

Open Innovation and Open Business Models: Implications for Industry-University Relations

Presentation to the
Ewing Marion Kauffman Foundation Conference:
What Industry Wants from Universities

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Universities a Century Ago: Henry Rowland's* Lament

“...what must be done [is] to create a science of physics in this country, rather than to call telegraphs, electric lights, and such conveniences by the name of science.... When the highest honors are given to the mediocre, when third-class men are held up as examples, and when trifling inventions are magnified into scientific discoveries, then the influence of such societies is prejudicial.”

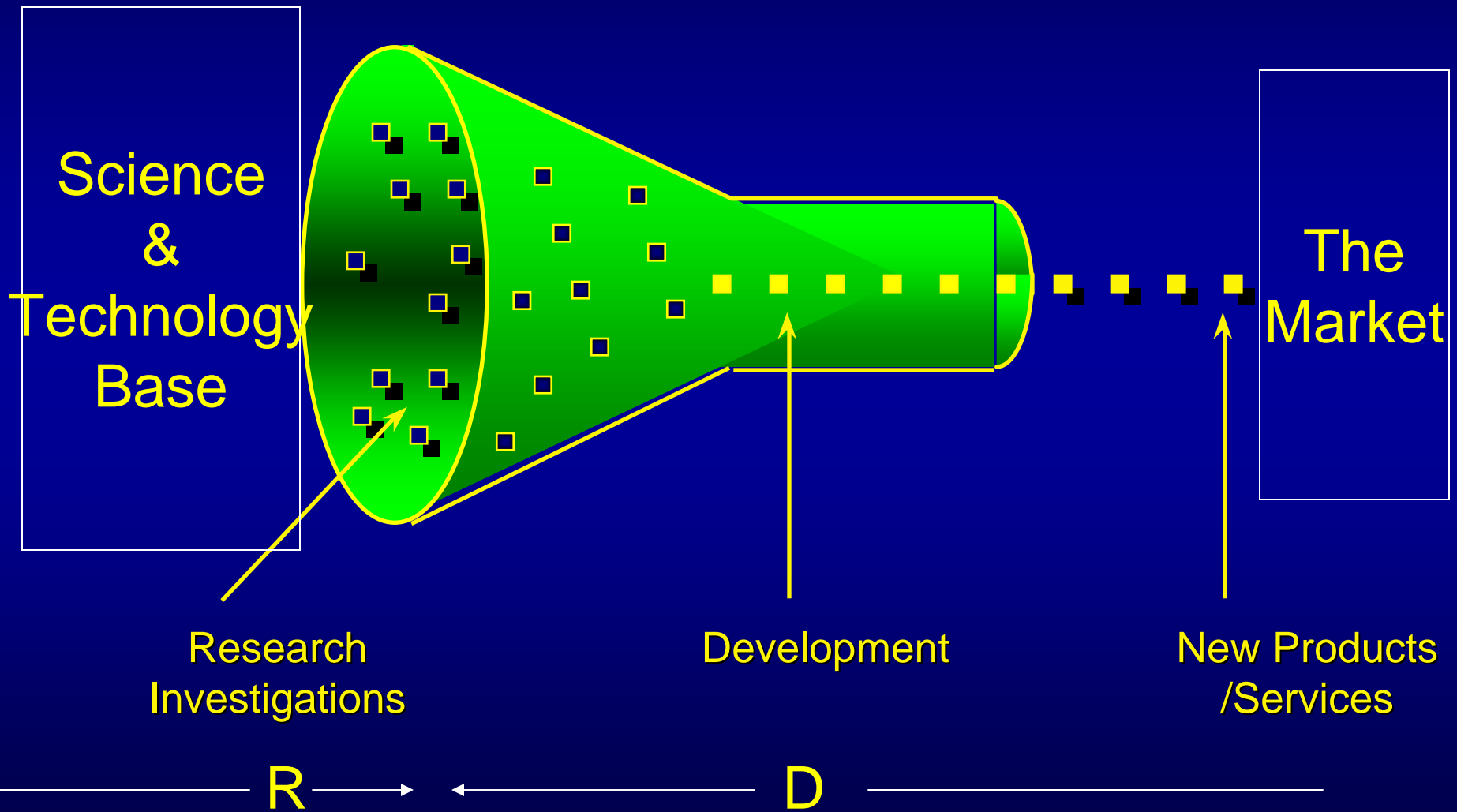
** address as President of the American Academy for the Advancement of Science, 1883*

The Innovation Model a Century Ago

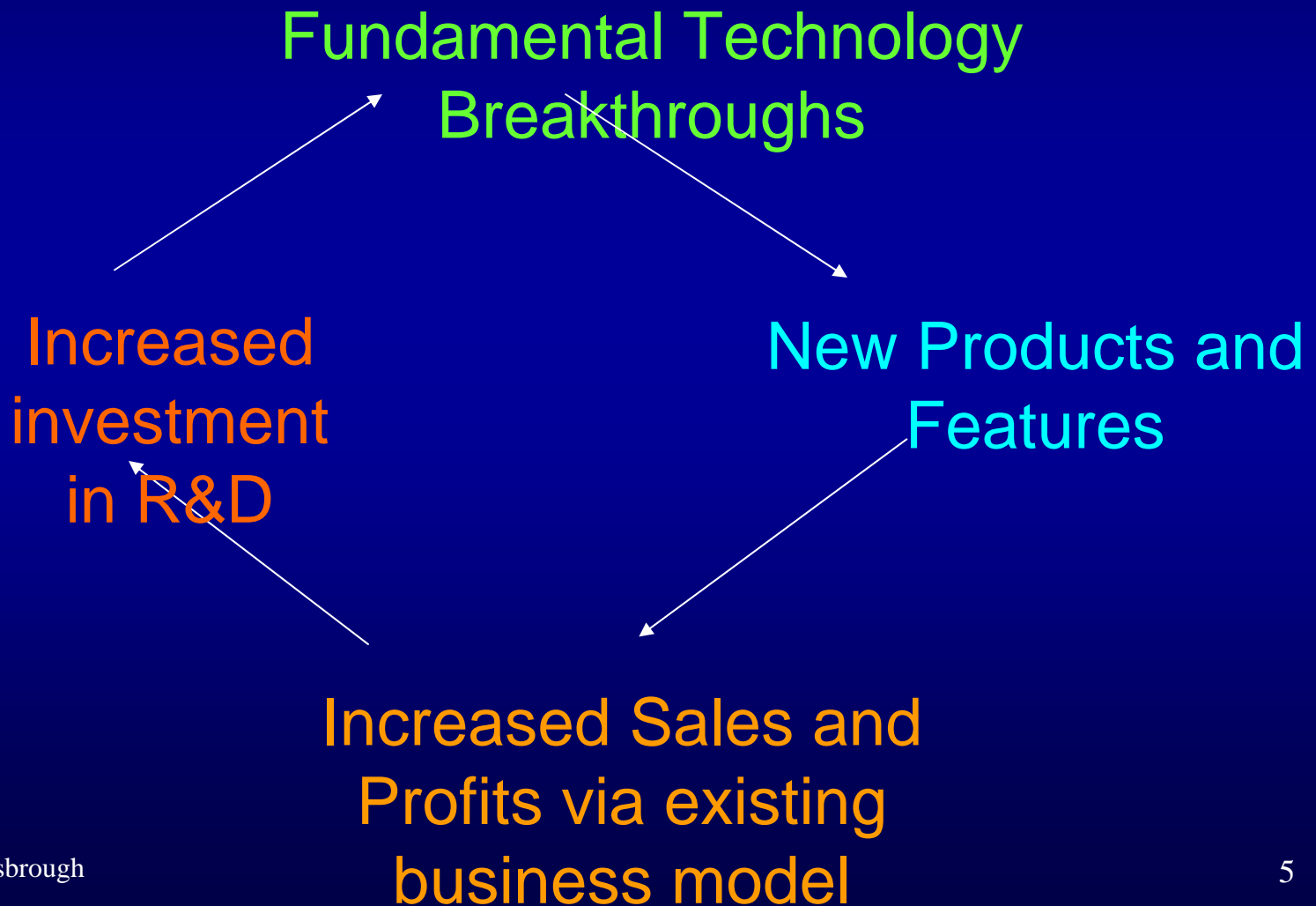
“The key [to success] is to find a man of genius, give him money, and leave him alone.”

– James Conant, former President, Harvard Univ.

The Closed Innovation System



The Virtuous Circle for R&D



Universities Today

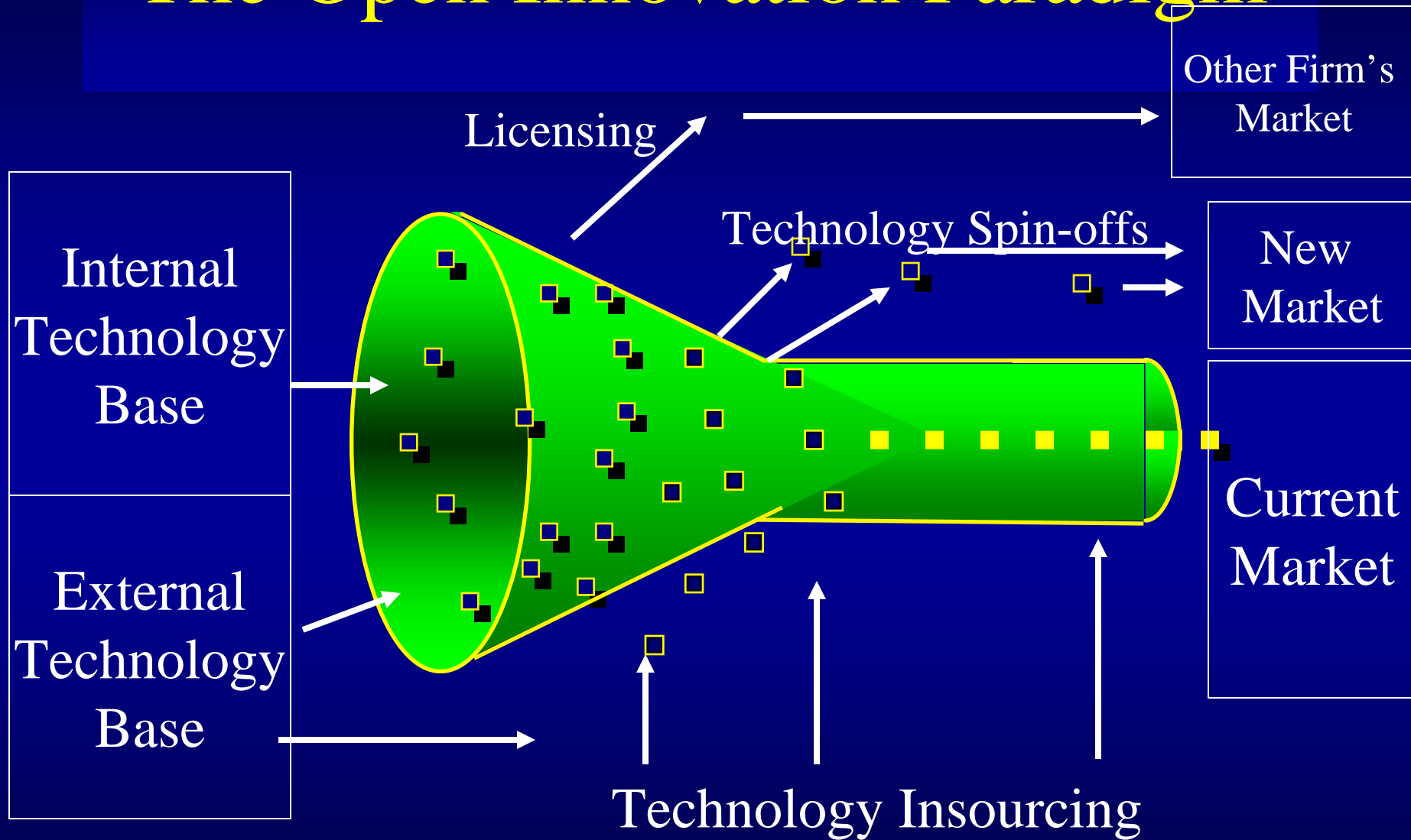
- Significant funding from Industry
- Strong relations with Industry
- Not just Faculty - *also their graduate students*
- Growing number of excellent universities around the world
- Growing number of patents received globally by universities

The Innovation Model today

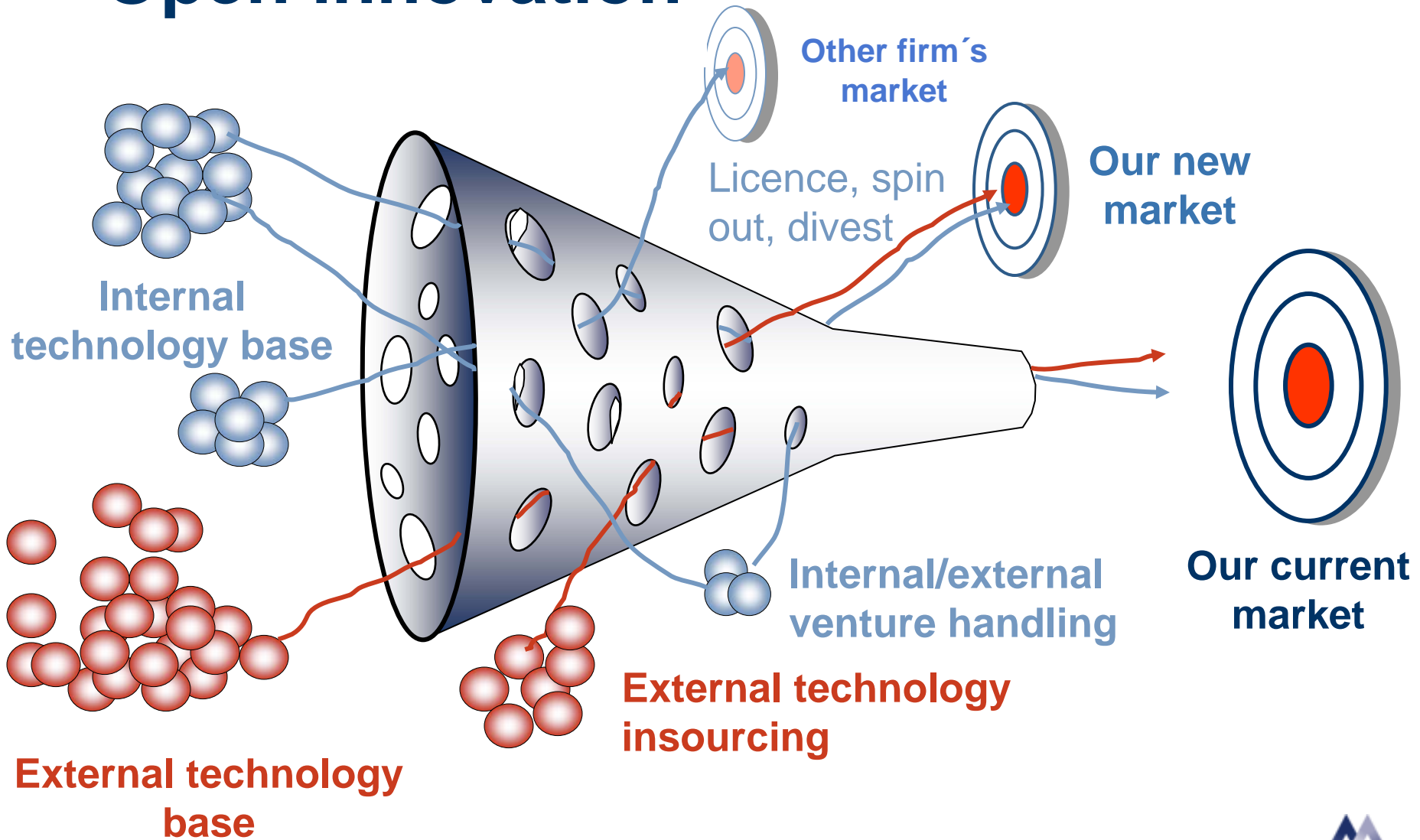
“Not all the smart people in the world work for you.”

- Bill Joy, founder, Sun Microsystems, now Partner at Kleiner Perkins.

The Open Innovation Paradigm

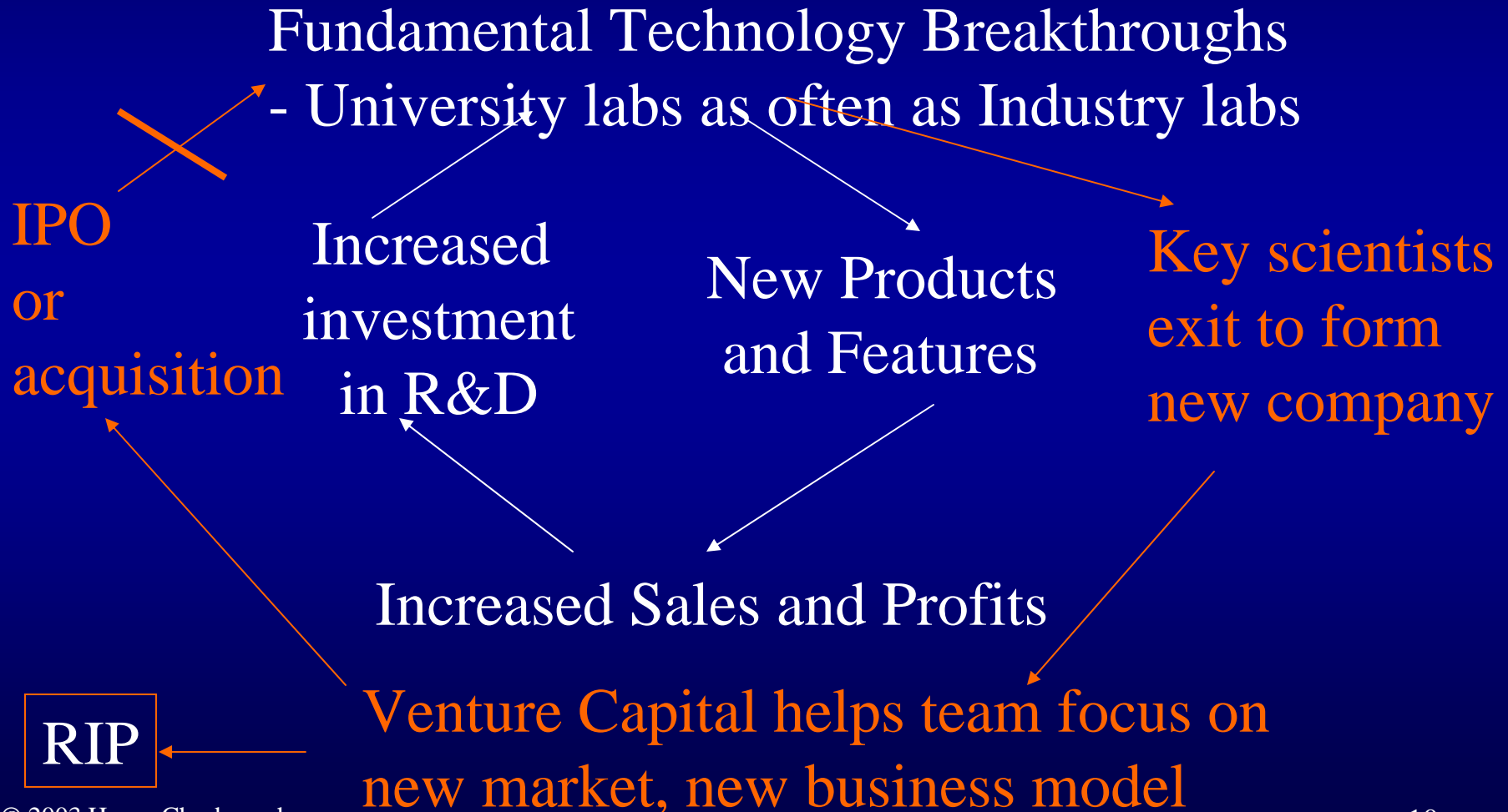


Open innovation



Stolen with pride from Prof Henry Chesbrough UC Berkeley, *Open Innovation: Renewing Growth from Industrial R&D*, 10th Annual Innovation Convergence, Minneapolis Sept 27, 2004

The Virtuous Circle Broken



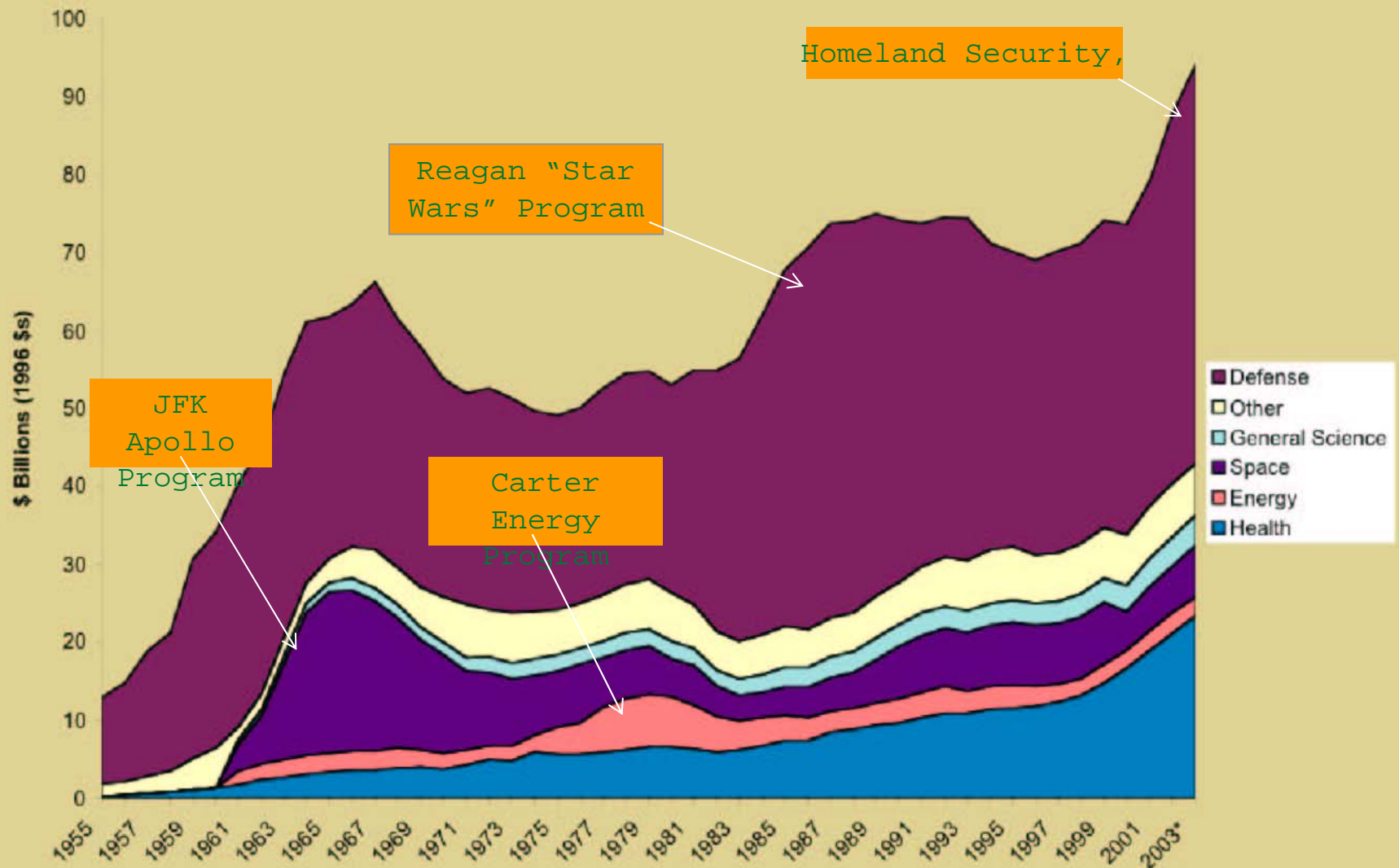
Implications for Industry-University Research Collaborations

- Industry is Retreating from Basic Research
- Universities are Picking Up the Slack
- Are Universities Set Up to Work as the Lab for Industry?
 - Is this consistent with the mission of the university?
- Are Companies Set Up to Work with Universities?
 - Can companies profit from university work?

Universities as Open Institutions

- Universities are intended to explore, discover, and disseminate new knowledge
- Society expects that, over time, much of this new knowledge will be useful
- Post World War II, government increasingly funded university research

U.S. Federal Government R&D History



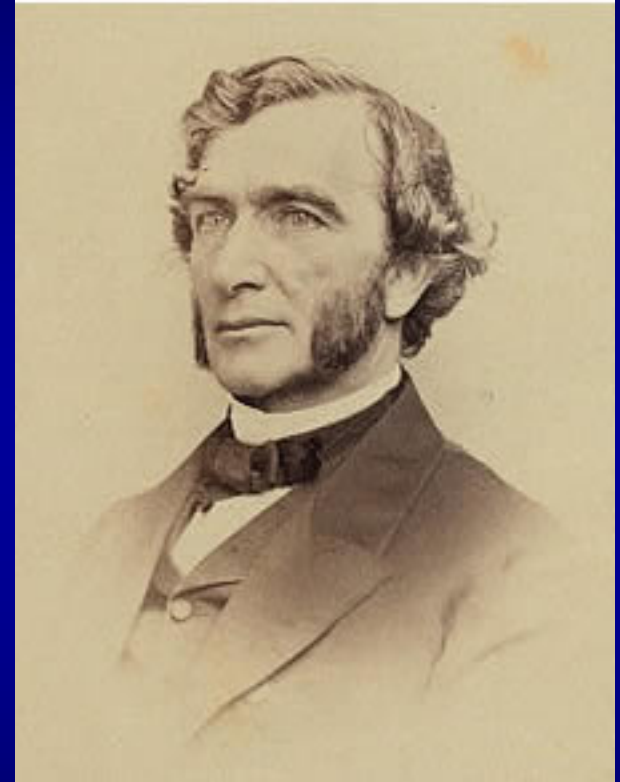
Source: National Science Foundation, *Federal R&D Funding by Budget Function, Fiscal Years 2001-03*.
* 2002 figures are preliminary, 2003 figures are proposed.

M. Hoeffert

Courtesy of Chris Somerville

The Public Research University

- The Morrill Act (1862):
 - "An Act Donating Public Lands to the Several States and Territories which may provide Colleges for the Benefit of Agriculture and the Mechanic Arts“
- Explicitly intended to advance technology and serve the working classes



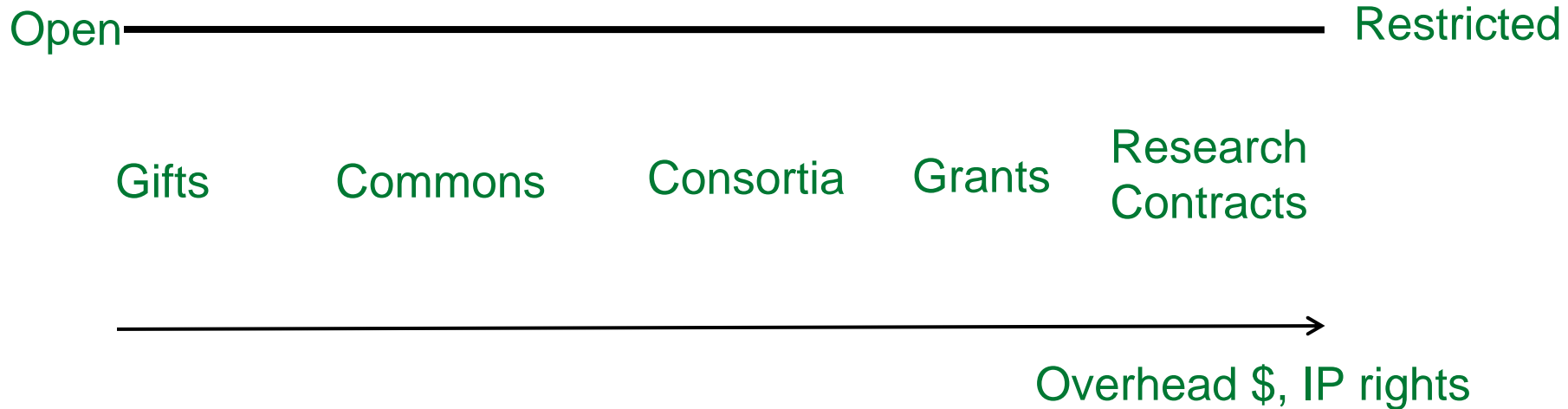
Pressures on University Research

- UC Berkeley received 74% of its funding from State and Federal sources in 1976
 - Industry contributed <3%
- Berkeley received just 48% of its funding from State and Federal sources in 2006
 - Industry contributed 12%
- Given the current budget crisis, State funding for research likely to decline further

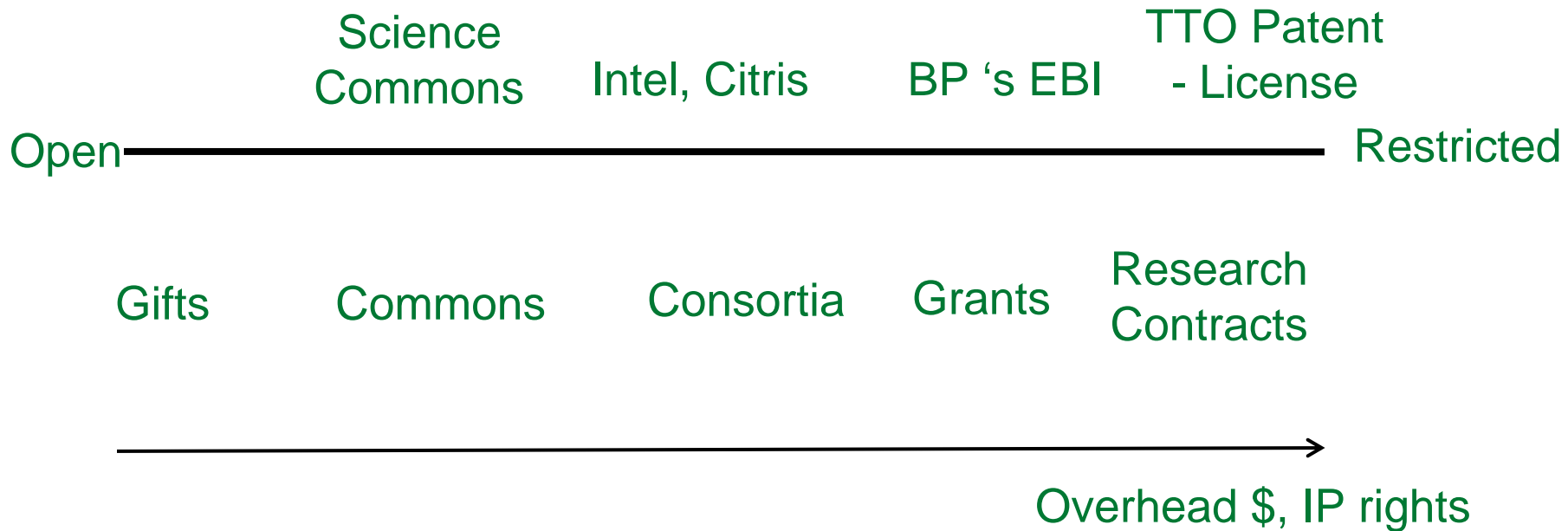
Universities as Industry Research Partners

- Bayh-Dole Act of 1980 – universities can claim an ownership right to its discoveries
- University research discoveries sometimes vital to industry activities
 - E.g., Cohen Boyer patent on recombinant DNA
 - \$255 million paid, product sales of >\$25 billion

Balancing Openness and Industry Needs: A Proposed Continuum



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A Modest Proposal: Measuring Speed of Technology Transfer

- Kauffman promoted the metric of “how long does it take to start a new business?”
- We need something equivalent in University Tech Transfer
- Define 4-5 types of technology transfer, and measure time to complete across different universities
 - MTAs
 - research use of technology
 - consortium use of technology
 - etc.

