15.351 Managing Innovation and Entrepreneurship
Spring 2008

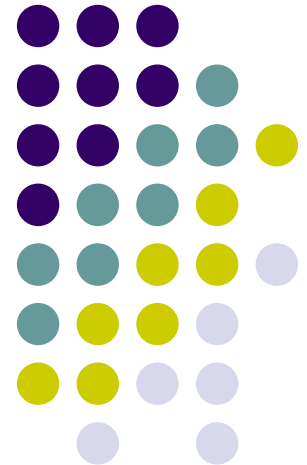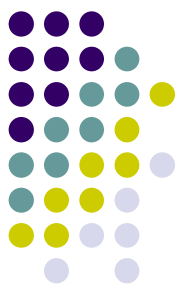# 15. 351 Managing Innovation & Entrepreneurship

Fiona Murray

MIT Sloan School of Management

2008

GSK, Organization Structure & Design for Innovation

Module Two:
Building Organizations for Executing Innovations

Five classes & <u>one exercise</u> – insights into organization design choices such as structure & incentives

Executing Innovations

Key structures & incentives

- The Bake-Off – structuring innovation methods
- Managing on Internet Time – structuring & experiencing flexible structures
- **GlaxoSmithKline** – shifting from rigid to flexible structures & incentives
- IBM-Linux – structuring around communities
- D-Wave – structures incorporating external actors, incentives
- SpudSpy – negotiation participation & incentives for external participants

Executing Innovation
Key Design Choices

Innovation architecture

- Organization of tasks for concept (opportunity) development
- Organization of tasks for implementation
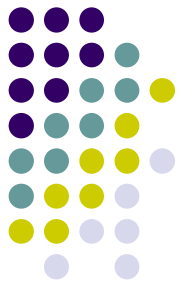- **Functional vs. project organization**

Governance & control

- Who allocates functional resources?
- **Who controls projects & how are key decisions made?**
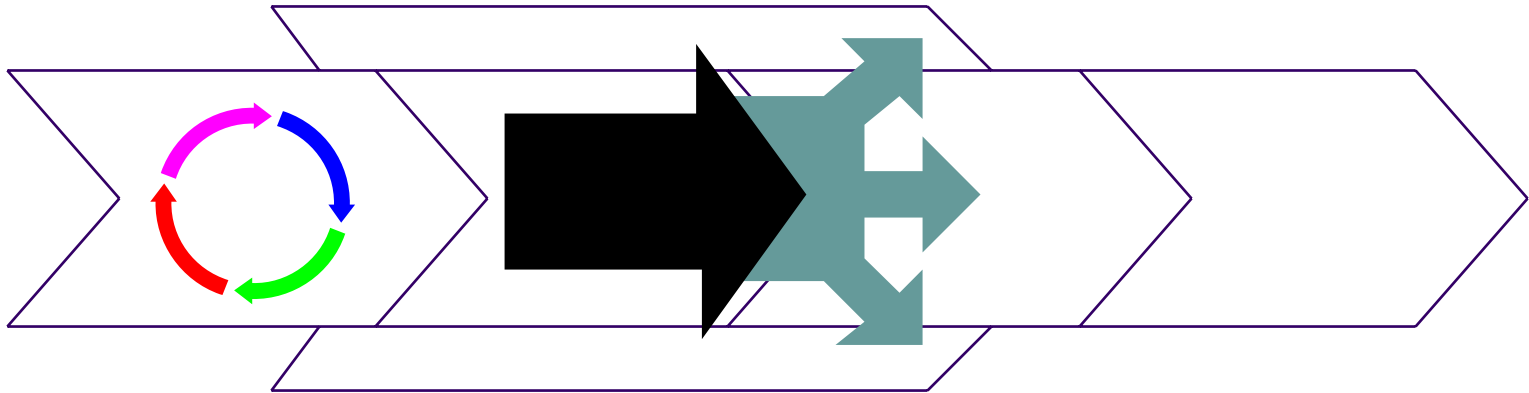
Incentives

- How do you motivate people to participate fully?
- **What types of rewards do they need?**

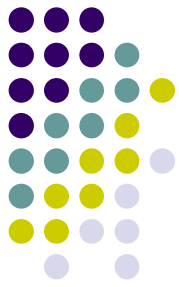# The ideal organization is flexible across dimensions

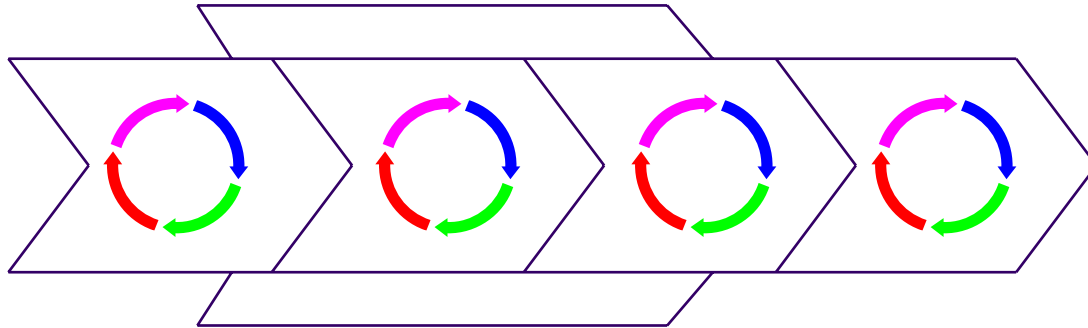In depth knowledge development within each function...

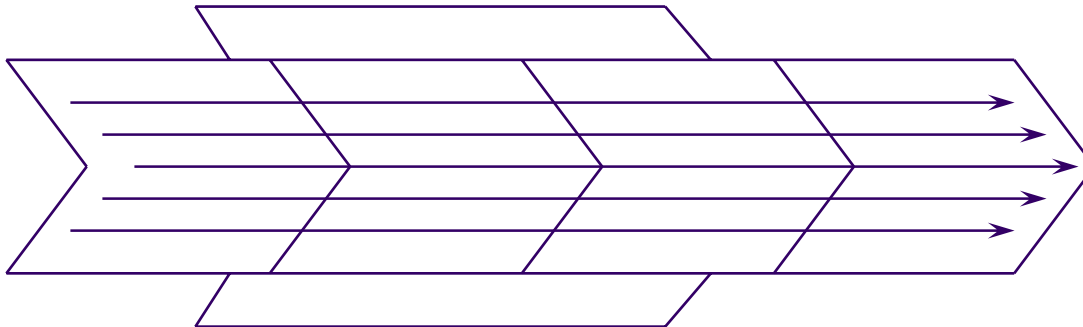Coupled with in depth knowledge transmission across both functional and firm boundaries

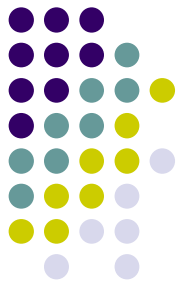# But in practice it is tough to be excellent at both....

A functional organization focuses on local knowledge *generation*...

A market focused organization focuses on knowledge *integration*...

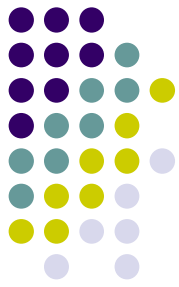# Is there a Fundamental Tradeoff?

Functional
focus

Product/
Market focus

Specialization vs. Integration

This is one of the oldest ideas in management: that there is a tradeoff between "specialization" and "integration" -- an organization cannot have in depth functional knowledge at the same time that it has in depth product knowledge -- (I think of the above as mapping the focus of attention of the firm) --

The "easy" solution is to put in place either teams or the matrix organization. But notice that nothing is for free. Teams will increase coordination, the matrix form will surface conflicts, but choosing to be in an intermediate position will shift the organizations attention. In the worst case, knowledge about one dimension will degrade as key individuals spend all their time on teams. (This seems to have happened to Chrysler, which moved aggressively to adopt a team structure, initially got huge benefits because it was exploiting a strong functional base but which is now experience serious quality problems as functional skills degrade.)
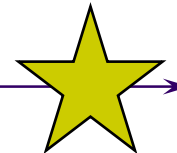
In practice firms tend to develop a "center of gravity"
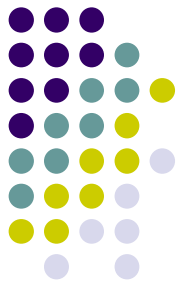
Functional focus
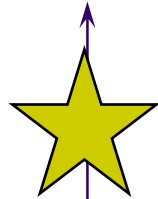
Product focus

In either case
- Power concentrated for more rapid decision making
- Clear reporting relationships
- Coherent incentives & expectations
- Comfortable cultures

Exploring the functional form

- Strengths
  - <u>Centralized expertise</u>: Economies of scale and scope in the function
  - Clear career paths building on individual expertise
  - Clearly defined responsibilities and tasks
- Weaknesses
  - Possible development of functional "silos"
  - Cross functional decisions only possible at the highest levels
  - Possibly weakened incentives: profit & loss remote
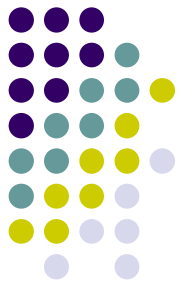
Exploring the Market focused Form
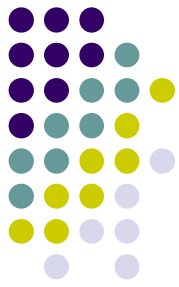
- Strengths
  - Key integrative decisions pushed much further down in the organization
  - Managers much closer to profit and loss

- Weaknesses
  - Duplication of expertise
  - Failure to share key insights across the company
  - Gradual erosion of functional skills

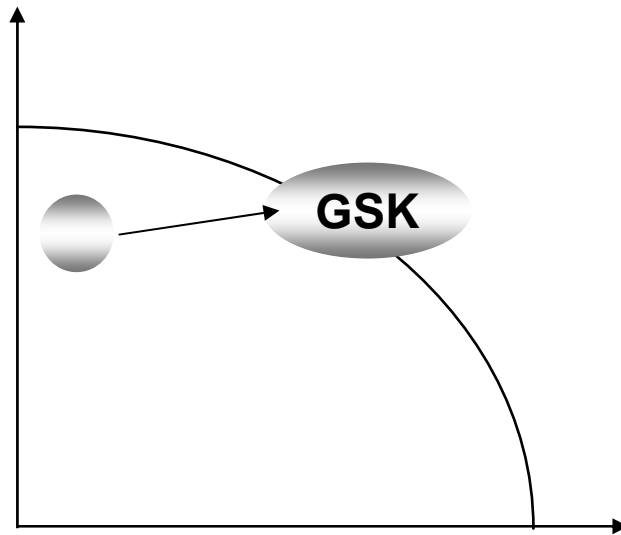# Classic organizational forms have limitations – possible solutions?

- Front/back organizations
- Processes
- Matrices

The Front/Back Organization
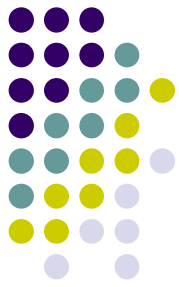# *Can get very complex very quickly*

Functional Focus

GSK
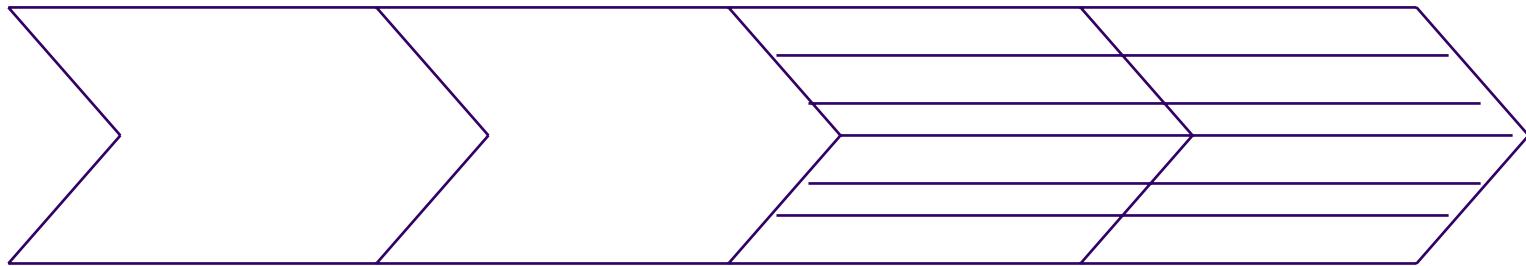
Market focus

Need to be very careful in the design of the interface between the "front" and the "back" - is it an internal transfer market? If not how does it work? How do you let the CEDDs "pull ideas out" of Discovery Research?

Use processes to get the best out of the functions e.g. Wyeth

Functional Focus

Wyeth

Market focus
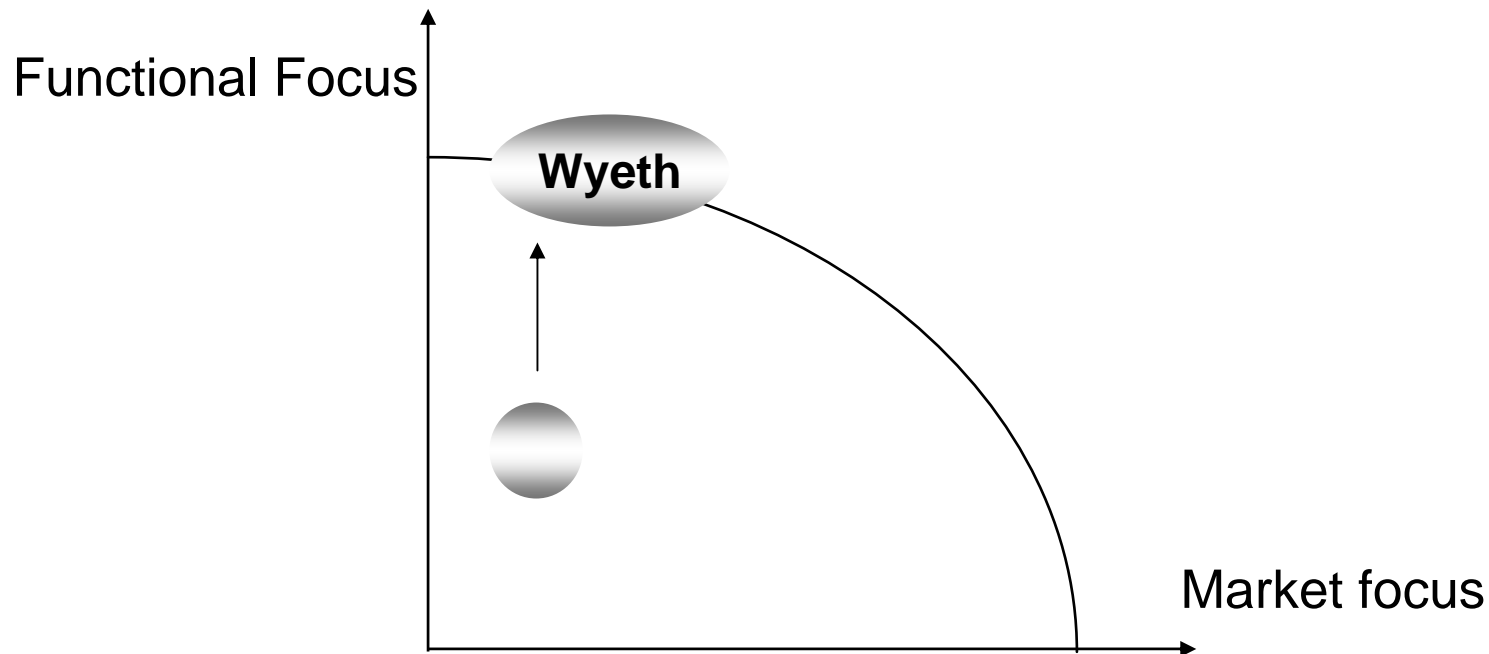
- Align incentives – focus on productivity of each function

- Governance to ensure portfolio quality & hand-offs

- Teams to allow for function-function integration

- Can be very "costly" from a process perspective

The Matrix
Attempt creates intense pressure

Functional focus

Matrix?

Teams?

Organizational Energy

Market focus
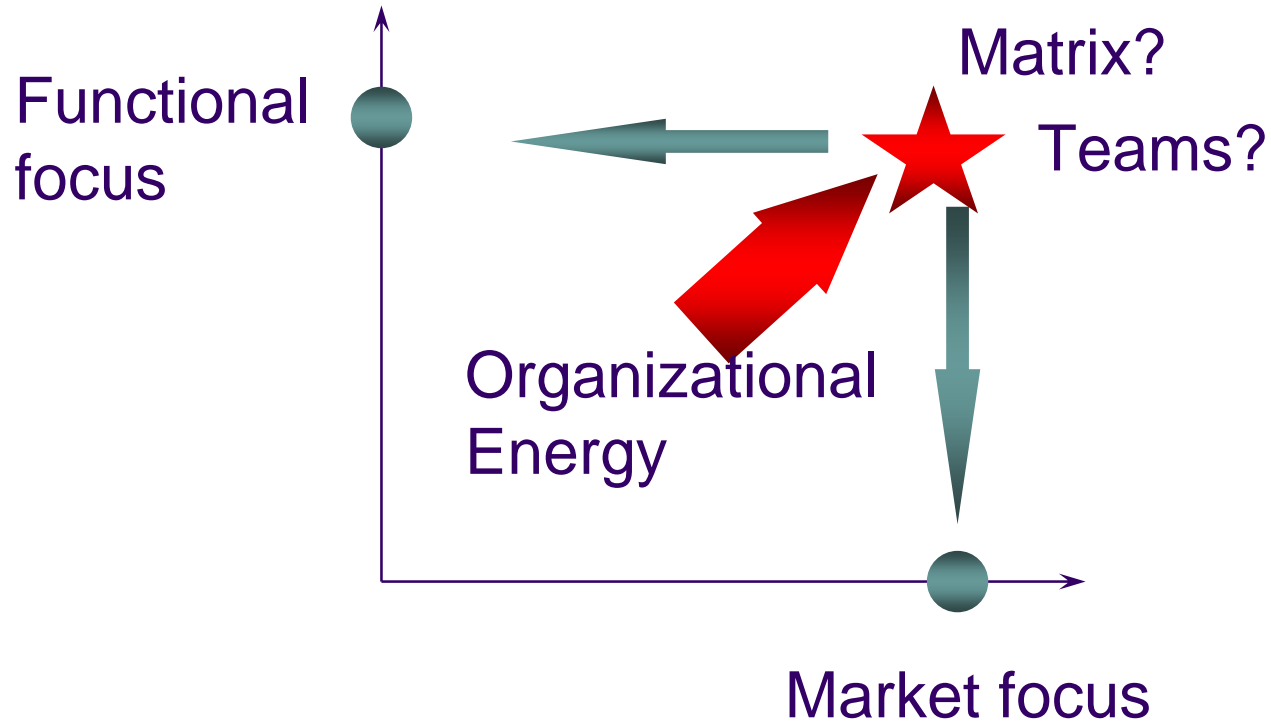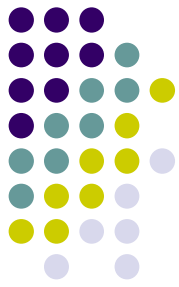
Design choice must be based on a hypothesis

- Hypothesis about the nature of the problem
- Hypothesis about how to solve the problem
- Hypothesis about the source of competitive advantage

- Must also be "do-able"
- Must consider what outcomes would constitute success: - what metrics, what time horizon?

GSK vs. Wyeth

GSK
- Hypothesis – complexity, bureaucracy, lack of autonomy
- Hypothesis: CA thru people

Solution
- CEDDS – balance opportunities for integration with those areas where E of Scale are critical
- Manage interface via "market mechanism" (poorly functioning)
- Incentives should be "high powered' to unleash "entrepreneurial spirit"

WYETH
- Hypothesis – low effort by discovery (& rest of the organization)
- Hypothesis: CA thru processes

Solution
- Shine bright light onto each function to raise output
- Manage quality, portfolio etc, via governance
- Integration issues with cross-functional teams
- Incentives provide for cross-functional collaboration

# In all cases trying to make incentives more "high powered"

- Tachi Yamada trying to make the CEDD incentive structure more like an entrepreneurial firm

- To put it another way – "make pharma more like Hollywood"….

  - Give talented CEDD-heads and their direct reports more power, more control and greater incentives

  BUT

  - How does this committee work for deciding on contributions?

  - Why can't the CEDD head do this? Why not allocate him/her the money & let them decide?

  - No apparent on-going signals – like VC staging to "control" the CEDDs

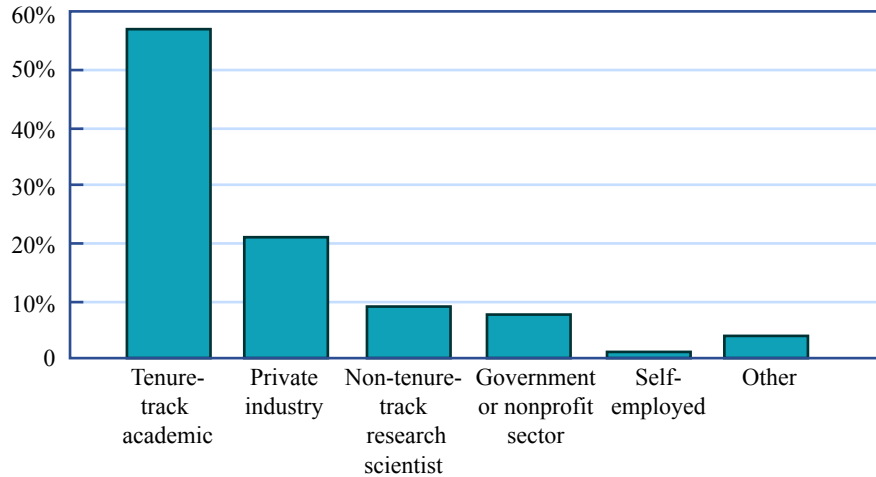# Compensation may not be enough…
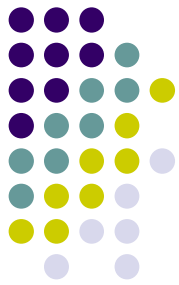
Where They Want to Work

Image by MIT OpenCourseWare.

Mean salaries

2005	2006
Academic $74,000	$78,000 +5.4%
Industry $106,000	$116,000 +9.4%

Image by MIT OpenCourseWare.

Median Salary by Employer Type

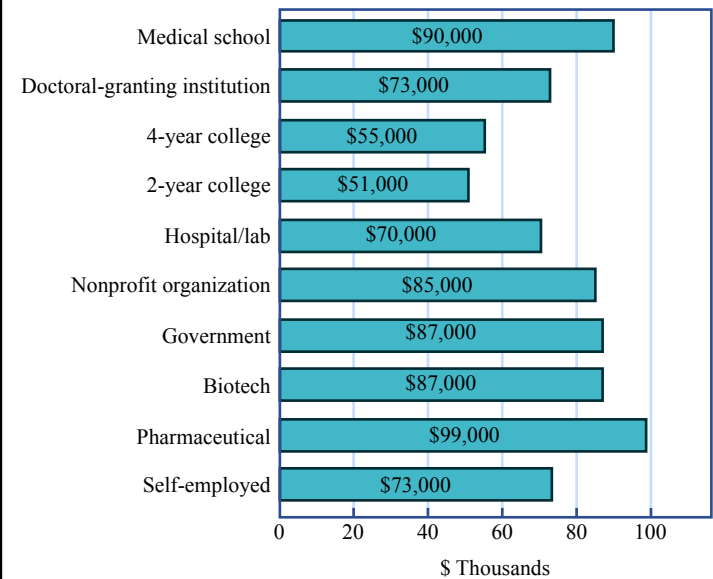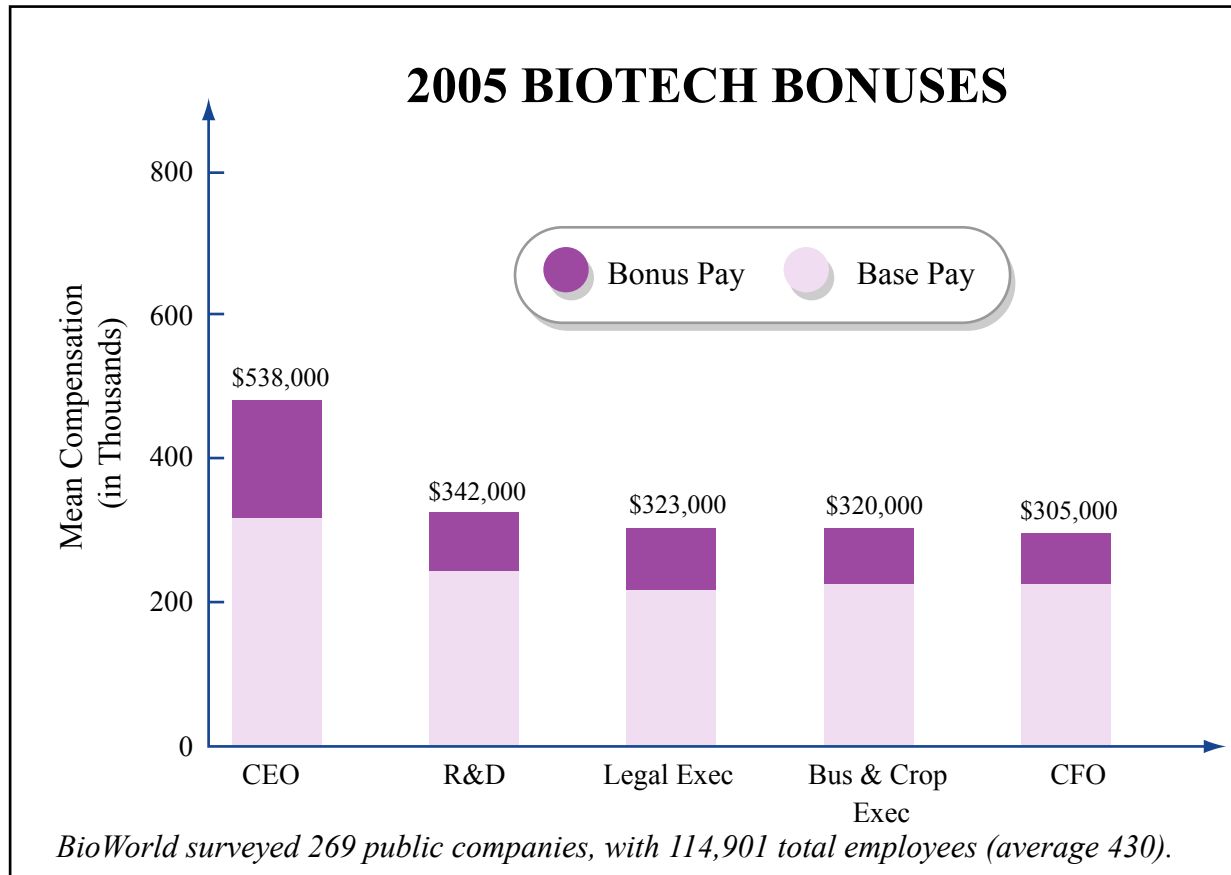| Employer Type	$ Thousands
Medical school	$90,000
Doctoral-granting institution	$73,000
4-year college	$55,000
2-year college	$51,000
Hospital/lab	$70,000
Nonprofit organization	$85,000
Government	$87,000
Biotech	$87,000
Pharmaceutical	$99,000
Self-employed	$73,000

$ Thousands

Image by MIT OpenCourseWare.

Bonuses seem to be important in biotech…

2005 BIOTECH BONUSES

BioWorld surveyed 269 public companies, with 114,901 total employees (average 430).

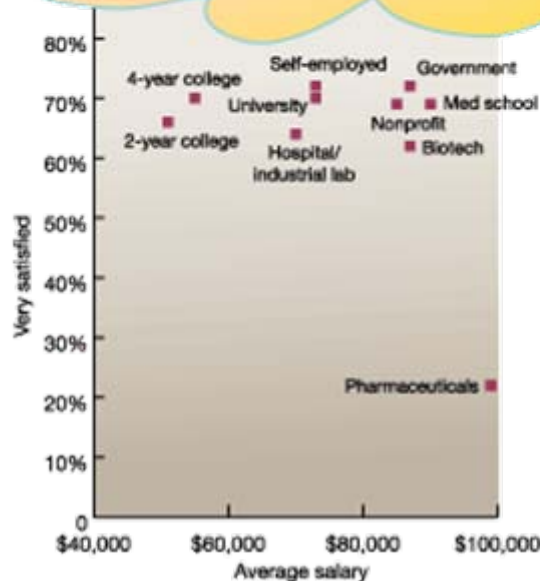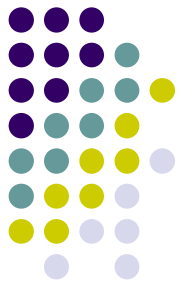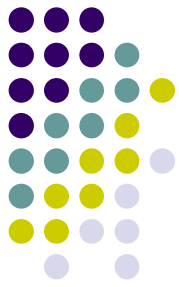# Overall "job satisfaction" also appears to be critical…

Image by MIT OpenCourseWare.

Dissatisfaction driven by several factors:

- Drug development scandals e.g. Vioxx,
- Organizational upheaval caused by M&As and downsizing
- Poor industry image caused by high drug prices e.g. HIV aids drugs
- Low levels of productivity

Data Source: AAAS survey of life scientists, 2005

Class 13 – IBM-Linux

- <u>Case:</u> IBM attempting to find a way to work with external software development community

- <u>Key Questions</u>:
  - What sort of structure works best?
  - What types of incentives do programmers need?
    - How do you deal with the loss of control?