



Social Contingent Liabilities and Synthetic Derivative Options

Benefits and Costs of the Global Patent Paradigm

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Best(?) Laid Plans...

- **Stevenson-Wydler Technology Innovation Act of 1980**
 - It is the continuing responsibility of the Federal Government to ensure the full use of the results of the Nation's Federal investment in research and development. ... **including plans for securing intellectual property rights in laboratory innovations with commercial promise and plans for managing such innovations so as to benefit the competitiveness of United States industry.**
- **Small Business Innovation Development Act of 1982**
 - Federal research and development as a base for technological innovation to meet agency needs and to contribute to the growth and strength of the Nation's economy
- **Executive Order 12591 – April 10, 1987**
 - Identify areas of research and technology of potential importance to long- term national economic competitiveness
- **European Commission Enterprise Policy - Lisbon, 2000**
 - Protection of intellectual property is another *sine qua non* for innovation. Without adequate protection of inventions and creations, there is no motivation to invest in them. Furthermore, their use as an asset by their authors may be hampered.



R&D = Patents?

- Over 75% of ALL Federal and Corporate R&D in the U.S. goes to:

- Computer/Electronic Products
- Chemicals*
- Computer-related Services
- Aerospace*
- Automotive

Source: 2006 NSF Division of Science Resources Statistics

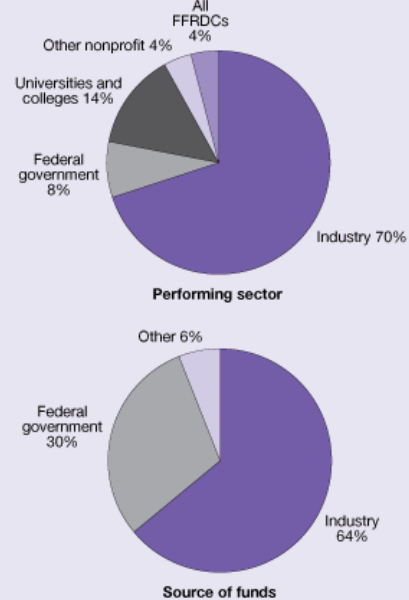
TOP 20 USPTO Patent Recipients - 2005

International Business Machines Corporation
Canon Kabushiki Kaisha
Hewlett-Packard Development Company, L.P. (a)
Matsushita Electric Industrial Co., Ltd.
Samsung Electronics Co., Ltd.
Micron Technology, Inc.
Intel Corporation
Hitachi, Ltd
Toshiba Corporation
Fujitsu Limited
Sony Corporation
General Electric Company
Seiko Epson Corporation
Infineon Technologies AG
Koninklijke Philips Electronics N.V.
Robert Bosch GmbH
Fuji Photo Film Co., Ltd
Microsoft Corporation
Texas Instruments, Incorporated
Honda Giken Kogyo K.K. (Honda Motor Co., Ltd.)

Upstream Incentives, or...

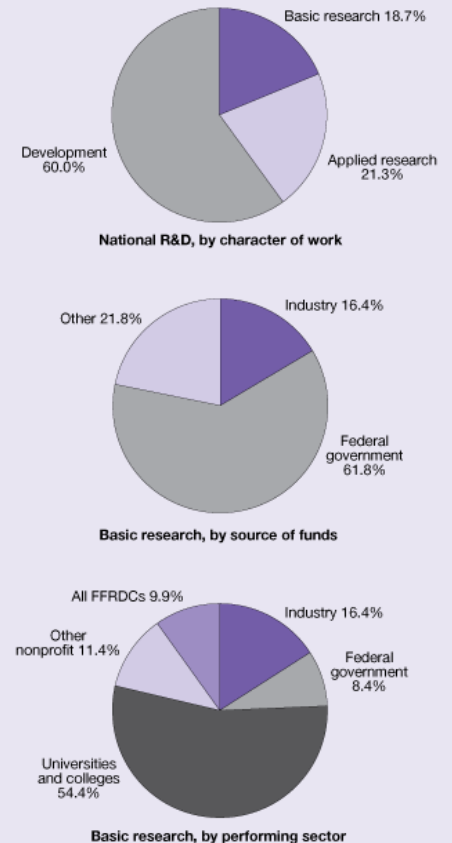
- Fundamental Assumptions Untested
 - Are all patents equal?
 - Are all industries equal?
 - ≠ Uniform mode unsubstantiated
- Patents ≠ R&D ≠ Funding
- All value is additive and positive?
 - ***What happens when a patent slows the rate of market loss rather than adding market value?***

Figure 4-2
Shares of national R&D expenditures, by performing sector and source of funds: 2004



FFRDC = federally funded research and development center
 NOTES: Values rounded to nearest whole number. National R&D expenditures estimated at \$312 billion in 2004.
 SOURCE: National Science Foundation, Division of Science Resources Statistics, *National Patterns of R&D Resources* (annual series). See appendix tables 4-3 and 4-5.
 Science and Engineering Indicators 2006

Figure 4-4
National R&D by character of work, basic research by source of funds, and basic research by performing sector: 2004

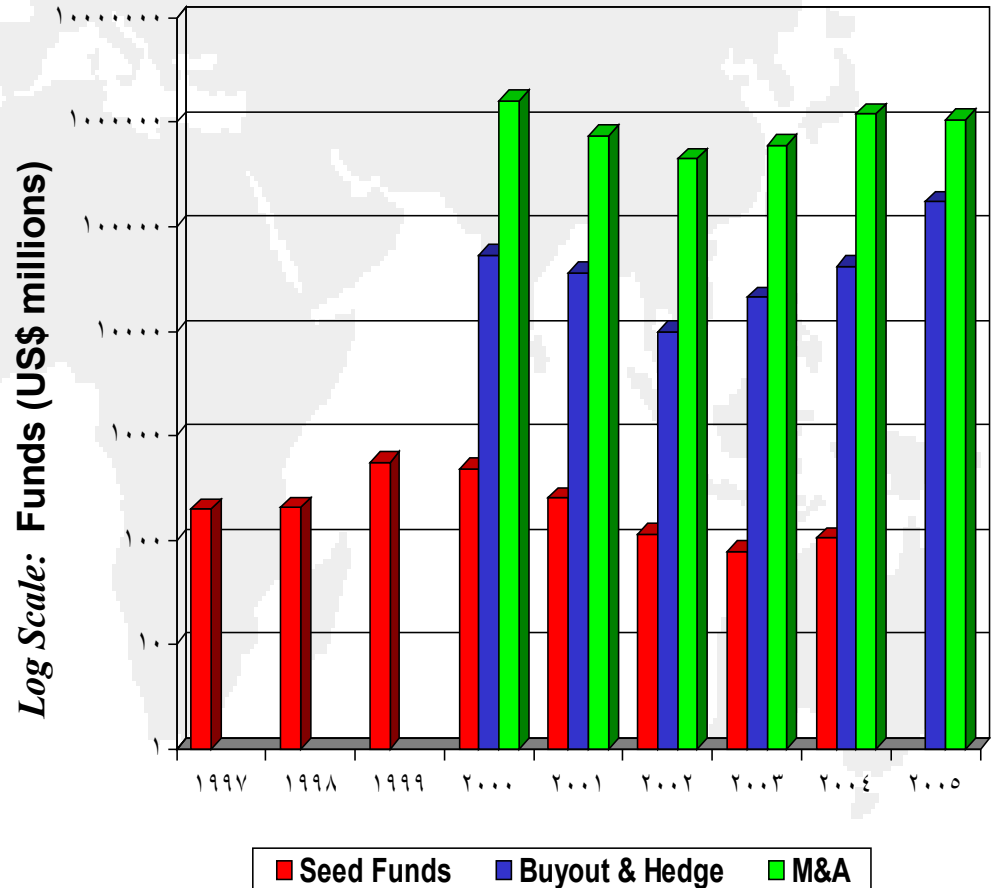


FFRDC = federally funded research and development center
 NOTES: Figures rounded to nearest whole number. National R&D expenditures estimated at \$313 billion in 2004.
 SOURCE: National Science Foundation, Division of Science Resources Statistics, *National Patterns of R&D Resources* (annual series). See appendix tables 4-3, 4-7, 4-11, and 4-15.
 Science and Engineering Indicators 2006



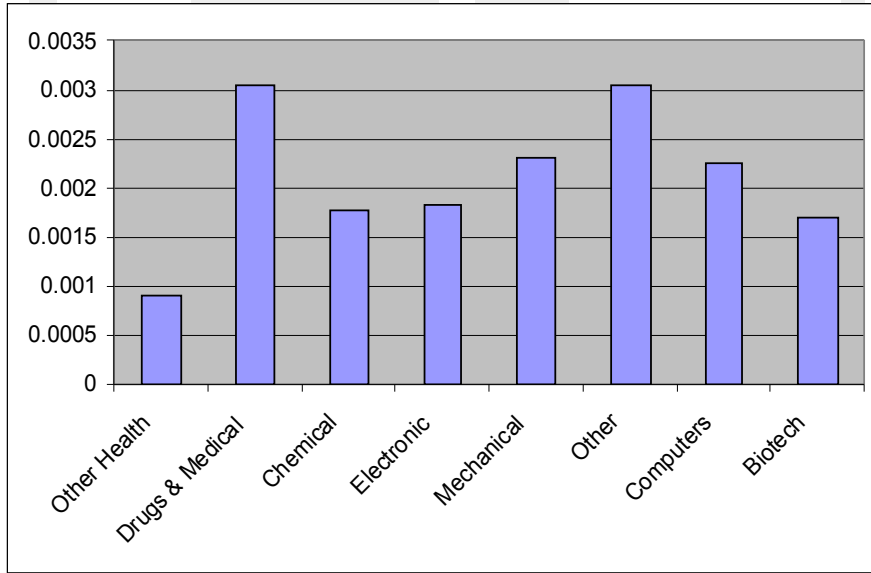
Downstream Effects

- **Market trends**
 - US\$1.98 billion in seed capital
 - US\$8 trillion in M&A and Hedge
- **Acquisition exits**
 - Private equity premiums paid for technology >40%
 - IP “widows & orphans” over 50% in preliminary studies

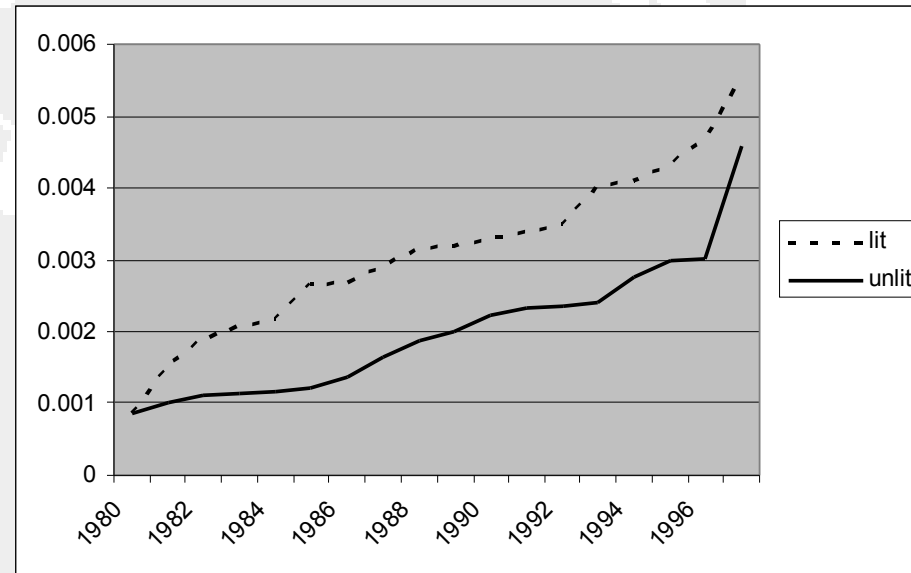


Where money is flowing

Patent Weakness by Industry*



Litigation Trends on “Weak” Patents*



- While clear differences of weakness exist across industry sectors, uninformed capital is driving increased litigation on more questionable patents
 - More funding for weaker cases works against espoused value accretion incentive arguments
 - Quality discussion must include economic consequence inputs

*Source: “Weak Patents, Open Source Patenting, and Implications for the Bayh-Dole Act in Developing Countries.”
S.N. Boettiger; B. Wright, D. Zilberman, B. Hall. Dissertation, University of California, Berkeley. 2007.



Costs of Patent System – Procurement Case Study

- Prime contractor receives a technology purchase order from government and is forced to acquire technology from IP holder corporation (typically done through M&A activity)
 - ROI for Private Equity $\geq 40\%$
 - Transaction Fees $\geq 15\%$
- Subcontractor either acquired or constrained on fixed price with Prime cost of capital charged to buyer

Effective Procurement = Price – Σ (M&A Premium_{tech} – Transaction Fee – Obsolescence)

M&A Premium_{tech} = 40%

Transaction Fee = 15%

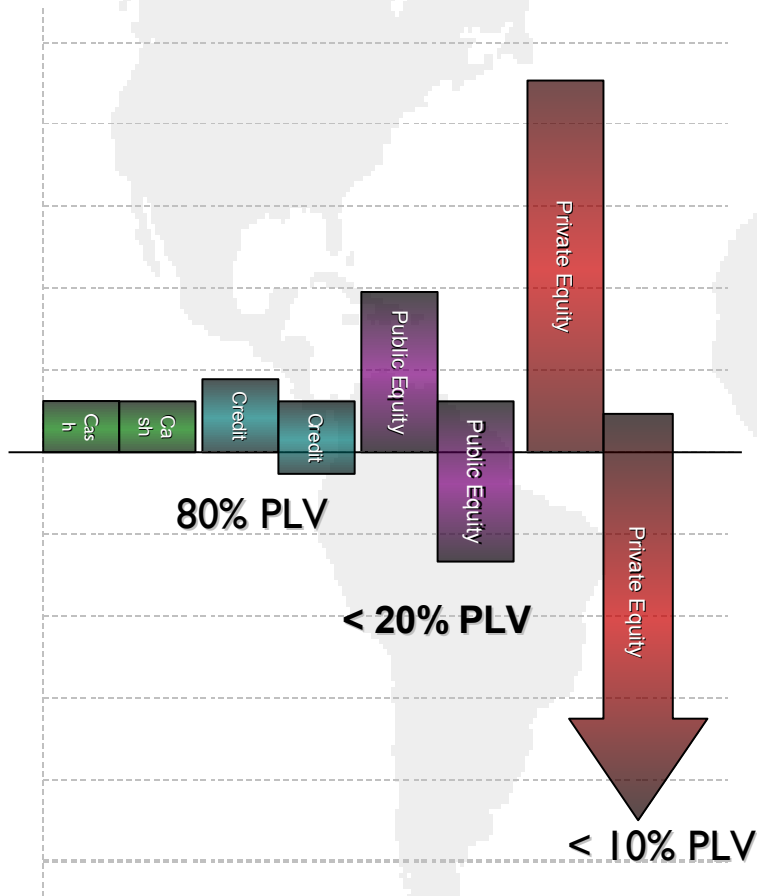
Obsolescence / Frequency of Change in Spec = >10%

EFFECTIVE COST OF PROCUREMENT TO GOVERNMENT = 65%

In other words, \$1 buys \$0.35 in technology!



Costs of the IPR Paradigm



- “R&D” acquisition business models pervasive
- Cost of capital inefficiencies favor financial intermediaries rather than innovators – the *Derivative Dream*
- Access to capital and incentives unaddressed in substantive policy reform





Thank You

