

Carol Dudley
Vice President R&D, Core, Hydrocarbons & Chemicals
The Dow Chemical Company

Biography

Carol Dudley is Vice President R&D, Core, Hydrocarbons & Chemicals, for The Dow Chemical Company.

Dudley joined Dow in 1980 as an engineer in R&D for plastic films and foams in the Granville Research Center. In 1991, Dudley worked in a Dow/Exxon joint partnership in the development of styrene butadiene/isoprene block copolymers at the Louisiana operations. In 1993, she served as Laboratory Director for the Analytical Science Lab in Midland, Michigan. In 1995, Dudley was the Global R&D Director for the Epoxy Products and Intermediates Business. In that role, she had overall management responsibility for Research and Development in North America, Latin America, Europe and the Pacific regions.

Dudley was named the North America Chlor-Alkali Assets Business Operations Leader and Site Leader for Oyster Creek at Dow Chemical in Freeport, Texas in 1999. In that role, she also was the chairperson of the CAER committee for Brazoria County. She became Business Vice President for Chlor-Alkali Assets in 2000, and was named Vice President of Global Purchasing in 2003. Dudley was named to her most recent position as Vice President of R&D, Core, Hydrocarbons and Chemicals in 2004.

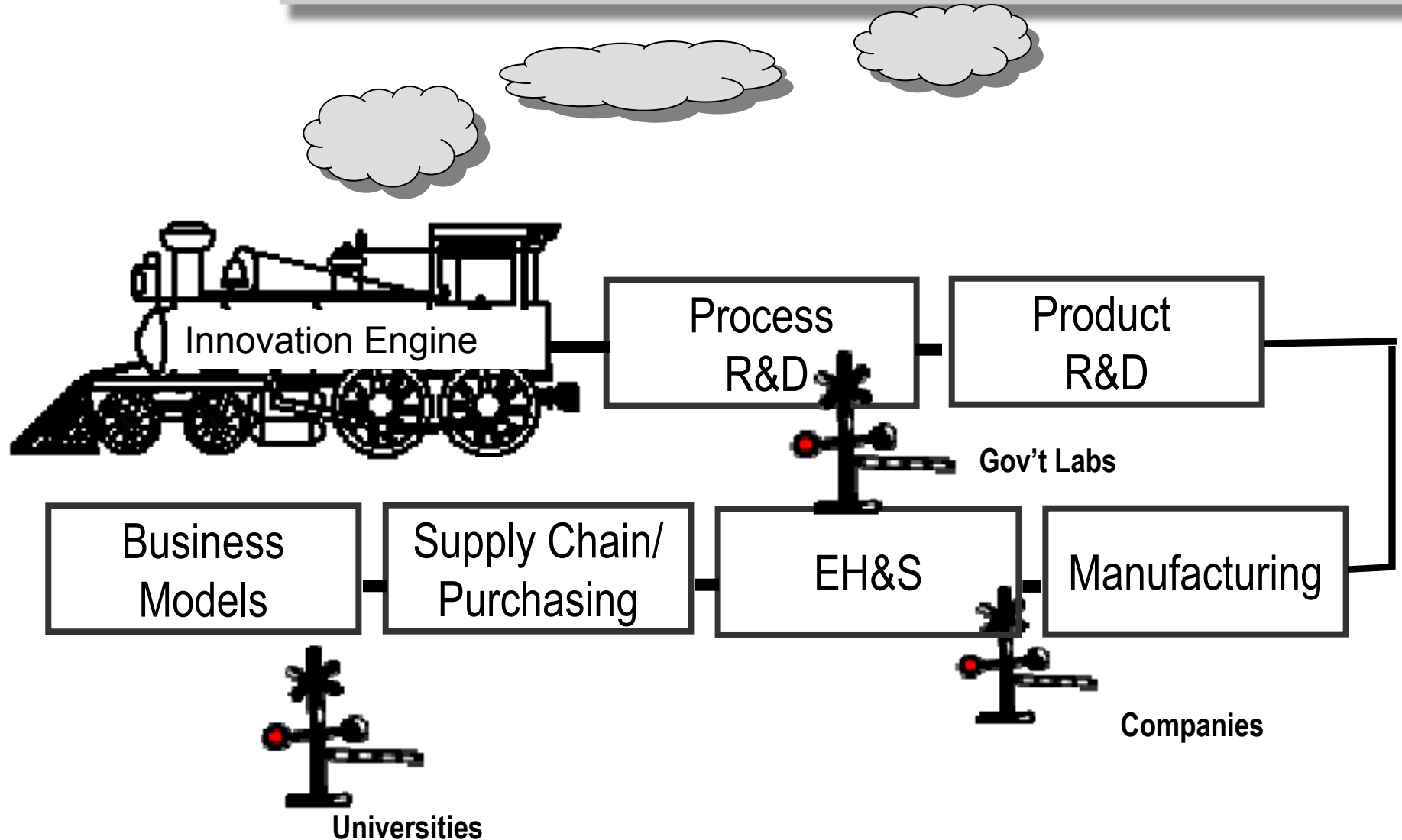
Dudley received a bachelor's degree in chemical engineering from Carnegie Mellon University and has attended Executive Education at Indiana University. She participates as an advisory board member for the Engineering Department at Carnegie Mellon University in Pittsburgh, PA and is a member of the Society of Women Engineers and AIChE. Carol has a spouse employed by Dow and two teenage daughters.



Where can you find Innovation in your company?

Carol Dudley
November 3, 2005

Where can Innovation Occur?



Background



Carol Dudley

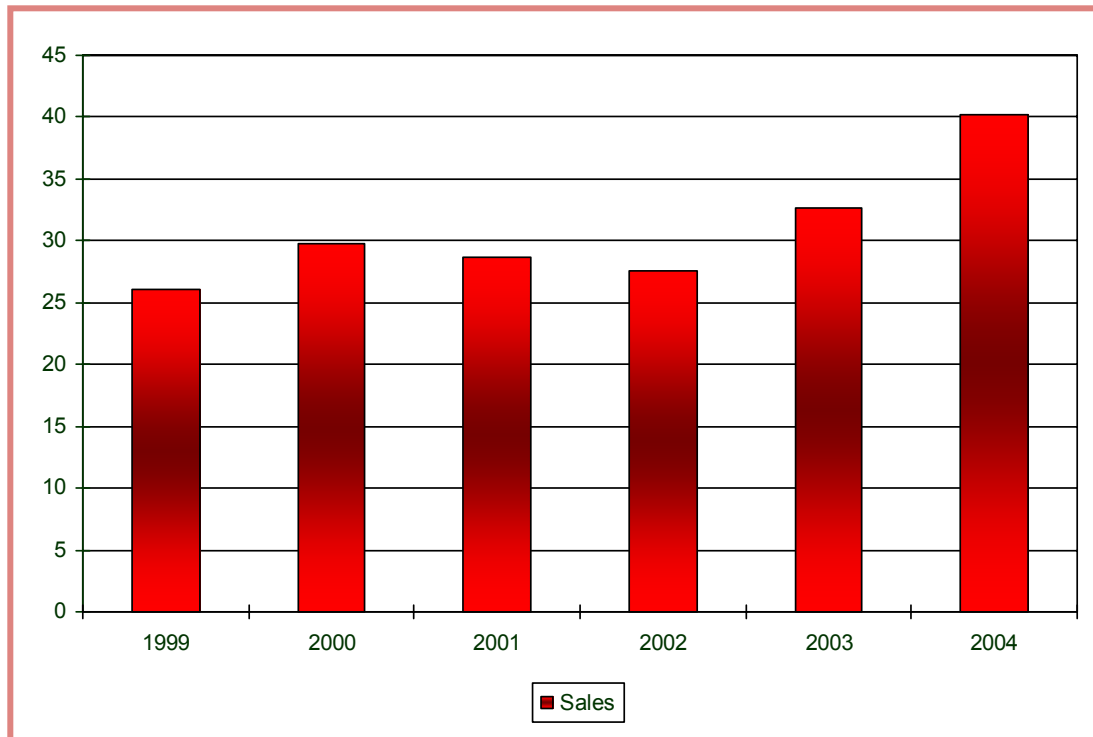
- Chemical Engineer, 1980
 - Carnegie Mellon University
- 25 years with The Dow Chemical Company
- Research Engineer - Fabricated Plastics (Films/Foams)
- Research Manager - DEXCO Polymers (SIS, SBS)
- Research Director - Analytical Sciences
- Research Director - Epoxy Products and Intermediates
- Manufacturing Director/Site Manager - Oyster Creek, Texas
 - Chlor-Alkali Manufacturing
- Business Vice President - Chlor-Alkali Assets
- Purchasing Vice President - \$15 Billion buy
- R&D Vice President - Hydrocarbons, Chemicals, Corporate

Dow – Innovation Impact



Sales growth of 54% versus 1999

Income increase of 73% versus 1999



*“If you can’t do it better,
why do it?”
H.H. Dow*

Innovation....



Successful exploitation of new ideas

Innovation....



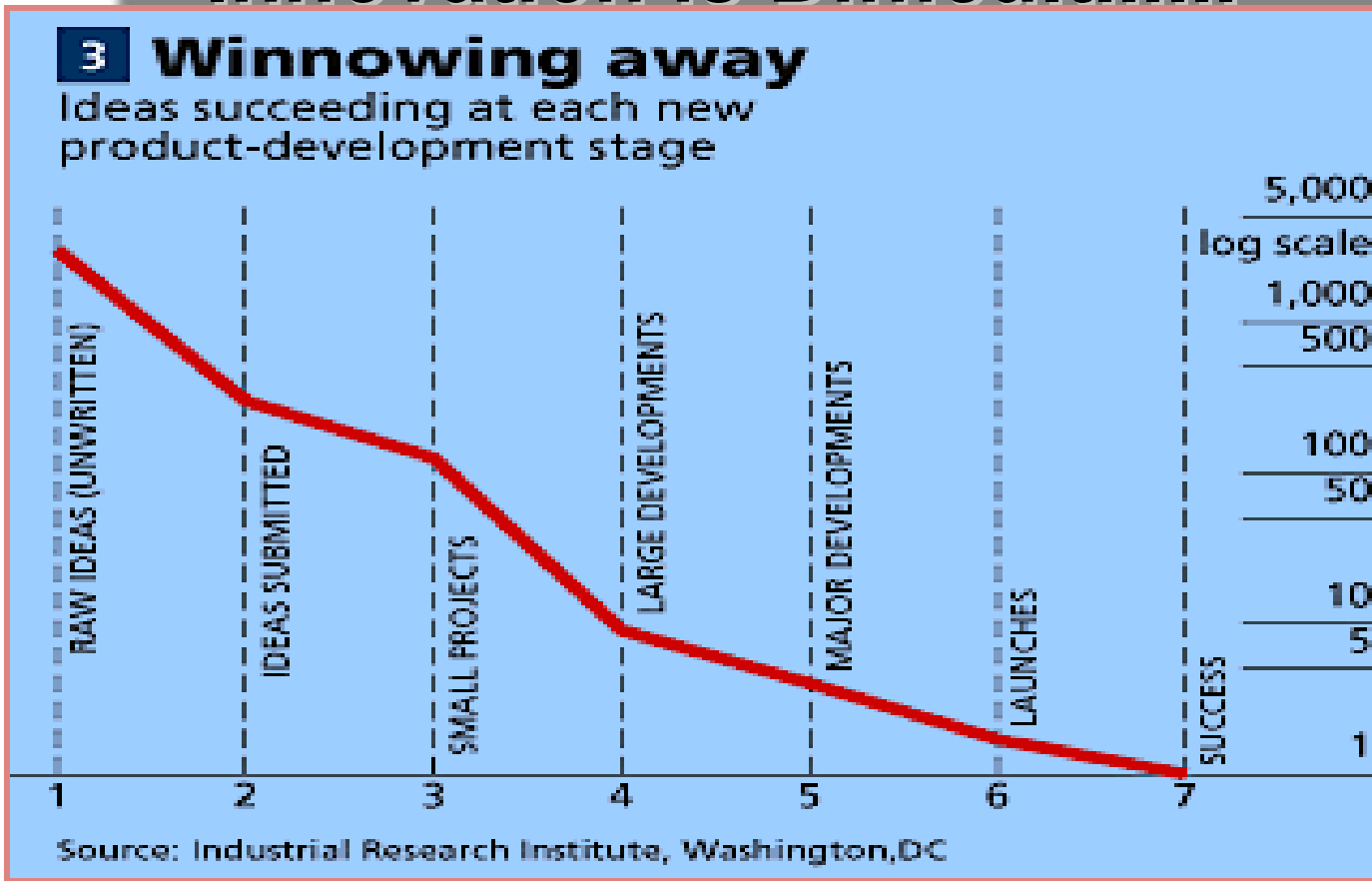
Successful exploitation of new ideas

This means...

It is NOT Innovation if you do NOT make money from the idea.



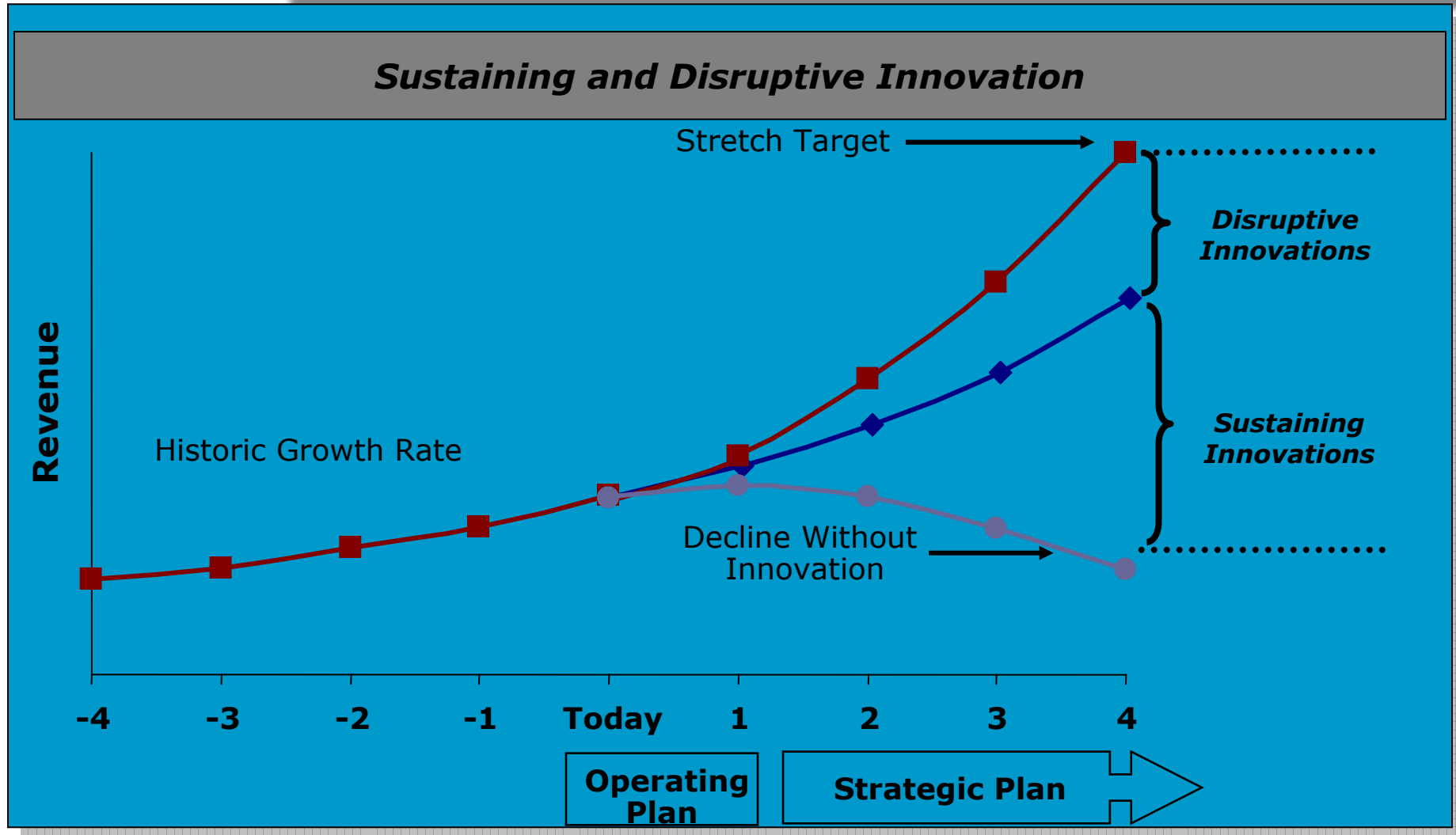
Innovation is Difficult.....



Innovation and product development are expensive endeavors considering 84% of new product ideas fail to make it into the marketplace, and of those that get to market, 50 to 70% never gain any traction

Deloitte & Touche LLP
Mastering Innovation Workshop, January 2005

Creating innovation and disruption can shift revenue trajectories
Embracing disruption can result in significant revenue growth



Deloitte & Touche LLP
Mastering Innovation Workshop, January 2005



To realize future growth, it is key to have an explicit focus on innovation:

- through structured idea generation and evaluation processes
- through synchronization of processes and capabilities WITHIN and ACROSS the value chain to exploit the ideas and
- through establishing capabilities where your company has strengths that can deliver value across a broad product/service offering.

Where can Innovation occur?



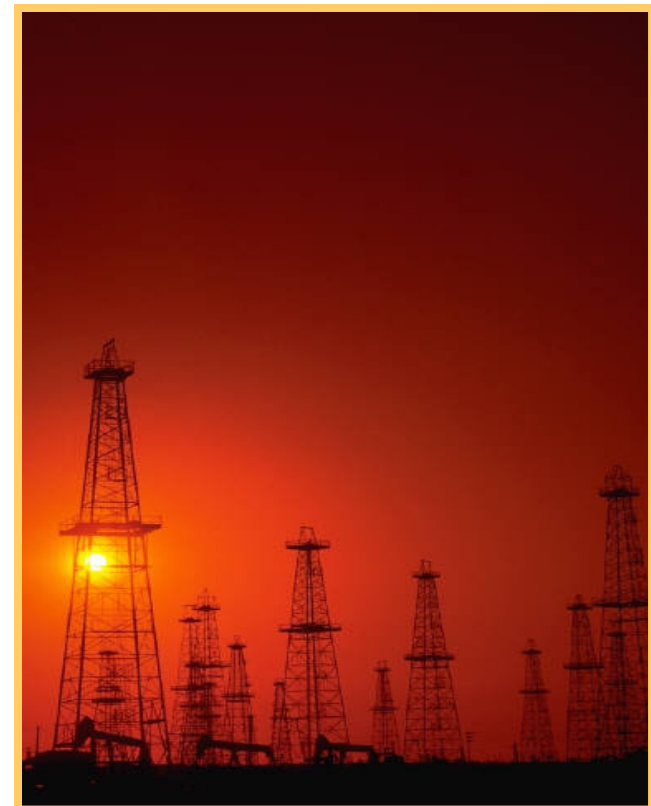
- **R&D - Product and Process**



Where can Innovation occur?



- R&D - Product and Process
- **Manufacturing**



Where can Innovation occur?



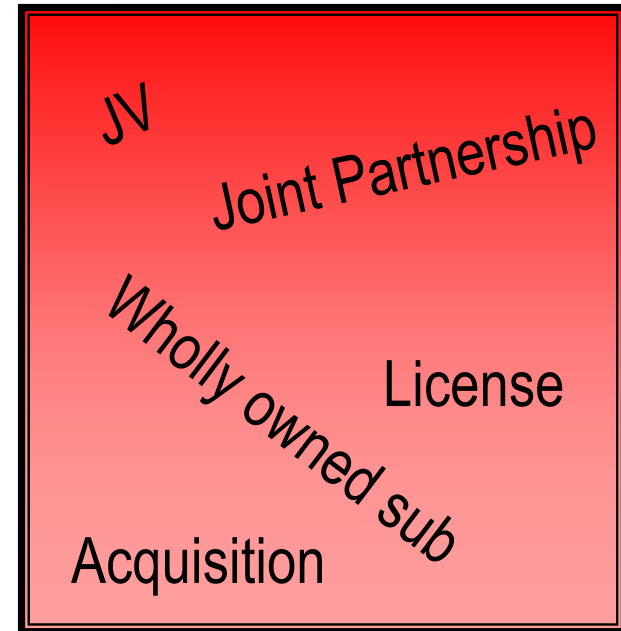
- R&D - Product and Process
- Manufacturing
- **Supply Chain/Purchasing**



Where can Innovation occur?



- R&D - Product and Process
- Manufacturing
- Supply Chain/Purchasing
- **Business Model**



R&D Innovation at Dow



Product - Diesel Particulate Filters

Unmet Need:

- Growing European (NA) diesel engine use
- Increasing restrictions on particulate emissions
- Desire for faster regeneration times

Match of Dow Capability:

- Material Science-Particle morphology
- Catalysis Science
- Dow Automotive Specialists-Industry Contacts

Diesel Particulate Filter



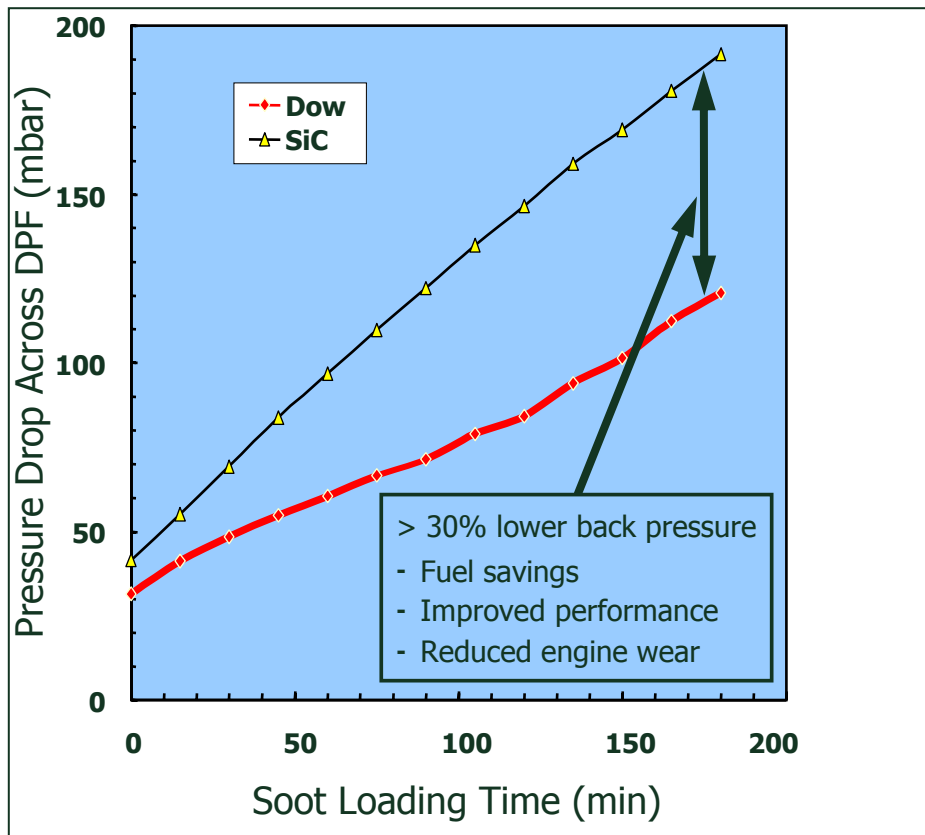
Innovation - The Engine For Growth



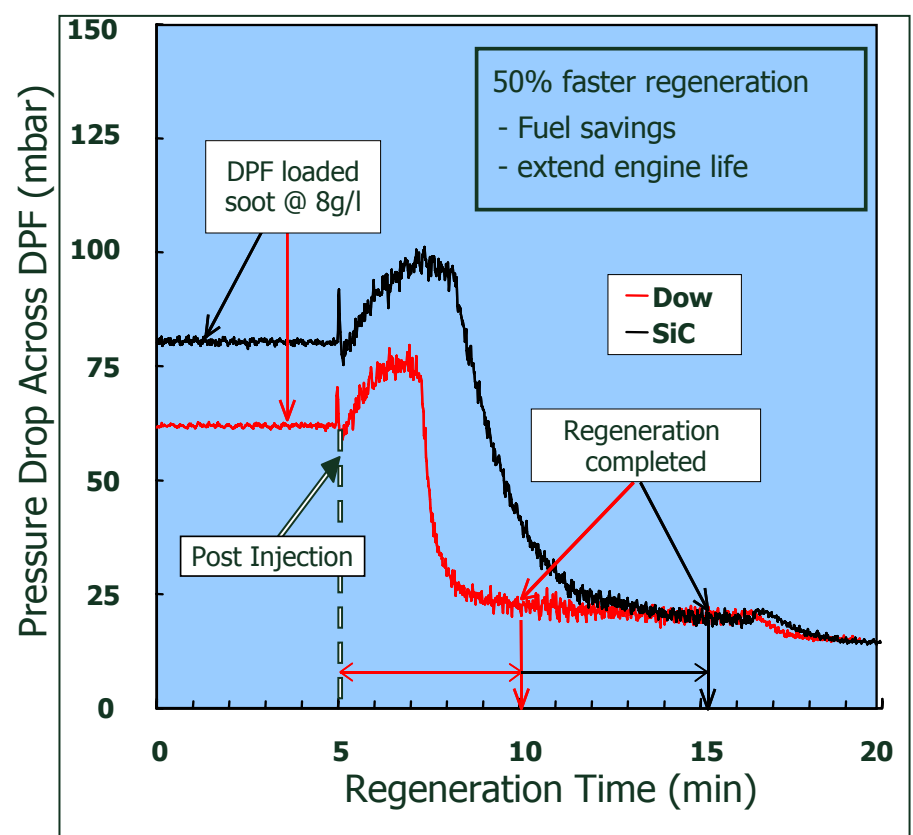
What have we delivered?

Development Stage Research
Diesel Emissions - Competitive Comparisons

Soot Loading



Regeneration



2004 Institutional Investors Meeting



Process - Ethylene Oxide

Dow Capability:

- Process Safety
- Catalysis
- Process Chemistry

What have we delivered?

- Reduced Unit Operations

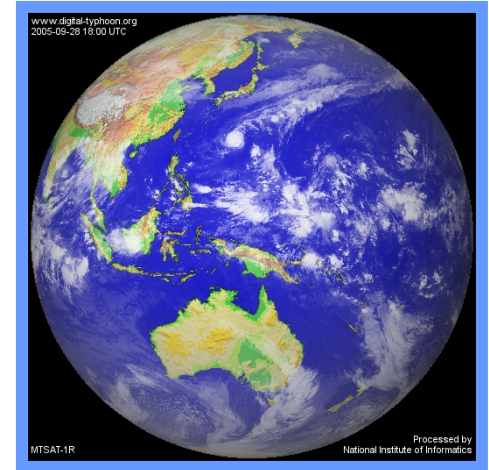
MEGlobal

R&D Innovation at Dow



➤ Globally

- Connection to local markets
- Connection to regional university research
- Lower cost research

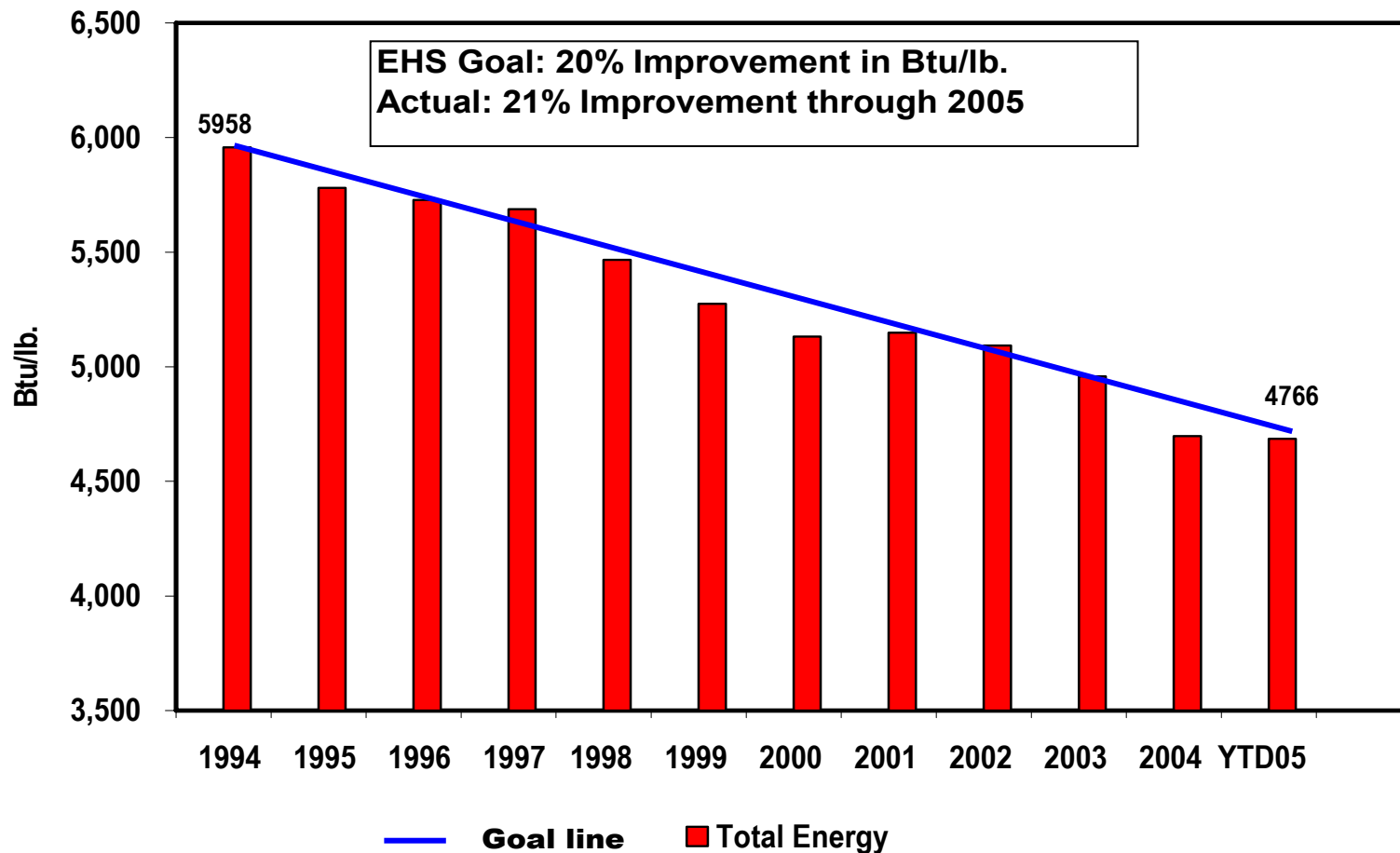


➤ Universities

- 1 million R&D people globally
- 5000 in Dow
- Use of University/Institutes to fund early-stage higher risk R&D



Dow Global Energy Intensity



Manufacturing: Chlor-Alkali



2004 Projects:

Improvements in anodes and membrane cells

Savings:

\$13.1 Million/yr in energy savings

Future Project:

Further improvements to membrane cell = 5% cell energy saving

Future Savings:

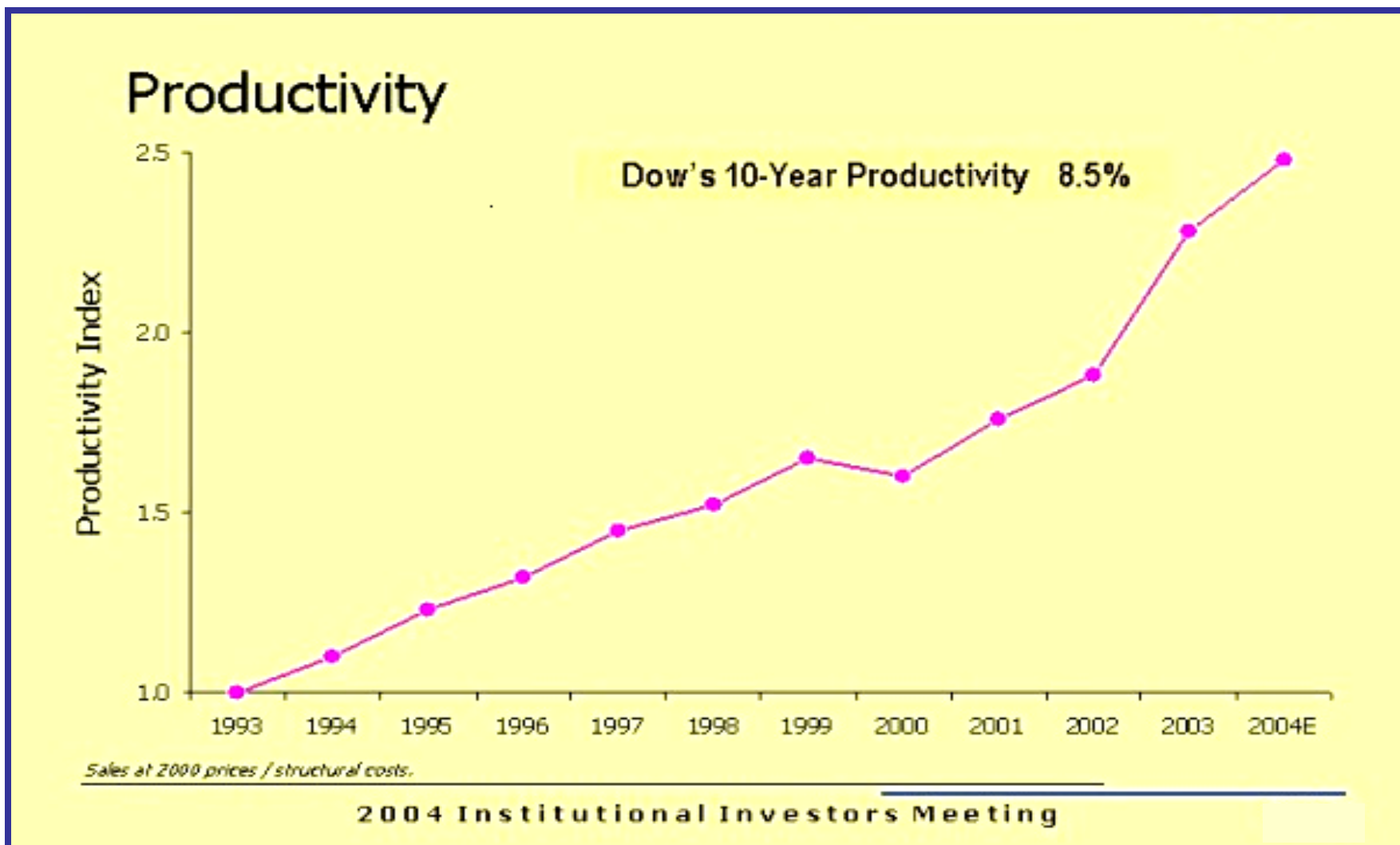
\$5 Million/yr in energy savings



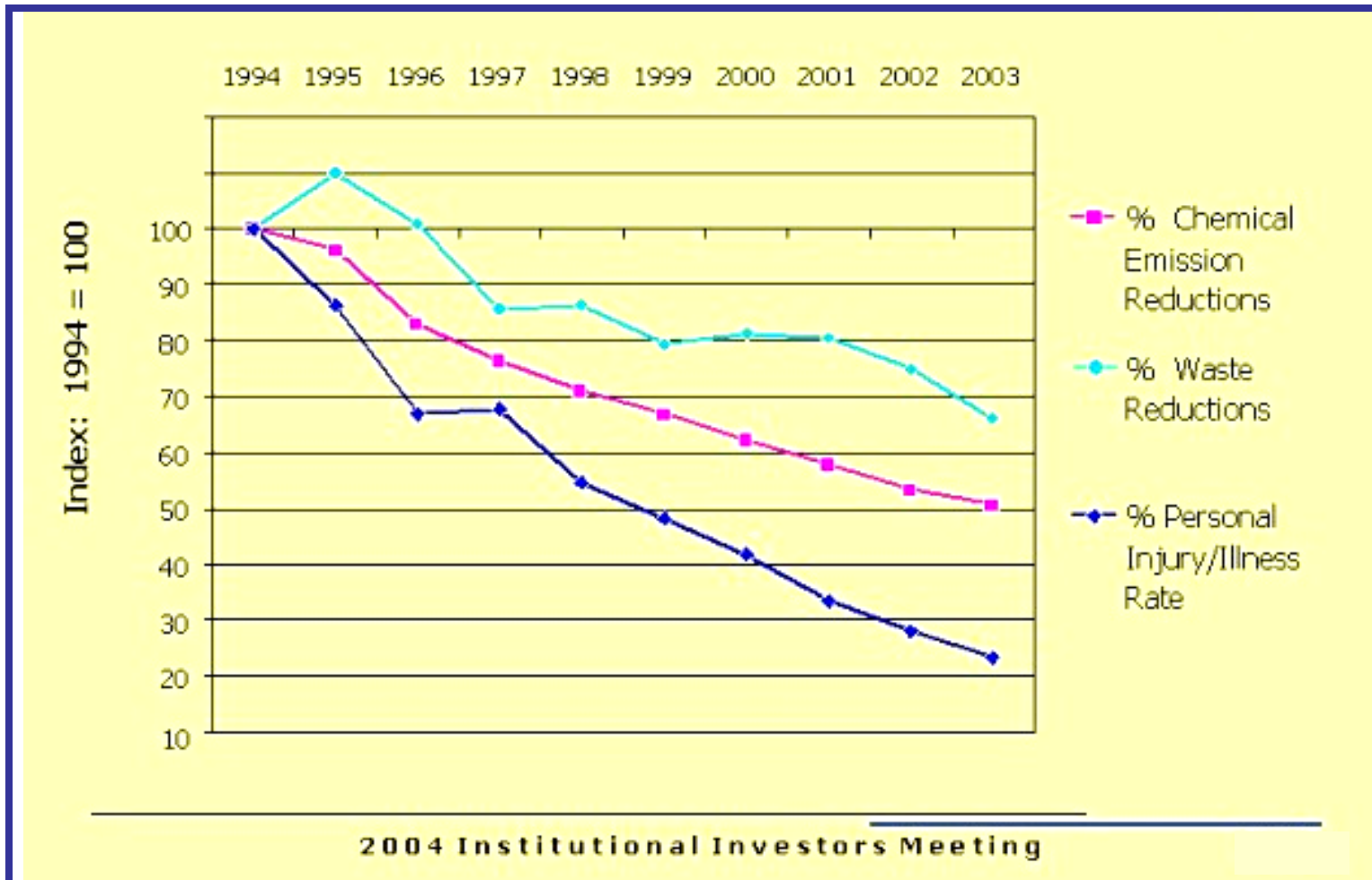
- Technology Improvement for Competitive Advantage (TICA)
 - Drive most effective technology implementations globally
 - Completes competitive assessments

Manufacturing & Engineering

DOW



EH&S Performance





- Opportunities to Innovate in:
 - “Buy” Space:
 - Auctions, Global Leverage
 - “Operating Systems Space”:
 - Contract Management
 - Buying Patterns
 - Most Effective Technology
 - “Pay” Process and Systems:
 - Outsourcing
 - Global Centers

Business Model Innovations

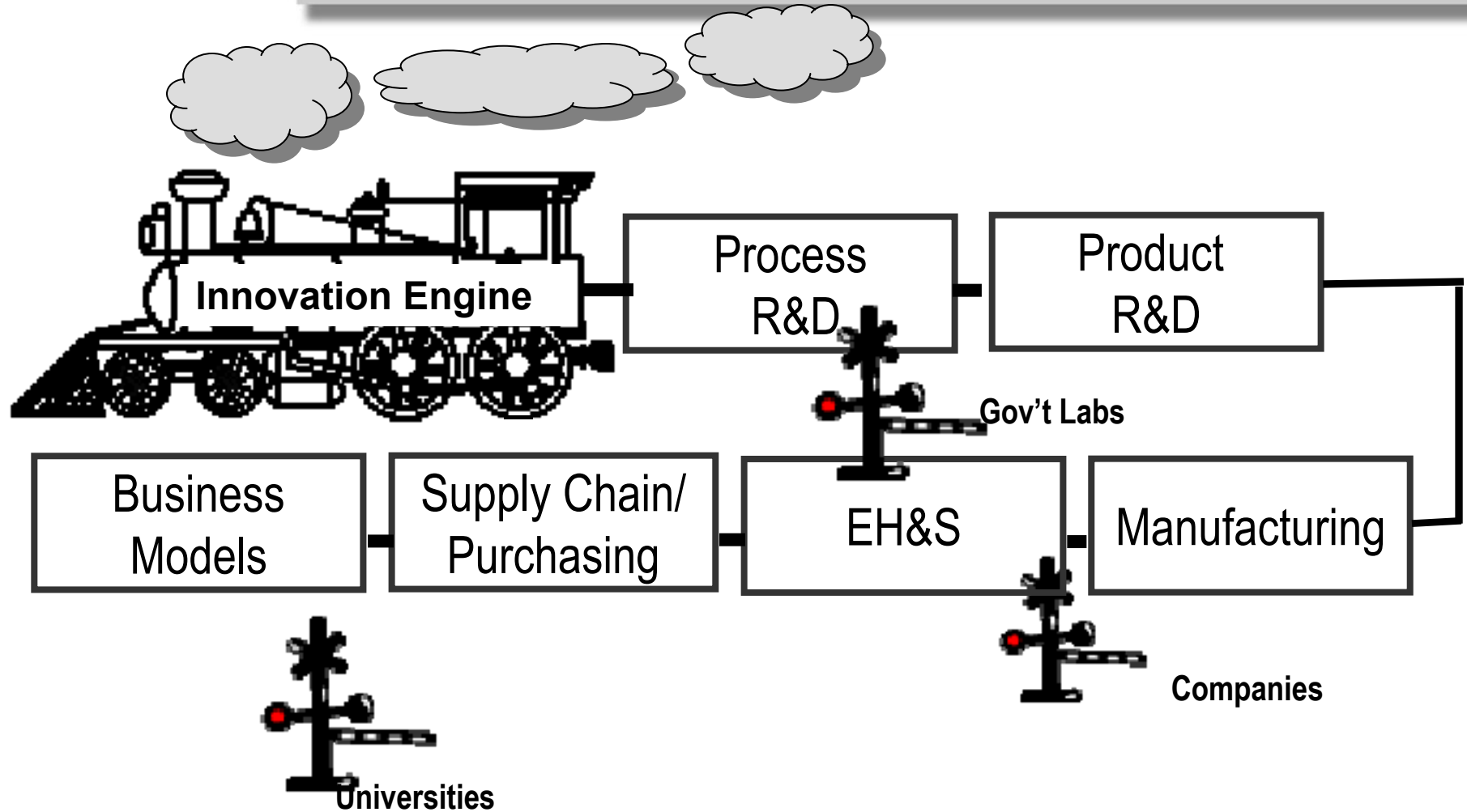


- Joint Ventures/Partnerships
 - DEXCO Polymers:
 - Combined Dow technology with Exxon market knowledge
 - Co-generation power plants
 - LNG Terminal USGC, Fuel Cells
 - BASF/Dow Joint Development HPPO Technology

BASF, DOW MULL PROPYLENE OXIDE UNIT

Reuters, CNI and PR Newswire (August 6, 2003) reported that Dow and BASF are evaluating options on jointly setting up a 300,000 tonnes/year propylene oxide unit that could start up in 2007. A press release issued by the two companies said that together they "have made significant progress in advancing the technology for the manufacture of propylene oxide using hydrogen peroxide as a key raw material (HPPO) . . .

Where can Innovation Occur?





Living.
Improved daily.