfolio selection, planning or analysis.
      - 705/37: Trading, matching or bidding.
      - 705/38: Credit (risk) processing or loan processing.
      - 705/4: Insurance (some only).

Trends in software patenting



Patents and innovation

- A patent creates a property right over intangible knowledge assets – the right to exclude others from using the assets
  - well known tradeoff between incentives and monopoly power
    - non-rival nature of knowledge asset implies there is a social cost to granting the property right, because more than one firm can use knowledge simultaneously
  - less well-known: more complex issues due to
    - strategic use of patents and patent litigation
    - cumulative and overlapping innovation

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

Does the patent system increase innovative activity?

- 19th century evidence
  - Moser looks at invention across countries
    - no effect on overall innovation, but change in focus (away from innovation that can be protected with trade secrecy
  - Lerner looks at patenting across countries
    - finds increase in patenting by foreigners in response to domestic country patent law change
    - no increase by firms within the country or in Great Britain (that is, no increase in innovation per se)

Does the patent system increase innovative activity?

- 20th century
  - Cohen et al/Levin et al – patents not important for securing returns to innovation (except in pharmaceuticals).
  - Hall & Ziedonis – CAFC, etc (1982) caused increased patenting in semiconductor industry, due to litigation fears and needs for patent portfolios for cross-licensing
  - Baldwin et al – Canadian innovation survey. Innovation causes patenting, but patenting does not seem to increase innovation.

Does the patent system increase innovative activity?

- Park and Ginarte – 60 countries, 1960-90. Strength of IPR (including whether pharmaceuticals covered) positive for R&D in developed countries.
- Branstetter & Sakakibara – increasing patent scope in Japan (1988) did not increase R&D
- Bessen & Maskin – software industry developed without strong patent rights (although recent changes in software and internet industry may reflect the rise of patents)
- Arora et al – increasing the "patent premium" does not increase R&D except in pharma/biotech.

Conclusions

- Introducing or strengthening a patent system (lengthening the term, broadening subject matter coverage, improving enforcement) does increase patenting and the strategic uses of patents.
- Changes do not generally result in an increase in innovative activity, but
  - they redirect innovation toward things that are patentable and away from those protected by secrecy
  - there may be an increase centered in the pharmaceutical and biotechnology areas, and possibly specialty chemicals.

Conclusions

- 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 at the USPTO, especially as others increase patenting in response

Survey of 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 (AIPLA, 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)

	Opposition		Re-examination, excluding owner-requested	
Outcome	**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%**