Why Organizations Come to Academia

- Expose management to leading-edge thinking, technology
- Gain insight from internationally-recognized experts
- Strengthen strategic decision-making:
  - development of new products and processes
  - implementation of innovative management practices
  - achievement of effective growth strategies
- Create research synergies
- Recruit future company leaders
Solving Real World Problems

- MIT researchers focus on discoveries of real practical impact, strong commercial value

- Vibrant patenting/licensing activity
  - 632 new invention disclosures FY 2011
  - $85 million total licensing revenue
  - 168 patents filed, 79 licenses granted

- 2009 Kauffman Foundation Entrepreneurship Study
  - 25,000+ companies founded by MIT alums
  - 3.3+ million jobs
  - $2 trillion in annual world sales

- 692 companies provided R&D/gift support in FY 2011
  - 46 companies funded $1M+
  - 154 companies funded $100K - $1M
US universities are estimated to perform $57.5 billion in R&D in 2011.
- 1.9% increase over 2010.
- Extremely stable distribution of support: 60% federal, 20% internal, and 20% industrial

Academia continues to perform more than half of the nation’s total basic research.
- Basic research drives new knowledge, innovation.
- Industry is weakening its concentration in support of basic research.

Federal government continues to provide the majority of funding for academic R&D.
- Estimated federal share of academic R&D funding in 2011 is 62.8%.
- This represents a 0.6% increase from 2010.

Estimated industry funding of academic R&D is $2.8 billion in 2011.
- This represents a 5.9% increase from 2010.
- Interest continues to grow in participating in collaborative research programs involving industry and universities.
- Industrial support accounts for 4.8% of total R&D performed by academia.

Academic R&D will account for an estimated 14.2% of total R&D performed in 2011.

Industry continues to decrease its support of basic research.
- Trend is further shift of resources toward shorter-term, nearer-benefit development efforts at the expense of research with longer time horizons that seek transformational innovations and technologies.
On-Campus R&D: $661 million

- **HHS**: 21%
- **DOD**: 10%
- **DOE**: 12%
- **NSF**: 9%
- **Other U.S. Gov't**: 5%
- **Lincoln Labs**: 3%
- **State, Local & Foreign Governments**: 5%
- **Industry Sponsored R&D**: $123 million (19%)
- **Non-**
- **Foundation**
- **Other**
- **4%**

**Total Funding**

$123 million (19%)
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<th>Research Peer-to-Peer Relationship</th>
<th>Customer-Vendor Relationship</th>
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<td>• Seeks mutual intellectual exchange</td>
<td>• Seeks deliverables</td>
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<tr>
<td>• Recognizes that fundamental research is inherently risky</td>
<td>• Constrains mid-course corrections on unexpected research developments; predefined deliverables and outcomes often cannot be specified at the outset</td>
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<tr>
<td>• Recognizes that there may be broader business opportunities created by the research</td>
<td>• Research results, which are speculative, cannot have a predetermined fair market value determined</td>
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<td>• Values the university’s contribution to the research; existing expertise and background intellectual property, faculty and student support, and research infrastructure</td>
<td>• Precludes the university’s researchers from engaging any further in the sponsor’s area of interest, even if that future research were only in part based on the current research</td>
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The goal of fundamental research is mutual learning, shared effectively by both parties and exploitable in the framework of its mission.

The peer-to-peer relationship model supports this goal of mutual learning and knowledge transfer.

The most successful sponsored research agreements recognize the benefits of sharing the learning from the research between the university and sponsor; within society (i.e. through publications); while protecting the potential commercial value of research innovations through patents and licensing.

A customer-vendor relationship cannot provide structural support for these goals.
MIT poses a complex challenge:

- how to find the right experts?
- how to raise faculty awareness of your research objectives?
- how to identify the right programs?
- how to organize the right interactions?

MIT has several offices to help the process:

- Office of Sponsored Programs (for research contracting)
- Technology Licensing Office (for licensing)

Neither of these offices helps industry initiate collaborations
Corporate Access to MIT

- 205 of the world’s leading companies partner with the Industrial Liaison Program to advance research agendas at MIT.

- One third of ILP member companies sponsor research at MIT for a total of $55 million (49.7% of all industry sponsored research).

- In FY11, 988 faculty/researchers interacted with ILP, participating in 1308 visits on and off campus, and with 3440 ILP member representatives.
What is the Industrial Liaison Program?

- The ILP is the chief gateway and guide to MIT.

- Provides expert counsel on building productive partnerships

- Develops customized, cost effective programs
  - assess, address strategic research needs
  - facilitate faculty, researcher interactions
  - monitor emerging technologies and innovative management practices
Typical Benefits Companies Receive

- Monitor emerging/disruptive technologies
- Discover new technologies to strengthen existing businesses
- Validate or invalidate key investment decisions/new product development
- Solve short term technical problems
- Identify new industry partners
- Use faculty for advice
- Participate in new industry standards setting
- Train employees
- Recruit new employees
The Seven Keys to Collaboration Success

- Define the project’s strategic context as part of the selection process
- Select boundary-spanning project managers with three key attributes
  - In-depth knowledge of the technology needs in the field
  - The inclination to network across functional and organizational boundaries
  - The ability to make connections between research and opportunities for product applications
- Share with the university team the vision of how the collaboration can help the company
- Invest in long-term relationships
The Seven Keys to Collaboration Success

- Establish strong communication linkage with the university team
- Build broad awareness of the project within the organization
- Support the work internally both during the contract and after, until the research can be exploited

Source: “Best Practices for Industry-University Collaboration”
J. Peruze, E. Calder, E. Greitzer, W. Lucas
Sloan Management Review
Vol. 51, No. 4, Summer 2010
Best Practices for ILP Members

- Establish clear lines of responsibility for the MIT relationship
- Visit MIT regularly
- Think broadly
- Engage MIT faculty at a peer level
- Work with MIT students
- Bring challenging problems
- Be practical when negotiating
- Make research truly collaborative
- Meet regularly with the TLO
- Consider larger executive briefings at MIT
Thank you