

Building University Entrepreneurial Impact: A Case Study of MIT

Edward B. Roberts

MIT Sloan School of Management

MIT Center for Transportation & Logistics

SCALE Centers meeting

October 27, 2010

For more information, access:

Roberts & Eesley, “Entrepreneurial Impact: The Role of MIT”,

<http://entrepreneurship.mit.edu/impact.php>

Table 1. Estimated Employment and Sales for All Active MIT Alumni Companies^o

Jobs	Percent of Companies	Median Employees	Median Sales (\$Millions)	Estimated Total Employees	Estimated Total Sales (\$Millions)
More than 10,000	0.3%	15,000	1,523	1,339,361	1,389,075
1,000-10,000	1.8%	1,927	308	1,043,932	235,532
Less than 1,000	97.9%	39	<1	900,001	226,671
Total	100.0%	155	<1	3,283,294	1,851,278

University alumni impact is dramatically more important than direct tech transfer!

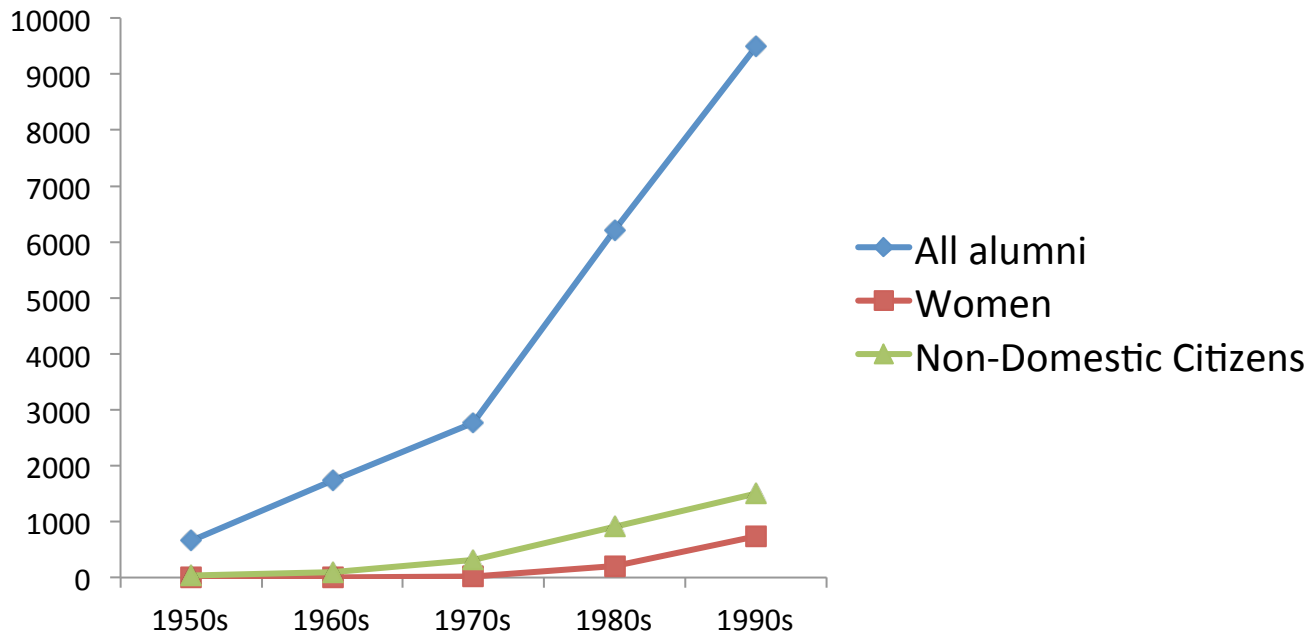
But only ~2% (~540) of MIT-alumni companies provide most of the economic impact (>1000 jobs each)

^oUnderlying data from 2003 MIT survey of all living alumni, updated to 2006; ~25,800 active companies. Table #s are from “*Entrepreneurial Impact: The Role of MIT*”

The economic impact is nationwide (and global), going to everyplace where alumni live and work. Estimated jobs (in 2006) created by firms founded by living MIT alumni that were headquartered in these states:

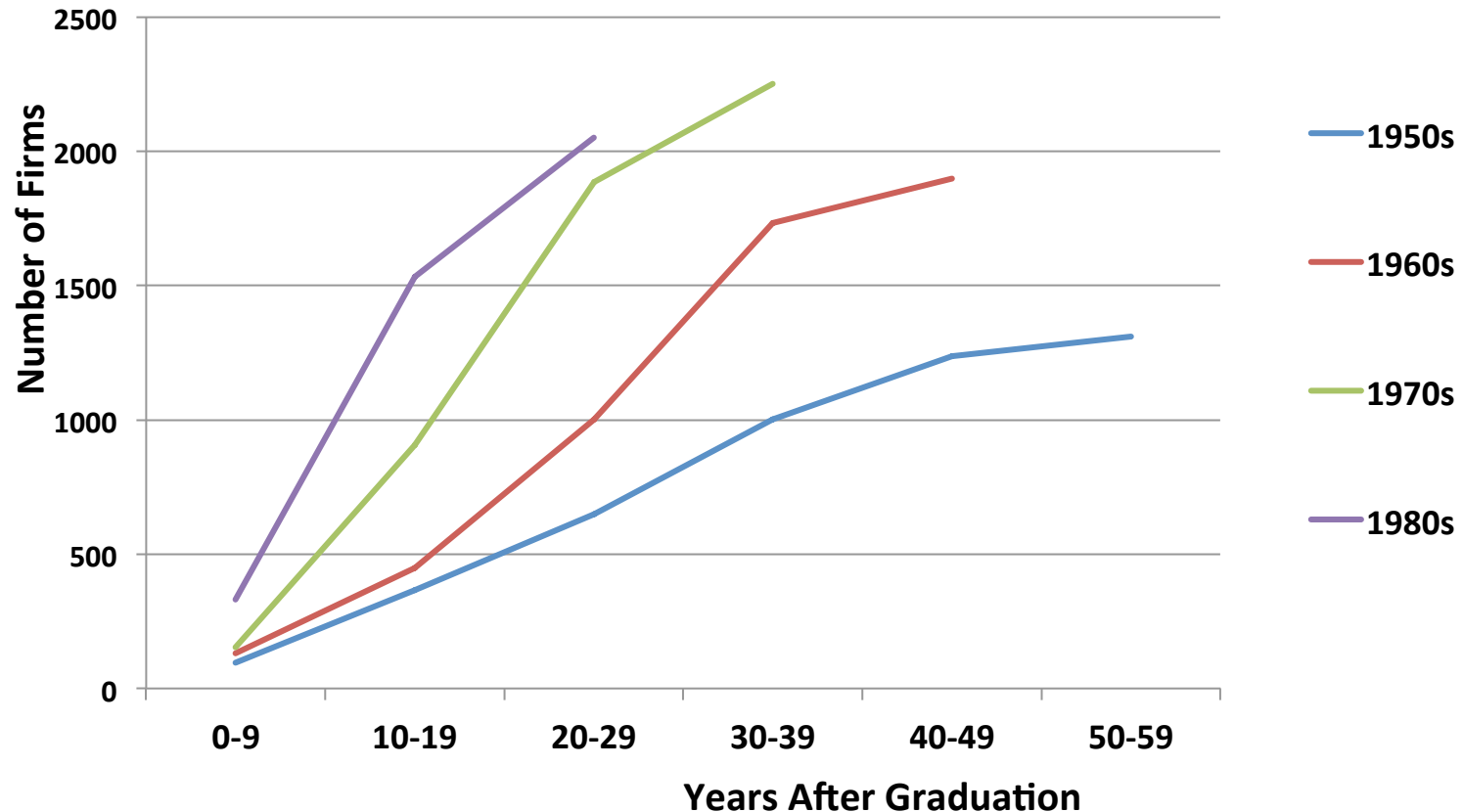
Massachusetts	998,000
California	526,000
New York	231,000
Texas	184,000
Virginia	136,000
Fifteen other states	>10,000 each
Only eleven states	< 1,000 each

Estimated Number of “First-Time” Firms Founded Each Decade by MIT Alumni – ever onward and upward



Cumulative Firms Founded

(Data shown for Bachelors Degrees only)



More entrepreneurs have emerged from each successive decade of graduates, and have started their companies sooner and at younger ages.

Table 3. Median Age of Founders When They Established Their First Firms

Decade of Graduation	1950s	1960s	1970s	1980s	1990s
All	40.5	39	35	32	28
Non-U.S. Citizens	38	35.5	36.5	32	29
Women	42	41	40	35	29

Table 2. Estimated Number of Companies Founded by “Foreign-Student” Alumni

Current Location of Companies	Total	Manufacturing
United States	2,340	673
Europe	790	51
Latin America	495	63
Asia	342	43

~30% of foreign-student alumni become entrepreneurs vs. ~20% of U.S.-born alumni; half of the foreign-student entrepreneurs remain in the U.S.

Table 4. One-Time and Repeat (“Serial”) Founders by Decade of Graduation (percent)

		Decade							
		1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s
Total # Firms Founded	1	67	61	56	54	48	57	61	59
	2	0	11	21	20	23	22	23	28
	3	0	9	10	11	16	11	9	9
	4	11	8	7	7	6	5	3	3
	5+	22	11	7	9	7	5	4	0
% Repeat		33	39	44	46	52	43	39	41

Over time, the number of multiple companies founded per MIT alumnus has been growing, thereby creating dramatically increased economic impact per alumni entrepreneur.

What Causes All This??

The Entrepreneurial Ecosystem at MIT has grown impressively in its components and impact over the years

Underlying culture (>1861; motto – “Mens et Manus”, mind and hand), history, role models, and policies

Alumni initiatives: nationwide Young Alumni Entrepreneurship seminars (1969-1971); MIT Enterprise Forum (1978)

Re-oriented Technology Licensing Office (1985)

MIT Entrepreneurship Center (1990):

Classes (with a consistent philosophy): 1 to 30 in 15 years

Clubs, including MIT \$100K Business Plan Competition (1990)

Conferences, and many forms of internal and external networking

Recent broadening and growth in MIT entrepreneurship institutions

Venture Mentoring Service (2000)

MIT Deshpande Center (2002)

MIT Sloan Entrepreneurship & Innovation MBA Track (2006)

Approach to Entrepreneurship Education: Build upon “Mens et Manus”

“Dual track” faculty: theory and practice, academicians and successful entrepreneurs & VCs; paired in classes whenever possible

Integrate class enrollments across campus: i.e., management students with scientists and engineers; locate classes centrally

Place heavy emphasis upon real-world mixed team projects:

a. Product level: Innovation Teams, commercialization plans for MIT Deshpande Center emerging research projects

Similar courses focused upon Energy Ventures, new Media opportunities, nanotech, medical devices, ventures for developing countries

b. Firm level: E-Lab and G-Lab (half of all MIT Sloan MBAs) projects with local and global young entrepreneurial companies

c. Startups: strongly encourage participation in MIT \$100K competition

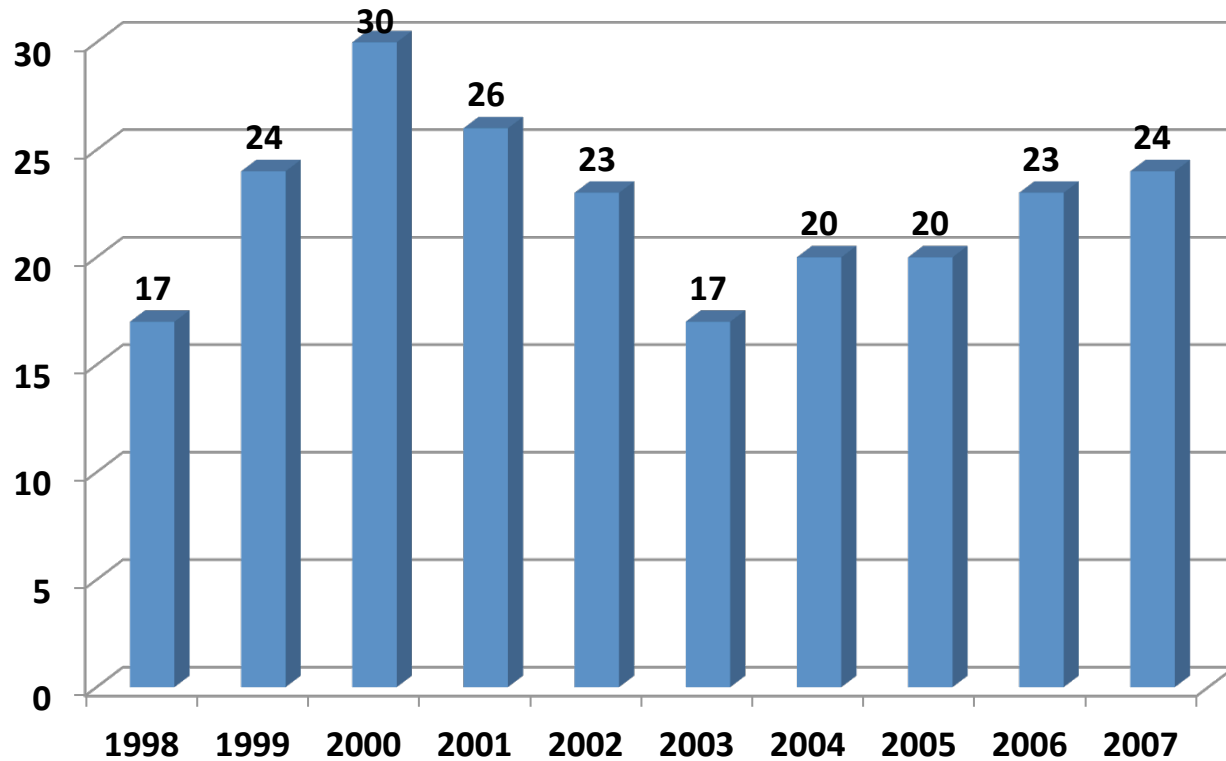
Table 14. Some University Factors Important to Venture Founding and Their Growing Influence (from limited sample only)

Proportion Rating University Factors as Important in Venture Founding* (%)					
Graduation Decade	1950s	1960s	1970s	1980s	1990s
MIT Business Plan Competition	0	1	0	3	30
MIT Entrepreneurship Center	3	1	2	1	12
MIT's Entrepreneurial Network	26	25	32	40	50
Technology Licensing Office	1	0	2	4	11

***Respondents could check all relevant categories.**

Number of Startup Firms Licensed by TLO

(MIT TLO usually #1 nationally among universities for tech transfer, but accounts for only a small fraction of alumni-founded startups)



Widespread Participation in Business Plan (\$10-50-100K) Competitions

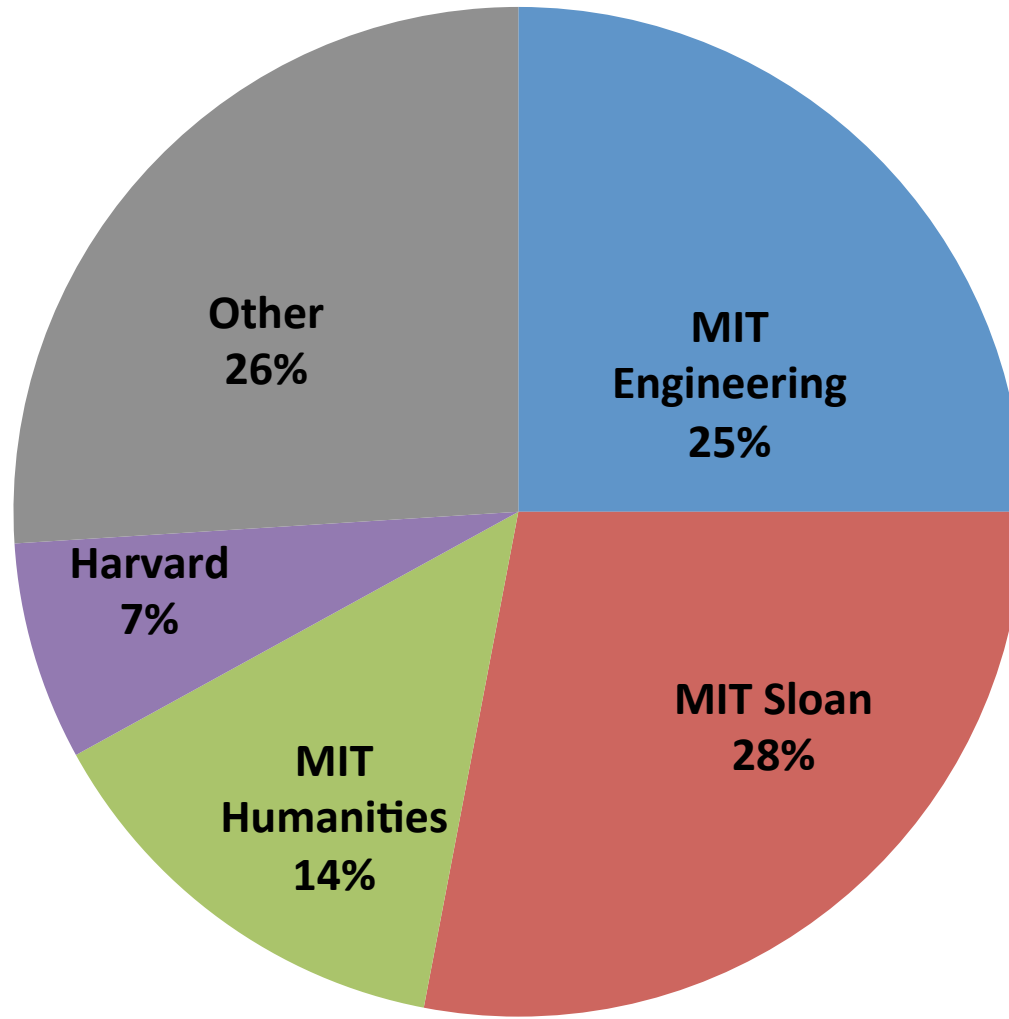


Table 18. Some Venturing Mentoring Service Data (mid-2007 report)

Ventures served since 2000	469
Entrepreneurs served	932
Companies formed	88
Funding raised by companies	\$350M +
Current mentor pool	121
Mentoring hours (just in the previous 12 months)	More than 9,000

Enhancing the University's Entrepreneurial Impact: Recommendations

**Institutional leadership critical, with senior role models if possible
Remove barriers to entrepreneurship from university rules and regulations;**

perhaps provide incentives

**If neighboring support infrastructure is weak, university may need to
provide supplemental “incubation”, and even investment, resources**

Engage alumni in university ties with labs, faculty and students

**Build internal entrepreneurship education programs, across disciplines,
with integrated academic and practitioner faculty participants**

Create student business plan competitions

**Orient university licensing office toward encouragement of new
enterprises**

**Adapt to your own settings models comparable to MIT's Venture
Mentoring Center, Deshpande Center, and MIT Sloan Entrepreneurship
& Innovation MBA track.**