AXINN

Incentivizing Innovation

Reconciling Antitrust and IP

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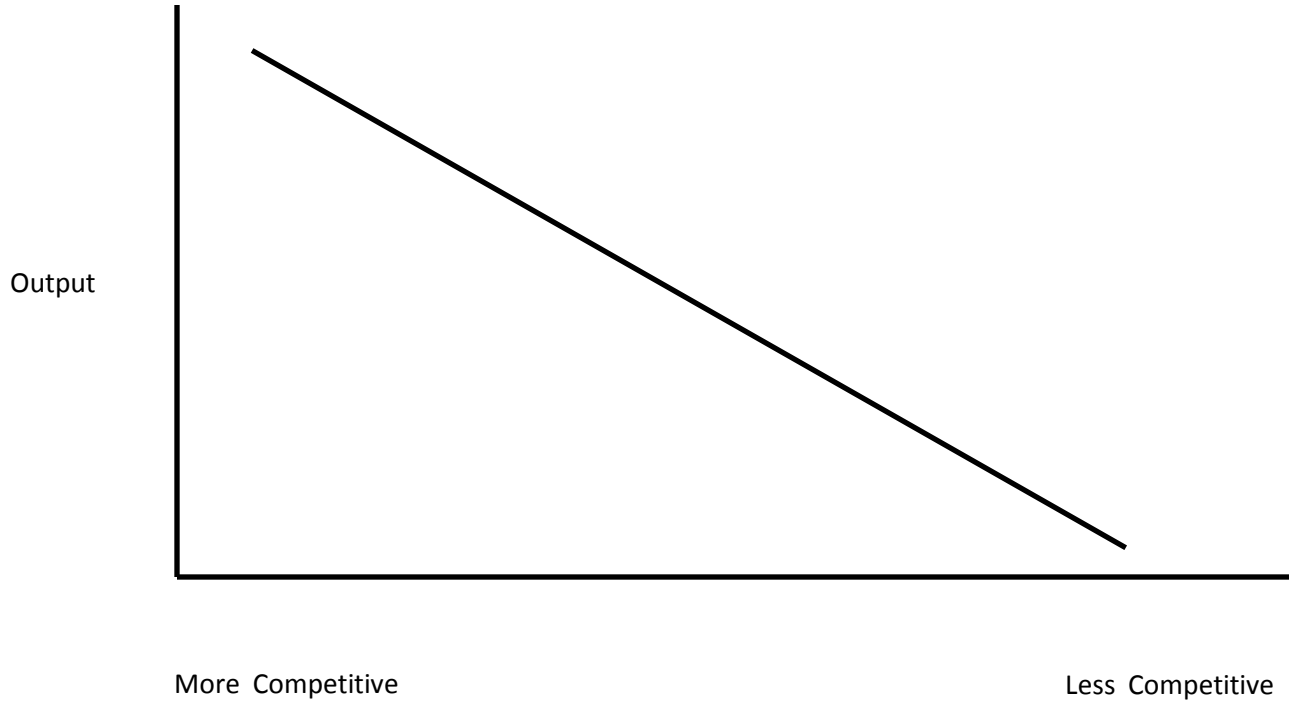
Goals of Antitrust and Intellectual Property Not in Conflict

- Both Seek to Improve Output and Consumer Welfare

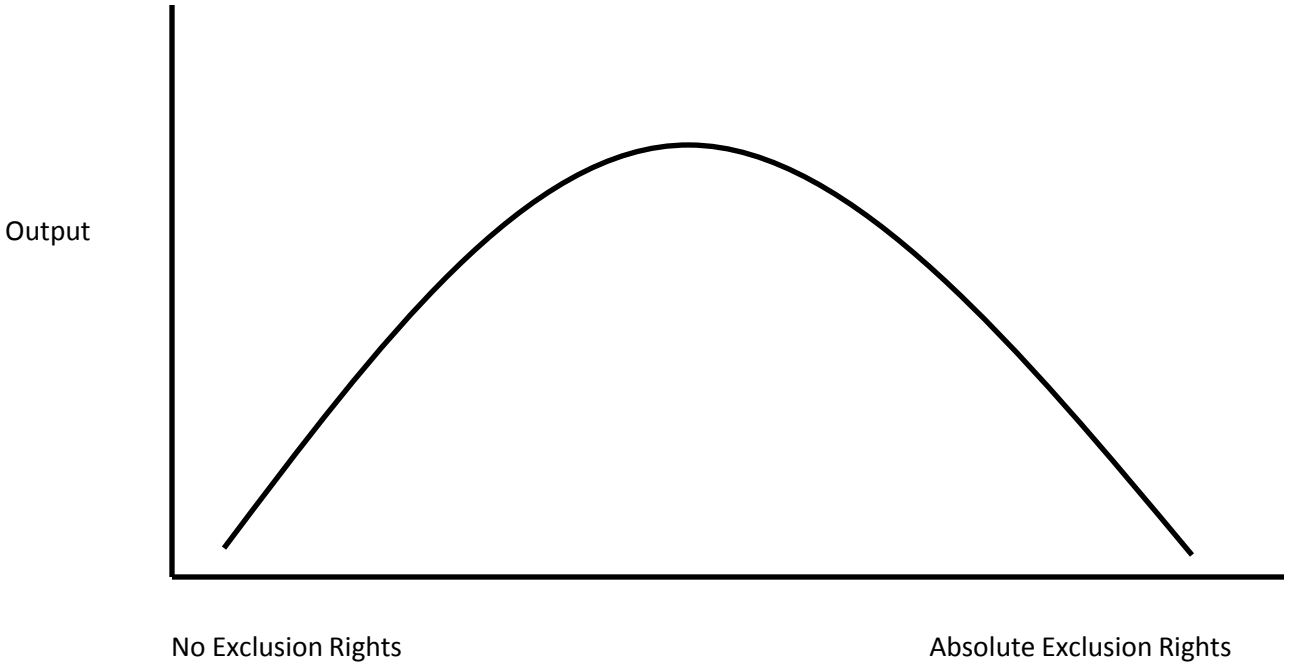
- But Use Different Tools to Accomplish Goals
  - Antitrust maximizes output by increasing competition
  - IP maximizes output by limiting competition somewhat

- IP Policy More Difficult than Antitrust
  - Too much and too little competition both reduce output
  - Must know shape of curve and where you are on it

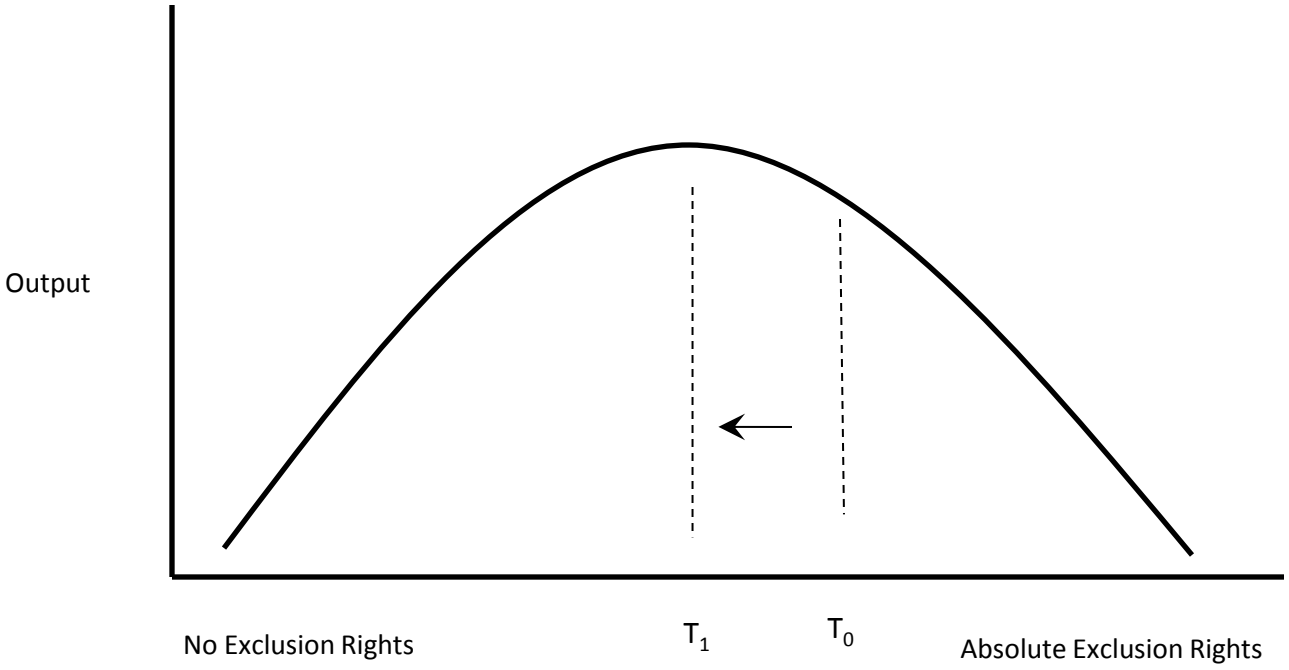
Relationship Between Competition and Output is Typically Straightforward



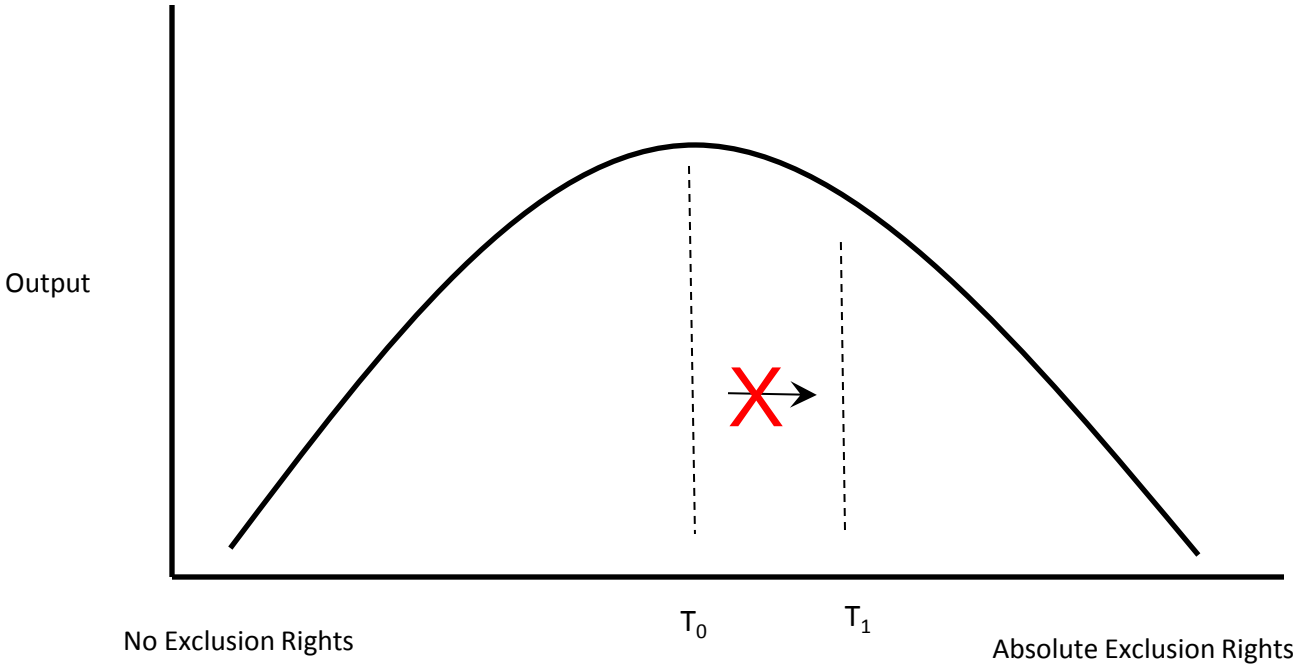
Relationship Between Competition and Output is More Complex in Markets with Positive Externalities



Reducing Exclusion Rights May Increase Output If Status Quo Offers Too Much Protection



Changing Exclusion Rights May Decrease Output If Status Quo Offers Optimal Protection



Knowing Shape/Location on Curve is Essential for Public Policy

- Only Way to Know Appropriate Direction to Move
  - Depending on location, decreasing IP protection can improve or reduce output/welfare

- Evidence of R&D Investment Gives Insight on Shape
  - High investment shifts curve to right (exclusion)
  - Low investment shifts curve to left (competition)

- Natural Experiments Give Insight on Location
  - If increasing protection reduces output, likely over protecting, go no further, consider reversal
  - If reducing protection reduces output, likely under protecting, go no further, consider reversal

Design Patents

How Much Exclusion is Necessary to Incentivize Creation of Beauty?

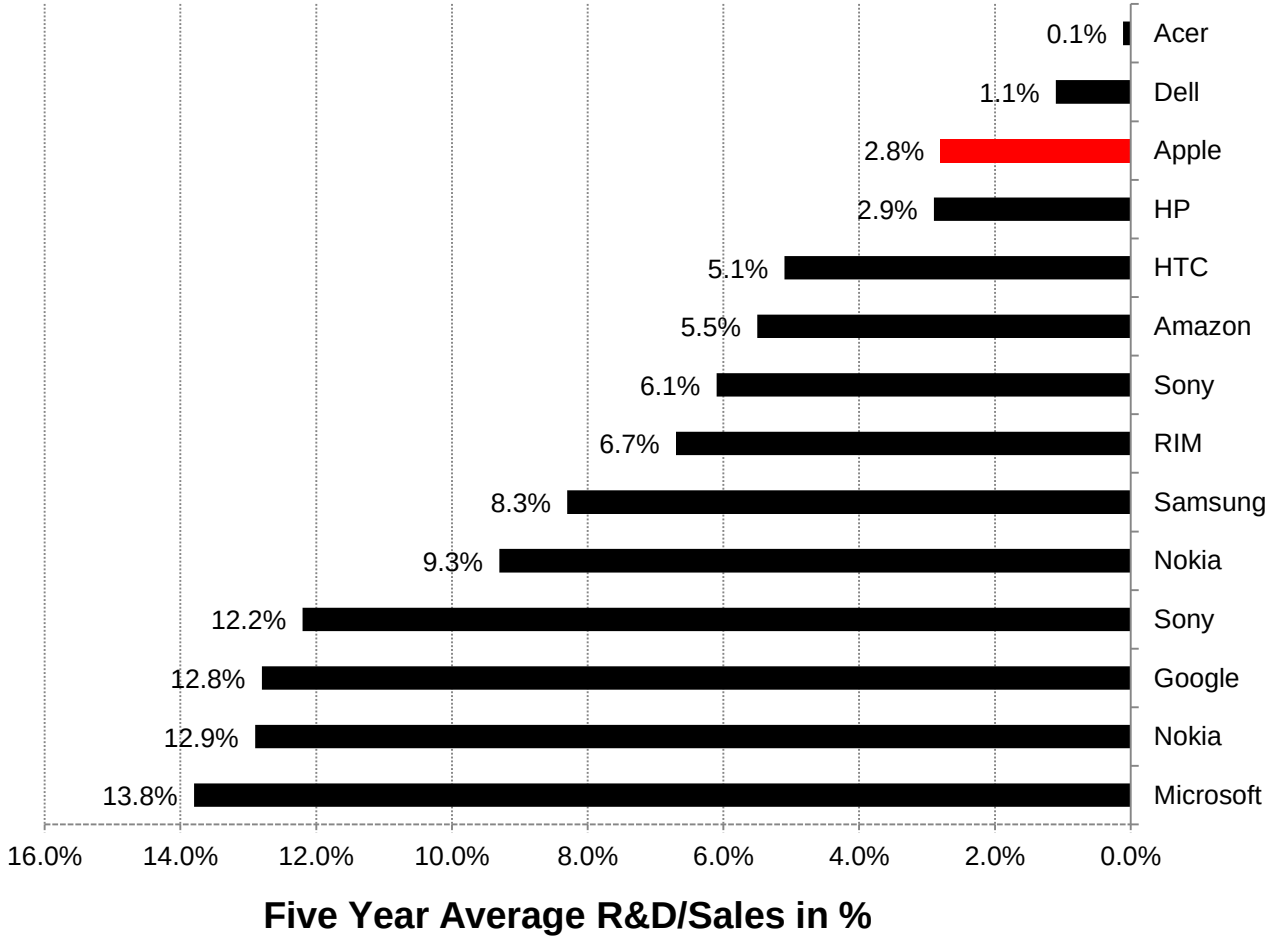
Considering Shape of and Location on Curve

- Design has Low Research and Development Costs
  - No functional component by definition
  - Recognized in shorter patent life
  - Beauty is rare but not a function of expenditures

- Natural Experiments Suggest Overprotection
  - Innovation without IP protection
  - Protection correlated with reduced R&D

“Innovation has nothing to do with how many R&D dollars you have.”

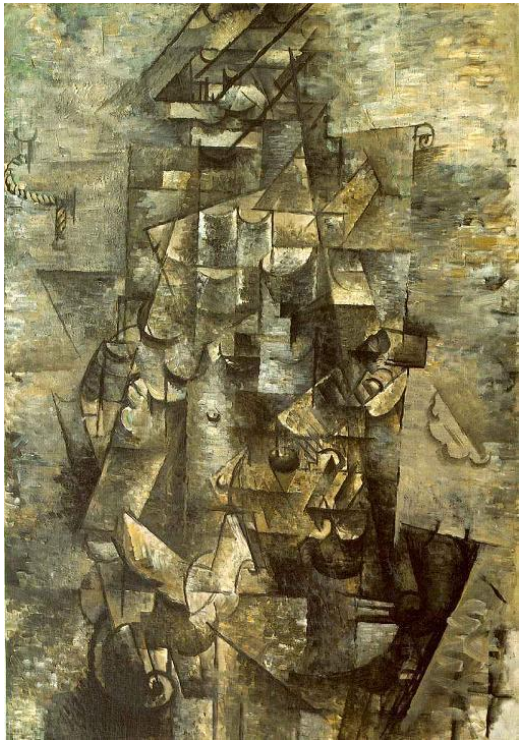
Steven Jobs



Source: http://www.asymco.com/2012/01/30/you-cannot-buy-innovation/

Copying is Common in Art

Pablo Picasso, Ma Jolie, 1911



Braque, Man with a Guitar, 1911

And Fashion

LANVIN
PARIS

Dior

And Industrial Design

Apple CALC App
(2007)

Braun ET 44
(1977)

Braun T-3
Pocket
Radio (1958)

Apple Ipod
(2001)

Braun LE1
Speaker
(1959)

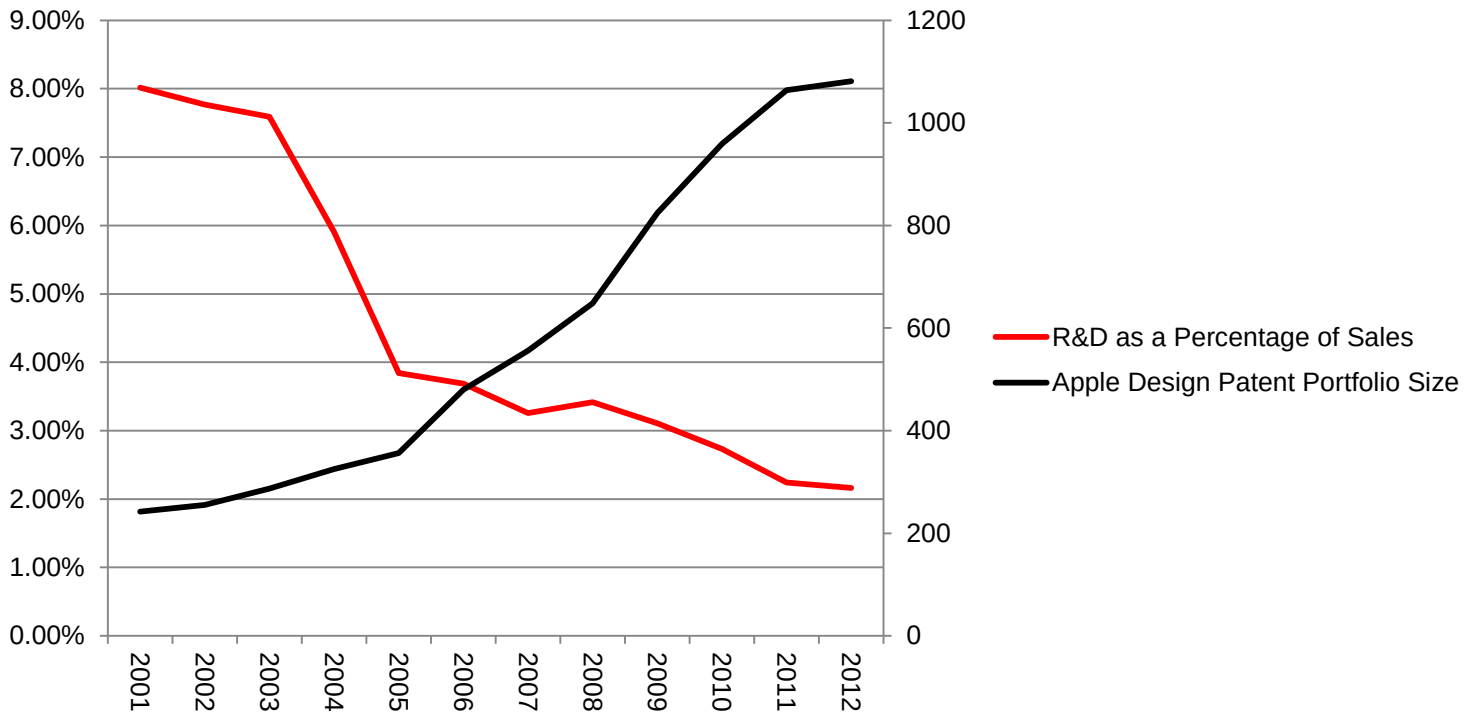
Apple iMac
(2007)

“We have always been shameless about stealing great ideas”

Steven Jobs

Source: 1996 PBS television special “Triumph of the Nerds: The Rise of Accidental Empires.”

What is Relationship Between Size of Design Patent Portfolio and Investment?



Source: http://www.uspto.gov/web/offices/ac/ido/oeip/taf/design.pdf

Software Patents

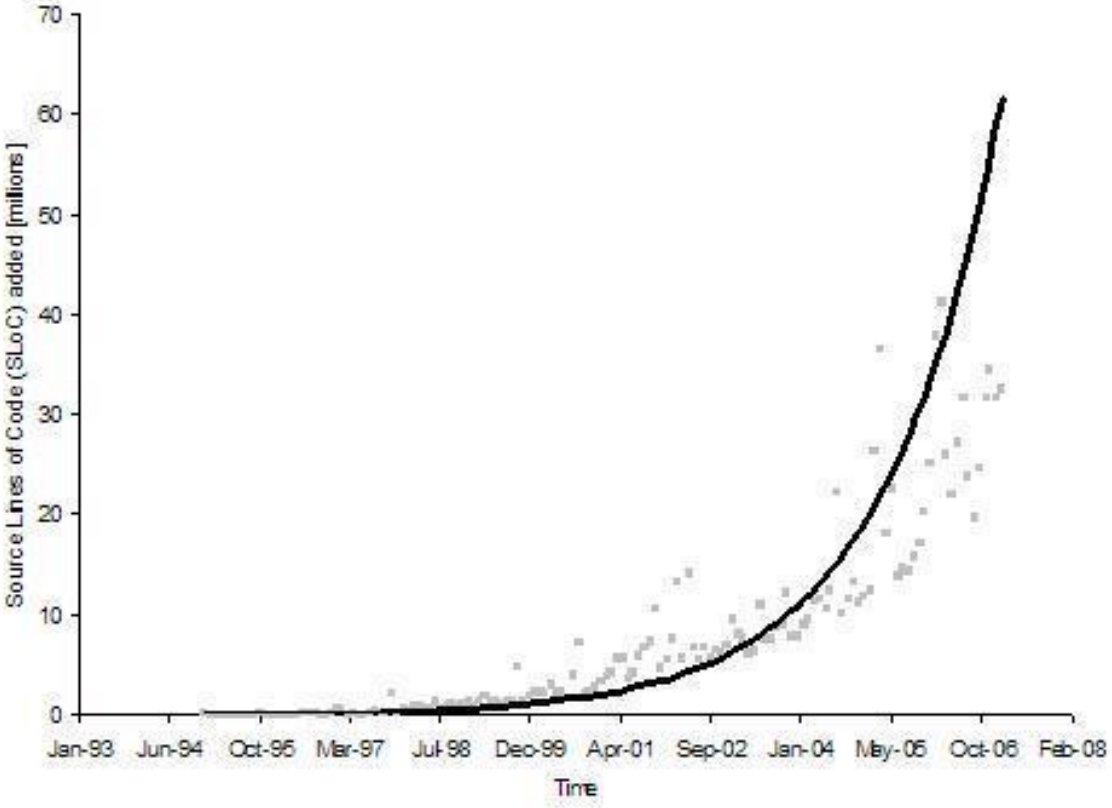
Do we Need Patents to Incentivize Software Innovation?

Economics Literature

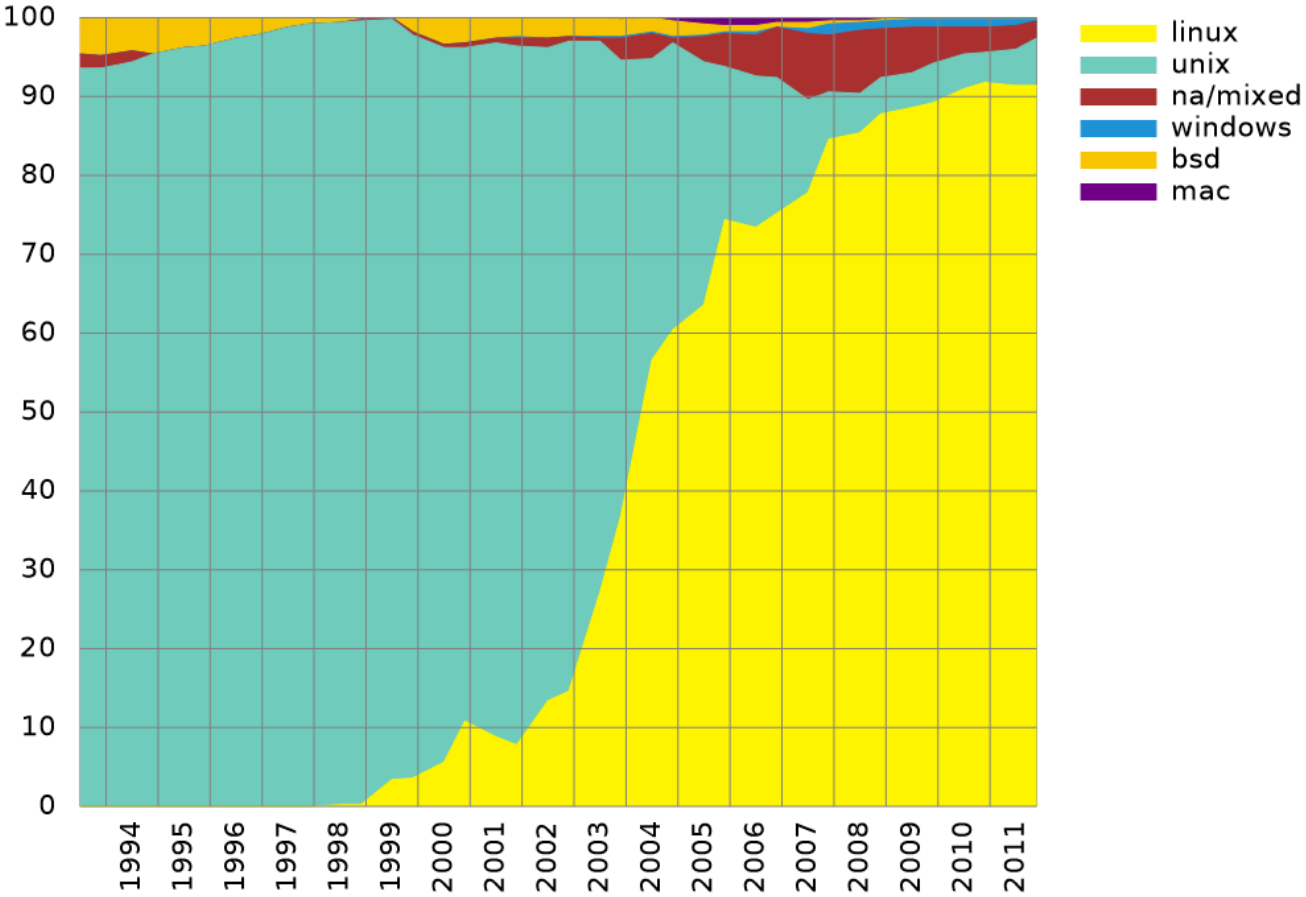
- "For industries like software or computers, theory suggests that imitation may promote innovation and that strong patents (long-lived patents of broad scope) might actually inhibit it."[1]
- "Level of investment in the application is larger when the operating system is open source rather than proprietary."[2]
- "[A]ll else equal, increases in software patent share were associated with decreases in research intensity."[3]

1. Eric Maskin and James Bresson, RAND Journal of Economics (2009)
2. Nicholas Economides and Evangelos Katsamakas, The Economics of Open Source Development (2006)
3. Bessen and Hunt, The Software Patent Experiment (2004)

Test Case: Open Source Code Growth



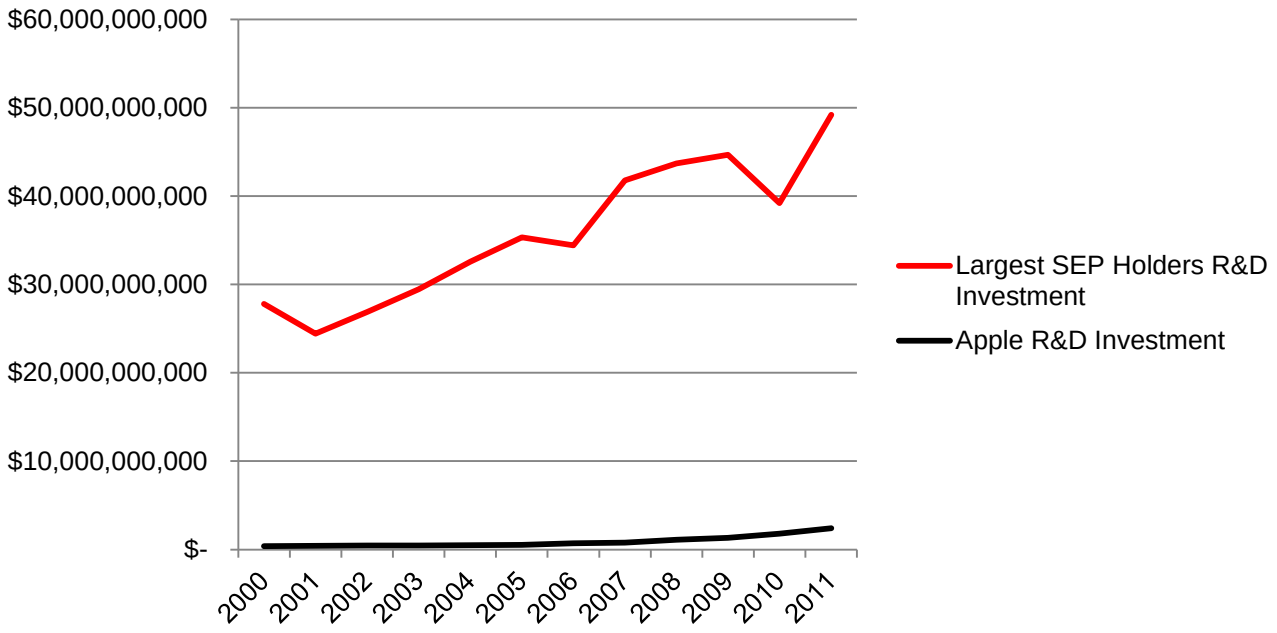
Linux Powering 90%+ of Supercomputers



Air Interface SEPs

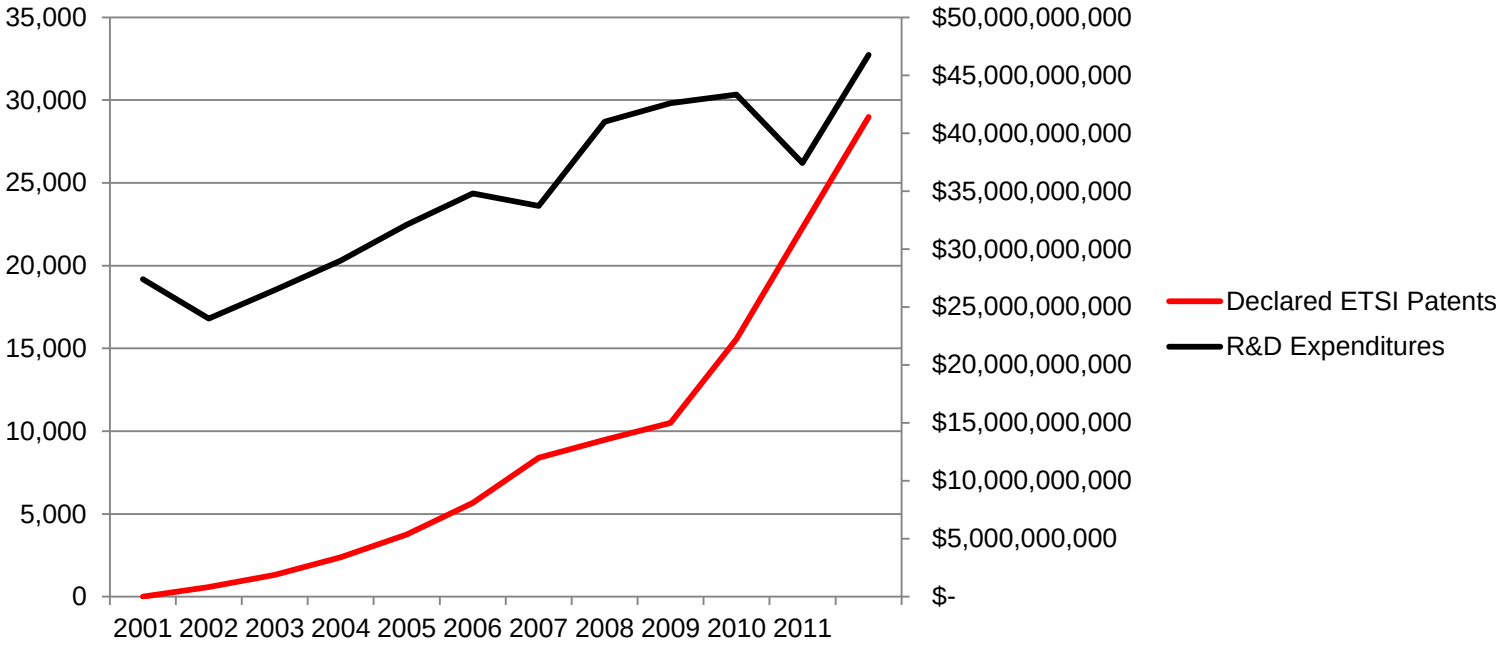
Do We Need Patents to Incentivize Investment?

R&D Investment:
12 Largest Holders of ETSI SEPs* vs. Apple



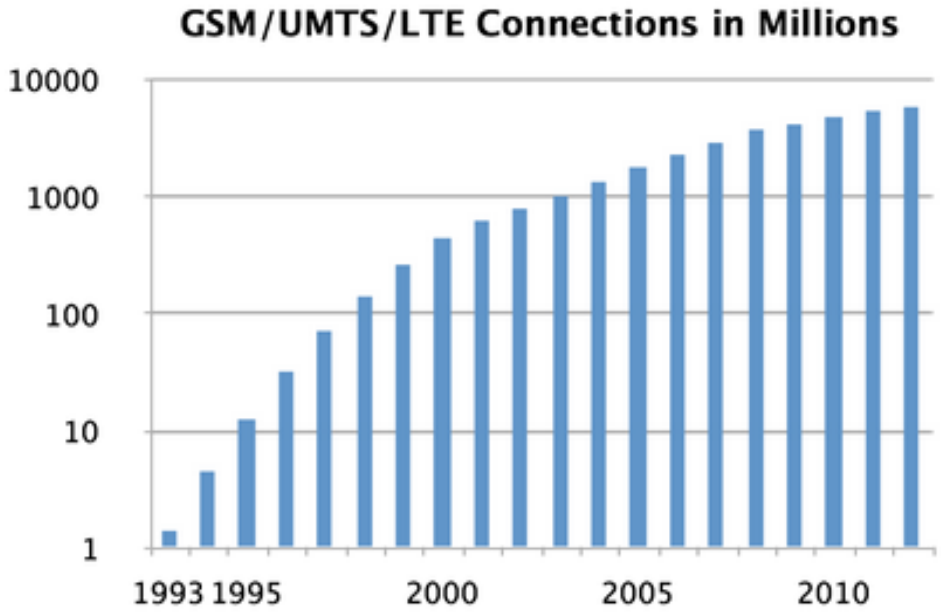
* Ericsson, Huawei, InterDigital, LG, Motorola, NEC, Nokia, NTT, Panasonic, Qualcomm, Samsung, Siemens

Relationship Between R&D and Declaration of SEPs by 12 Largest Owners of SEPs*



* Ericsson, Huawei, InterDigital, LG, Motorola, NEC, Nokia, NTT, Panasonic, Qualcomm, Samsung, Siemens

Did The System Adequately Incentivize Innovation and Adoption?



Why Banning Injunctions Might Lead to Sub-FRAND Rates

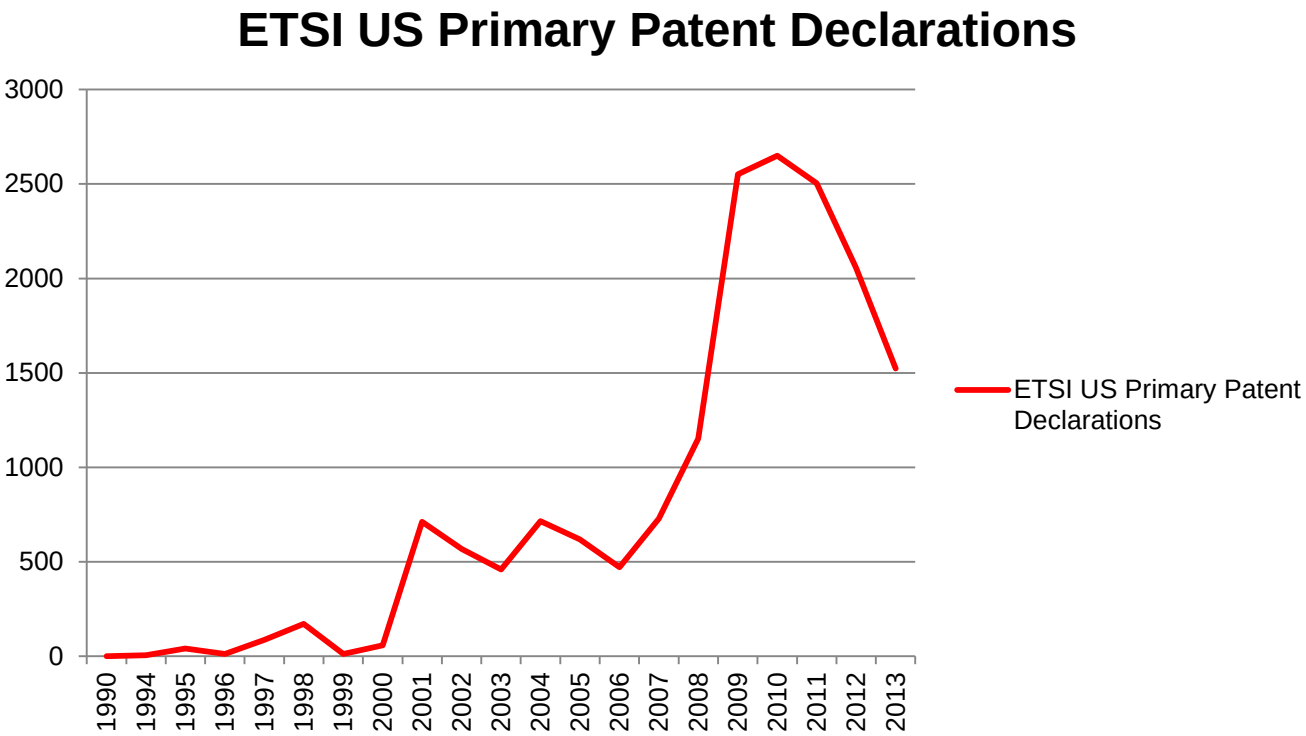
Jurisdiction	Distinct Declared Patents	Estimated Suits	Estimated Litigation Costs
United States	1,188	119	$ 654,500,000
China	1,081	109	$ 599,500,000
Republic of Korea	996	100	$ 550,000,000
Japan	741	75	$ 412,500,000
Australia	346	35	$ 192,500,000
Germany	297	30	$ 165,000,000
Canada	256	26	$ 143,000,000
Russia	227	23	$ 126,500,000
Brazil	130	13	$ 71,500,000
Austria	64	7	$ 38,500,000
(Others)	378	57	$ 313,500,000
Total	**5,704**	**594**	**$ 3,267,000,000**

Marketplace Guidance that Intervention Reduced Value of SEPs

- **“Enforcing SEPs is problematic in China: injunctions may not be possible; royalties are lower than normal.**
- **Patenting standards are no longer a brilliant idea. Contrary to the traditional notion, standard essential patents now seem to have limited value.**
- **Implementation patents are much more valuable than standard essential patents.”**

http://www.china-iprhelpdesk.eu/docs/publications/China_HD_Guide-China_IPR_Considerations_for_the_ICT_business.pdf at 5-6.

Looking at the Impact of Rule Changes



Conclusion

Public Policy Implications

It’s All Connected

- Smartphone Wars Involve at Least 3 Patent Types
  - Design patents
  - Utility software patents
  - Utility air interface patents

- Each Patent Type has Different Curve
  - Different shape
  - Different location

- Increasing Power of One Type Reduces Power of Other
  - Voluntary cross-license
  - Litigation cross-claims

Public Policy Implications

- Design Patents
  - Did increased protection reduce output?
  - Suggests we were overprotecting
  - And we protected even more

- Software Patents
  - Lots of innovation without protection
  - Suggests we are overprotecting
  - And we protected even more (enabling trolls)

- Air Interface SEPs
  - Any evidence we were over/under protecting?
  - Any movement will reduce output