

University-Related Startup Companies

- What is a University startup, and why are they growing?
- Why is it important?



Kris Burton
Department of Industrial Cooperation
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What is a University Startup?

Could be a company:

- That is founded on licensed university technology, or by faculty, students, staff around their research
- In which faculty serve an important scientific role, or drive initial product development based on technical expertise

A community enterprise, not a university company

What is a University Startup?

Not all are formal university outputs: impact is greater than statistics

- Assists startups when no university IP is involved
- Steers entrepreneurs to capable partners
- Aides with business planning, financing options and legal resources
- Secondary tech transfer

Growth in University Startups

Since 1980, more than 3,800 companies have formed out of university licenses. It is clear that entrepreneurship is widespread in the United States, as roughly 6 percent of all adults are involved in starting new firms.

Magnus Karlsson, "Commercialization of Research Results in the United States: An Overview of Federal and Academic Technology Transfer" (Swedish Institute for Growth Policy Studies [ITPS], 2004).

Drivers for growth of Startups

- 1980 Bayh-Dole, *Diamond v. Chakrabarty*
- Increase in state and university support
- Research agglomerations and tech parks
- Funding and support mechanisms: SBIR/STTR, business incubators, research foundations, state programs (MTI)
- Interdisciplinary entrepreneurship programs – not just in business schools, extensions to community

Why university startups are important to the economy...

- Early technologies may not be transferable to large firms
- Generate wealth
- Create jobs
- Attract and keep talent in the region
- Produce new products and services
- Attract new investment and research
- Diversify the economy
- **Generally benefit public in economic and social ways**

...and important to the university

- Demonstrate relevance of research and academic programs
- Companies may provide sponsored research dollars
- Entrepreneurs may serve as advisors for university programs and new entrepreneurs
- Many faculty, students and researchers have entrepreneurial interest
- Faculty inspired and energized as teachers
- University incubators serve as entrepreneurship teaching lab for students and community
- Small equity stakes can pay off later

Importance of Entrepreneurs

“Good capitalism” is a blend of both “entrepreneurial” and “big-firm” capitalism providing the structural support to nurture and commercialize innovative products.¹

- Direct economic growth through new firms
- Increase productivity through technological change
- Manipulate existing technology and services, which speeds up the learning curve
- Increase competition – innovation, better prices, better products

¹ William J. Baumol, Robert E. Litan, and Carl J. Schramm, *Good Capitalism, Bad Capitalism, and the Economics of Growth and Prosperity* (New Haven: Yale University Press, 2007).

Entrepreneurship

“The ability to garner the required resources and overcome all impediments by seizing new business opportunities is what defines entrepreneurship. Entrepreneurs are willing to risk financial uncertainty in order to create something from their ideas.”

State Technology and Science Index Enduring Lessons for the Intangible Economy. Milken Institute, June 2008.

Why entrepreneurs?

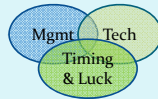
- Inventions have no economic benefit until they are implemented as an innovation ...when an entrepreneur finds financing, creates a business model, and builds commercial value.
- "Entrepreneurs are central to the process of creative destruction, since they are the individuals who bring the new technologies and the new concepts into active commercial use. They are the change agents of capitalism." MIT economist Lester Thurow¹
- 1995-2000, businesses <100 employees created 75% of all new US jobs.²
- 15% of the fastest-growing new firms created > 90% of net new job creation.²

1. Lester C. Thurow, *Building Wealth: The New Rules for Individuals, Companies, and Nations in a Knowledge-Based Economy* (New York: Harper Collins Publishers, 1999).

2. Chris Edwards, "Entrepreneurs Creating the New Economy," ed. Joint Economic Committee Staff Report (2000).

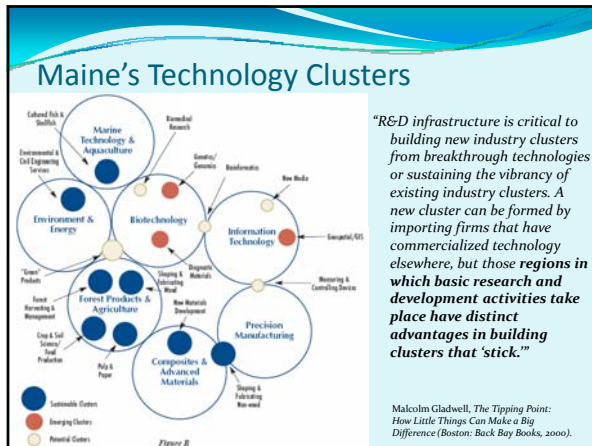
When to form a Startup

- Platform and/or disruptive technology
- Undeveloped commercial market: no licensee
- Development cycle is too long to attract established firms
- Inventor's experience and expertise is critical
- Necessary assets other than technology are available
- Low cost / risk for customers to adopt new technology
- Motivated, dedicated entrepreneur



Growing University Startups

- Build the research base. Industry sponsors >70% of US R&D but universities support basic research: long-term, fundamental knowledge and scientific discovery
- Grow an entrepreneurial community – science is not enough
- Seek diverse sources of funding – government grants, SBIR/STTR, angel and venture capital, sponsored research
- Build industry / startup clusters from academic strengths



- ## What the University can do
- Educate and publicize
 - Train students in business planning and market research, specifically lab-to-market challenges
 - Encourage student entrepreneurship
 - Nurture serial entrepreneurs
 - Grow clusters, but don't ignore outliers
 - DIC staff: set up university/industry relations, manage IP and policies, support financing, provide encouragement and reality checks.

- ## UMaine-related startups
- More than 20 startup companies through licensing UMaine technology, 2002 to present.
 - So far this year, 3 new startups, one pending.
 - Additional student startups, community startups
 - Approximately 200 companies served each year through contract R&D

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Sponsored Research and Tech Transfer

- Research Agreements
- IP Policy
- COI Management
- IP Management
- Licensing
- Financing Support

Student Innovation Center

- K-12 programs
- Entrepreneurship education
- Business space for student startups
- Seminars and workshops for UMaine and community

Target Technology Center

- Shared facility with office and lab space
- Community resource
- Seminars and workshops
- Assistance with business plans, legal resources, networking, etc.
