

# Prospects for Improving U.S. Patent Quality via Post-grant Review

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# Rogan on the USPTO

“This is an agency in crisis, and it's going to get worse if we don't change our dynamic. It doesn't do me any good to pretend there's not a problem when there is.”

*James E. Rogan, appointed director of the USPTO in December 2001, as quoted in the Los Angeles Times, February 7, 2003.*

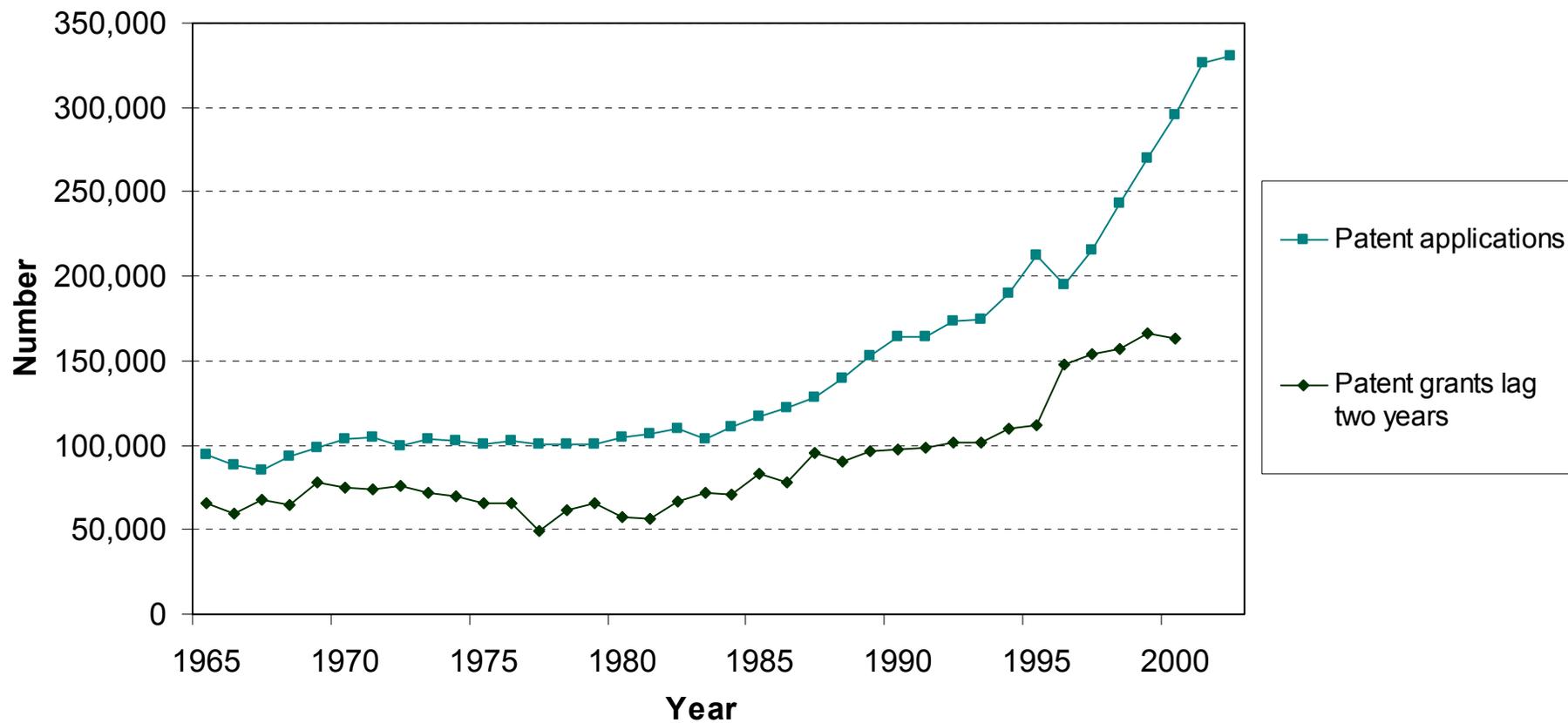
# Outline

- ◆ What's the problem?
- ◆ Why should we care about patent quality?
- ◆ Review policy recommendations
- ◆ Comparing U.S. and European post-grant review
- ◆ Some suggestive welfare computations

# The problem

- ◆ Surge in U.S. patenting since 1985 due to
  - Early 1980s administrative, judicial, and legislative actions strengthening economic value
  - Increased strategic importance in some industries
  - Expansion of subject matter (genomic, software, business methods)

**Figure 1**  
**USPTO Utility Patents 1965-2002**



# The consequences

- ◆ Large increase in patent office workload
  - Rising pendency rate
  - Indications that patents issue with incomplete search of prior art (especially non-patent)
- ◆ Increase in litigation:
  - 1978-84: 19 suits per 1000 patents
  - 1991-95: 21 suits per 1000 patents
  - Late 1990s: 32 suits per 1000 patents

# Concerns over patent quality

## ◆ Legal scholars:

- John Kasdan 1994,1999; Mark Janis 1997
- Robert Merges 1999; John Barton 2000
- Rochelle Dreyfuss, William Kingston, Greg Lunney, Cecil Quillen 2001
- Michael Meurer 2002

## ◆ A judge - Harold Wegner 2001

## ◆ A former PTO Commissioner – Gerald Mossinghoff

## ◆ And even economists:

- Richard and Jonathan Levin 2002
- Robert Hunt 2001

# 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 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
- ◆ Reinststate 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 1999, Wegner 2001, Mossinghoff 2003

# Patent oppositions

“Patent Quality Control: A Comparison of U.S. Patent Reexaminations and European Patent Oppositions”

*Graham, Hall, Harhoff, and Mowery (2003)*

- More detailed description
- Determinants of take-up
- Comparison of process length
- Outcomes

# Institutional similarities: US and EU

## ◆ Requirements for Utility Patent: US

- Available for “processes, machines, manufactures, or compositions of matter”
  - ◆ Novel
  - ◆ Useful
  - ◆ Non-obvious

## ◆ Requirements for Utility Patent: EU

- Patents have been available from the European Patent Office (EPO) since 1977
  - ◆ Novel
  - ◆ Industrial Application
  - ◆ Inventive Step

# Institutional Differences: US and EU

## ◆ United States patent challenges

- Reexamination post-issue (during the life of the patent)
- Litigation for validity or infringement

## ◆ EU (EPO) patent challenges

- Opposition post-issue (within 9 mos.)
- Litigation for validity or infringement *in national courts*

# 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
- ◆ 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\$
- ◆ Can be continued by EPO even if parties settle
- ◆ Much higher probability for highly cited patents;  
lower for computers than for biotech/pharma
- ◆ About the same for independent inventors
- ◆ Some evidence that they are more heavily used  
by German firms familiar with the system  
(strategic use?)

# 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%        |
| <b>Patent revoked</b> | <b>6,655</b> | <b>35.1%</b> | <b>209</b>                                | <b>11.4%</b> |
| Closed/no outcome     | 1,753        | 9.6%         | 0   | 0.0%         |
| Total with an outcome | 20,464       | 100.0%       | 1,836                                     | 100.0%       |

Source: Graham, Hall, Harhoff, and Mowery 2003.

All oppositions and re-exams filed 1980-1998.

# Welfare computation

Introduction of true *inter partes* post-grant patent review in US implies

- Increased cost from higher take-up
- Benefit from avoided litigation
  - ◆ Rejection means higher validity probability
  - ◆ Patent revocation
    - Avoided litigation or collusive settlement cost of \$2M
  - ◆ Patent amendment
    - Lesser avoided litigation or settlement cost

# Range of scenarios

## ◆ Benefit-cost ratio = 10

- Opposition costs \$100K; outcome probabilities same as EPO;
- avoided cost is \$2M for revocation; \$300K for amendment

## ◆ Benefit-cost ratio = 0.3

- Opposition costs \$500K; outcome probabilities same as re-exam;
- avoided cost is \$2M for revocation; nothing for amendment;
- additional cost of \$200K if opposition rejected

# History of U.S. patent reform efforts

| Reform Proposal   | Committee on the Relation of the Patent System to the Stimulation of New Industries (1936) | National Patent Planning Commission (1943) | President's Commission on the Patent System (1967) | Advisory Commission on Patent Law Reform (1992) |
|---|--|--|--|---|
| reform of obviousness standard; presumption of validity | recommended  | recommended                                |  |   |
| opposition/revocation                                   |  | considered & rejected                      | recommended ex parte pre- and post-grant           | recommended reform                              |
| Pre-grant publication                                   | recommended  | not considered                             | recommended  | recommended                                     |
| Single appellate patent court                           | recommended  | recommended                                |  | n/a   |
| patent trial courts                                     | recommended the use of technical advisors  |  | recommended the use of "Civil Commissioners"       | recommended                                     |
| compulsory licensing                                    | considered & rejected  | considered w/o recommendation              |  |   |
| 20-year term  |  | recommended                                | recommended  | recommended                                     |
| first-to-file   |  |  | recommended  | recommended                                     |

*Source:* Mark Janis (2001), "Patent Abolitionism," U of Iowa Law School