

30 Years of U.S. Technology Policy in 30 Minutes
(Along with Thoughts on the Future)

By

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Misery Index

Chrysler Bailout

Innovation Crisis

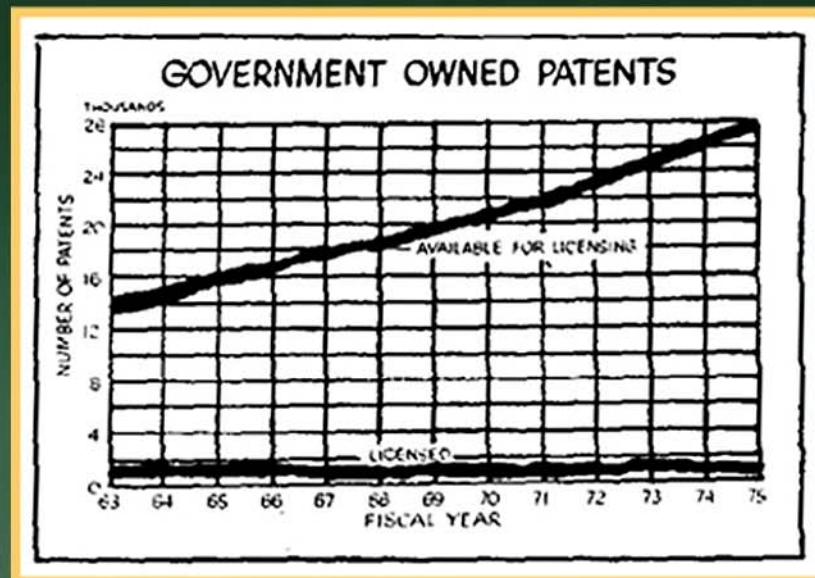
Iran Seizes Hostages

Energy Crisis

Midwest Rustbelt

Debacle in the Desert

What's Happening to Our Federal R&D Dollars?



28,000 government-owned inventions; less than 4 percent licensed

We found that hundreds of new compounds developed at university laboratories had not been tested and screened by the pharmaceutical industry because the manufacturers were unwilling to undertake the expense without some possibility of obtaining exclusive rights to further development of the product.

— 1968 General Accounting Office study of Department of Health, Education and Welfare for President Lyndon B. Johnson

Technology Transfer Before 1980

- Centralized technology management
- No incentives for universities/labs to commercialize R&D
- 35 different federal patent policies

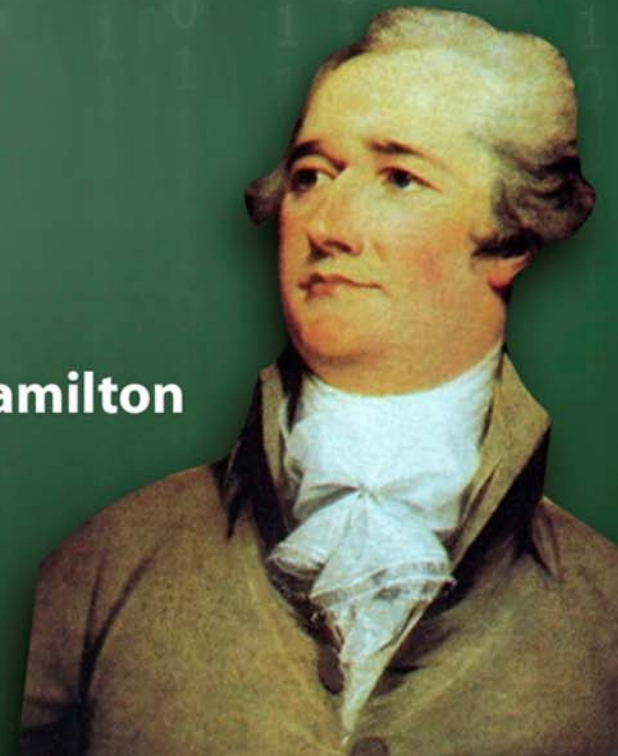


**INCENTIVES
FOR
UNIVERSITIES
& LABS**

Decentralized vs. Centralized Power



Jefferson



Hamilton

Bayh-Dole First Introduced

"A wealth of scientific talent at American colleges and universities – talent responsible for the development of numerous innovative scientific breakthroughs each year – is going to waste as a result of bureaucratic red tape and illogical government regulations..."

"Unless private industry has the protection of some exclusive use under patent or license agreements, they cannot afford the risk of commercialization expenditures. As a result, many new developments resulting from government research are left idle."

— Senator Birch Bayh's introductory statement, September 13, 1978

How the Bayh-Dole Act Works

- **Universities and small businesses own inventions made with federal dollars.**
- **Universities are required to share royalties with their inventors.**
- **Small businesses and companies proposing substantial manufacturing in the U.S. are given preference to licensing.**
- **The federal government reserves the right to use the invention royalty-free for its purposes (including treaty obligations).**

**“Possibly the most inspired piece
of legislation to be enacted in America
over the past half-century was the
Bayh-Dole Act of 1980.”**

The Economist Technology Quarterly

***U.S. once again a leader in basic and applied R&D
to improve economic performance***

National Academy of Science

***Universities created almost 2 start up
companies a day in 2005***

Universities creating 1.25 new products a day

Campus patenting 495 issued patents in 1980

3,278 issued patents in 2005

4,932 academic licenses in 2005

28,349 active licenses overall

Biotechnology industry rooted in academic research

Nanotechnology following similar trend

Bayh-Dole Model for U.S. Laboratory System:

1983 *Report to President Reagan urging more collaborations with industry*

1984 *Bayh-Dole amended to include university operated federal labs*

1986 *Federal Technology Transfer Act allows government-owned and operated labs to partner with industry (decentralized to laboratory director, dollars generated for additional research and administrative expenses and mandatory royalty sharing with lab inventors)*

1987 *Reagan Executive Order endorses FTTA as U.S. policy and instructs government agencies to fully employ it*

1993 *FTTA amended to include all contractor operated laboratories*

1996 *Industry partners in Cooperative R&D Agreements (CRADAs) with laboratories guaranteed exclusive field of use license to resulting inventions*

2000 *Formal notification requirements for licensing federal inventions shortened from 5 months to as little as 15 days, Congress requires agencies to report on specific milestones to show they are using the law effectively*

Lessons Learned

Passion is the most important ingredient for successful commercialization.

The inventor, management, and the partnering company all must share the passion for success. If any party does not, the deal will fail.

John Preston

Former Director of Technology Development, MIT

President of Atomic Ordered Materials (spin-off company)

*Honored by President of France and Vice President Gore
for contributions to innovation policy formation*

John Preston's Killers of Passion:

1. Greed

2. Destructive Criticism

3. Lawyers and Committees

4. Bureaucracy and Red Tape

Innovation comes from surprising places.

**Can you find
the richest man
in the world?**



Microsoft Corporation 1978