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

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

- All Software
- Classes 380, 382, 395
- Data proc excl 705
- Class 705

State Street
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


Region of inventor

USA | Asia | Europe | Other developed | Other
--- | --- | --- | --- | ---
Share

- USA: 5.0%
- Asia: 4.0%
- Europe: 3.0%
- Other developed: 2.0%
- Other: 1.0%

Legend:
- Software and Business Method
- Class 705 only
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

- 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
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)

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Opposition</th>
<th>Re-examination, excluding owner-requested</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total number</td>
<td>Total share</td>
</tr>
<tr>
<td>No change to patent</td>
<td>5,590</td>
<td>22.4%</td>
</tr>
<tr>
<td>Patent amended</td>
<td>6,466</td>
<td>33.0%</td>
</tr>
<tr>
<td>Patent revoked</td>
<td>6,655</td>
<td>35.1%</td>
</tr>
<tr>
<td>Closed/no outcome</td>
<td>1,753</td>
<td>9.6%</td>
</tr>
<tr>
<td><strong>Total with an outcome</strong></td>
<td><strong>20,464</strong></td>
<td><strong>100.0%</strong></td>
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