

University-Industry Relationships in Entrepreneurship in IT

Scott Shane
Case Western Reserve University
April 19, 2007

Focus of My Remarks

- ◆ My comments focus on university-industry relationships in entrepreneurship IT
- ◆ Other panelists who know more about other aspects of university-industry relationships to comment on those

The Context: Entrepreneurship in IT Industry

- The IT industry is phenomenally entrepreneurial...
- ◆ 4.2% of all "computer industry" start-ups from 1982-2002 make Inc 500 vs. less than 0.1% of average start-up
- ◆ 44% of all venture capital dollars have gone to IT and computer related technologies
- ◆ From 1980-2006, one-third of all IPOs
- ◆ From 1980-2006, IT companies made up 61% of VC-backed IPOs

Universities are Important to Entrepreneurship in IT

- ◆ Many important IT-related start-ups emerged from universities (e.g., Google, Yahoo, Lycos, Akamai, etc...)
- ◆ Significant investments in university research by young IT companies
- ◆ Young IT companies hire many university graduates

But University-Industry Relationships in Entrepreneurship Relatively Unimportant

- ◆ Surveys of R&D managers report university research as relatively unimportant to industry
- ◆ University share of patents in IT lower than in other industries
- ◆ University research (published papers) is less important to industry R&D than in many industries
- ◆ Proportion of university spin-off companies in IT that IPO are lower and the proportion that fail are higher than other industries
- ◆ Equity holdings of university researchers in young IT companies low relative to other industries

Why is University Activity Less Important to Entrepreneurship in IT?

- ◆ Licensing of inventions relatively unimportant because patents aren't that important
- ◆ University researcher-led spin-offs more important because of market failure
- ◆ IT is not "close to science"; less basic research
- ◆ Locus of "cutting edge" less concentrated in academia

Caveats: The Problem of Measurement

- ◆ Formal technology transfer measures patented inventions; non-patented inventions more common in IT
- ◆ "Cheating" on disclosure is easier in software
- ◆ Research funding patterns are driven by the cost of research and sources of funding (NIH vs. NSF)
- ◆ Publications are of differential importance in transferring knowledge across fields

Stay Tuned...

- ◆ EMKF is funding a survey of all faculty at Carnegie I and II universities in all NRC listed departments this summer to assess different kinds of commercial and entrepreneurial activities
- ◆ It will help address the measurement problem
- ◆ Next year, I will have better answers about the level of university involvement in entrepreneurial activity