

Course title: Creating Innovative Business Models

Lecture 6. Startup company

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Introduction

- Since 2000 large companies have been downsizing research arms
- Universities, Hospitals, & Research Institutions had \$48.8 billion in research expenditures in 2007
- Universities have begun to fill the void due to research cutbacks in the private sector

Why are start-ups sometimes needed?

- If an individual technology cannot be licensed piecemeal, a startup is sometimes the only alternative
- A startup is a way to translate academic inventions into commercial goods and services that benefit the public
- Also serve as an engine for local economic development and job creation

What percentage of inventions become start-ups?

- Approximately 5-10% of inventions meet the criteria necessary to become a start-up company
- At BC, the actual number is 0-2 start-ups per year depending on the number of invention disclosures and the types of technology disclosed

What does one need to have a successful start-up company?

- Not an easy question to answer
- A great idea does not necessarily lead to a successful company
- According to the Startup Company Bible:
 - “it is ultimately the quality of the management team that builds successful companies rather than their technology”

Considerations

- Need to raise capital to fund the development of the technology
- Is there a large addressable market?
- Inventor will have obligations at the University, therefore need to recruit an initial management team
- What are the terms of license agreement between the university and the company?

Where does the funding come from?

Source of Funding	FY 2007	FY 2006
	Number Checked Yes as One of Sources of Funding	
No External Funding	86	57
Own Institution	51	26
SBIR/STTR	42	32
Friends and Family	135	94
Individual Angels	82	49
Angel Network	32	26
State Funding	63	36
Venture Capital	88	85
Corporate Partner	33	25
Other	47	28
Total Start-ups Formed	555	462
In Home State	402	344

What are Angel Investors?

- Invest in companies during the high risk seed stage and very early stage
- Tend to be individuals investing their own money as opposed to VCs that manage the money invested in by multiple people
- Fill in the gap between “friends & family” and VC

What is Venture Capital (VC)?

- A type of private equity typically provided to early-stage, high-potential, growth companies in the interest of generating a return
 - Initial Public Offering (IPO)
 - Sale of the company
- Venture capital fund is a pooled investment vehicle that primarily invests the capital of third party investors in enterprises that are too risky for standard capital markets or bank loans

Know Your Venture Capitalists

- Venture partner typically receive 2% of the funds' committed capital as a management fee + an additional 20% of the funds' net profits
- The structure of the VC fund determines the type of inventions they are interested in
- VC funds have a finite lifespan of only a few years
 - University research business plans often miss the mark when it comes to addressing the question of timing
 - VCs typically add 2-3 years to the stated time to market for a university venture

Venture Funds Continued

- Software and technology ~5 years
- Life sciences ~7-10 years
- VCs assess investments in terms of risk
 - A better understanding of a potential company's risk profile creates a stronger pitch for investors
 - Inexperienced management teams and unrealistic claims can turn off would be investors
- VC funds are not ATMS

Supporting & Educating Entrepreneurs

- The person behind an idea is as important as the idea itself
- Introducing VCs to talented people can be more powerful than specific innovations
- The role of the inventor will depend on the maturity of the company
 - Should be prepared to follow their technology from the lab to the start up but not necessarily leave the University (ex. Member of the Scientific Advisory board)
 - But will probably not run the company through its maturation

Supporting & Educating Entrepreneurs Continued

- Faculty & students' relative inexperience in founding, growing, and managing successful companies can be an impediment
- Faculty members should reach out at others at universities who have experience in the spinout process and whose experiences are similar

Streamlining the Bureaucracy

- TT&L Office can help by acting as a business intermediary
 - “Technology transfer should screen and package the technology, make the introduction, then step back and get out of the way” – Partner, Technology Venture Fund in Southern California
- Investors dislike the defensive or “fortress” mentality of attorneys
 - Want a genuine effort to make the deal process smooth and expedient

Access & Visibility

- Business plans from Universities are usually not as well-developed in terms of what matters most VCs
- Packaging ideas in VC-friendly ways
 - Eliminate “academese”
 - Be able to discuss ideas in business rather than technological terms
 - Potential business’ capital requirements
 - Path to market
 - Expected return on investment
 - Avoid “solutions in search of problems”

Access & Visibility Continued

- Be able to proactively approach investors with succinct, summarized information about potential deals
 - “elevator pitch” – be able to describe your company in 2 min or less
- Distinguish licensing deals from startups

Culture of Innovation

- Universities should have an “ecosystem of entrepreneurship” – top to bottom culture that breeds and fosters innovation
- Offer university resources to spinouts: continued access to cutting-edge lab facilities for startups is extremely appealing to VCs.
- Universities should leverage visibility by partnering with other universities
- Build on each other’s successes rather than being competitors

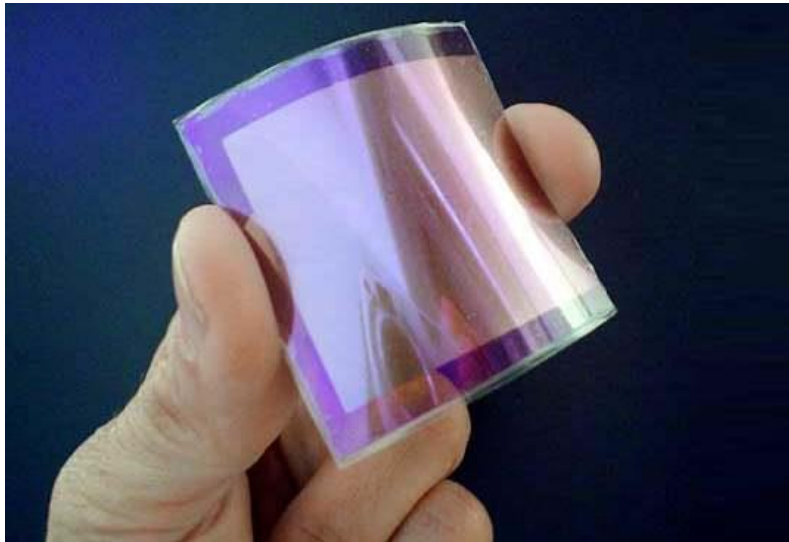
Local Venture Capital Firms

- 103 Firms listed in the 2009 New England Technology Directory
- Flagship Ventures:
 - Founded in 2000 in Cambridge, MA
 - 3 principle business sectors: therapeutics, life science tools & diagnostics, and bioenergy/cleantech
- North Bridge Venture Partners
 - Early stage VC in firm based in Boston, MA & San Mateo, CA.
 - Industry focus on communications, materials & manufacturing system, semiconductors, & software.

2007 AUTM Survey

- In research institutions:
 - 555 new startup companies formed
 - 3,388 current startup companies in business
- AxoGenTM (University of Florida): Nerve regeneration start-up founded in 2002, first product AvanceTM used for the treatment of long-gap nerve injuries in 2007

BC Startup: Solasta



- Founded in 2006
- Developed ultra-high efficiency solar cells using nanoscale elements
- Won an undisclosed amount of funding from Kleiner Perkins Caufield & Byers
- Will receive 2.6 million from the U.S. Department of Energy

Approaches to Strategic Planning

1. Economic Imperative
2. Administrative Coordination
3. Political Imperative
4. Quality Imperative

(1) Economic Imperative:

- **Economic imperative** focused MNCs employ worldwide strategy based on cost leadership, differentiation, and segmentation
- Strategy also used when product is regarded as generic and therefore is not sold on name brand or support service
- Often sell products for which large portion of value is added in upstream activities of industry value chain
 - Research and development
 - Manufacturing
 - Distribution

(2) Political Imperative

- MNCs using **political imperative** are country-responsive; approach designed to protect local market niches
- These MNCs often use country-centered or multi-domestic strategy
- Success of product or service depends heavily on
 - Marketing
 - Sales
 - Service

(3) Quality Imperative

- Quality imperative has 2 paths
 - Change in attitudes and raising of expectations for service quality
 - Implementation of management practices designed to make quality improvement an ongoing process
 - TQM Total Quality Management (see next slide)

Total Quality Management

- Cross-train personnel to do jobs of all members in work group
- Process re-engineering designed to help identify/eliminate redundant tasks
- Reward system designed to reinforce quality performance
- Quality operationalized by meeting or exceeding customer expectations
- Quality strategy formulated at top management level and diffused through organization
- TQM techniques: traditional inspection and statistical quality control; cutting edge Human Resource Management techniques such as self-managing teams and empowerment

(4) Administrative Coordination Imperative

- MNC makes strategic decisions based on merits of individual situation rather than predetermined economic or political strategy
- Least common approach to formulation and implementation of strategy
- Many large MNCs work to combine all 4 of the approaches to strategic planning

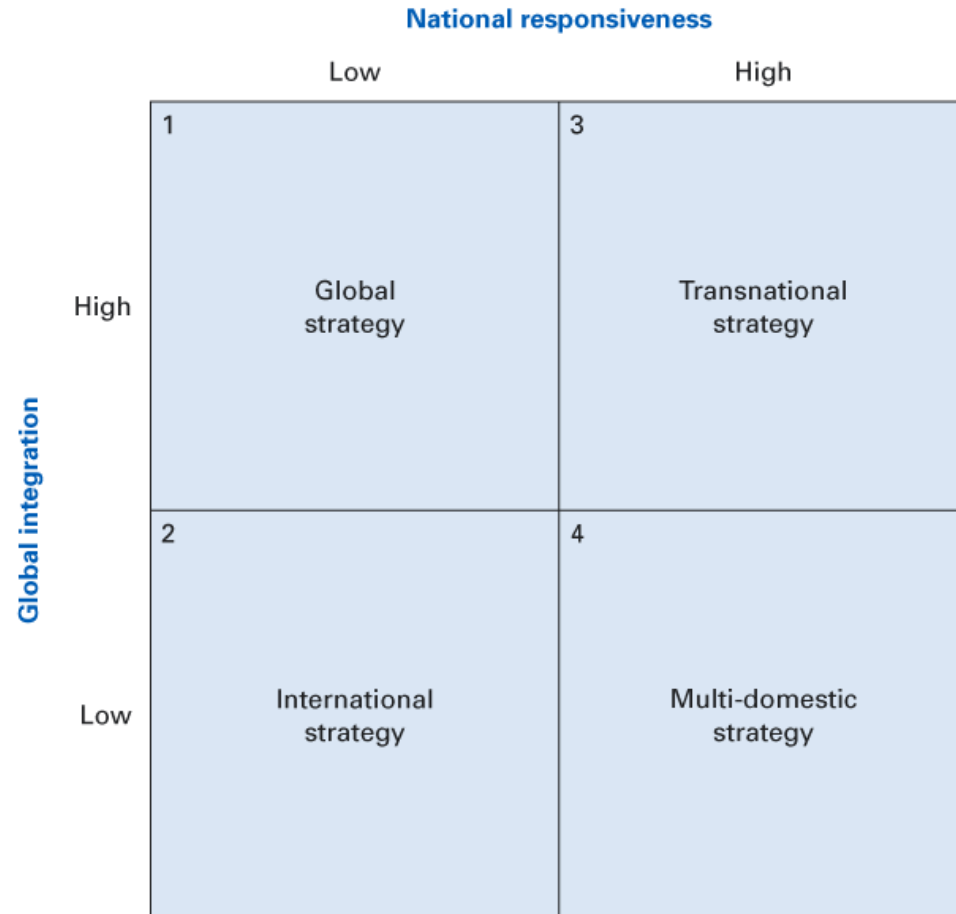
Global vs. Regional Strategies

- Fundamental Tension: The globalization vs. national responsiveness conflict.
- **Global integration:** Production and distribution of products and services of a homogenous type and quality on a worldwide basis
- **National responsiveness:** need to understand different consumer tastes in segmented regional markets and respond to different national standards and regulations imposed by autonomous governments and agencies

Global Integration vs. National Responsiveness

Figure 8-1

**Global Integration
vs. National
Responsiveness**



Source: Adapted from information in Christopher A. Bartlett and Sumantra Ghoshal, *Managing Across Borders: The Transnational Solution*, 2nd ed. (Boston: Harvard Business School Press, 1998).

Summary:

Approaches to Strategic Planning

- Appropriateness of each strategy depends on pressures for cost reduction and local responsiveness in each country served:
- **Global strategy** is low-cost strategy attempting to benefit from scale economies in production, distribution, marketing
- **Transnational strategy** pursued when high cost pressures and high demand for local responsiveness

Basic Elements in Strategic Planning for International Management

Figure 8-2

Basic Elements of Strategic Planning for International Management



Elements of Strategic Planning: Environmental Scanning

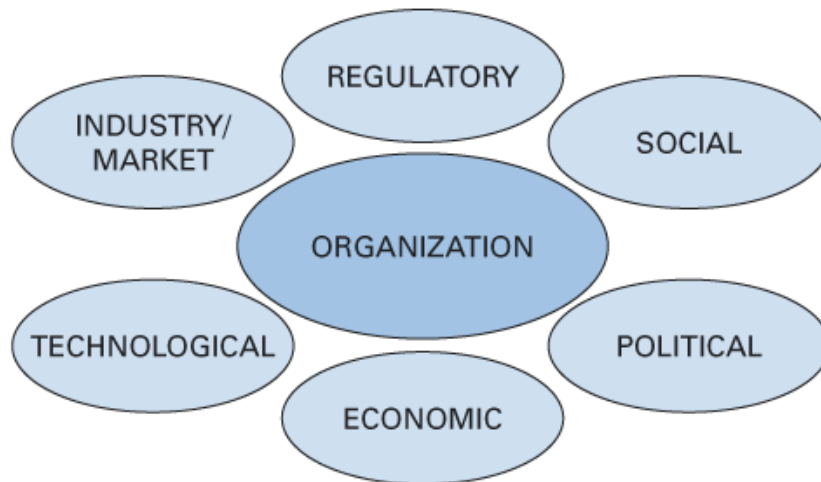


Figure 8-3

**Environmental Factors
Affecting Organizations**

Source: Kendra S. Albright, "Environmental Scanning: Radar for Success," *Information Management Journal* 38, No. 3 (May/June 2004), p. 42. Reprinted with permission.

Elements of Strategic Planning: Environmental Scanning

- Provides management with accurate forecasts of trends relating to external changes in geographic areas where firm is doing business or considering doing business
- Changes relate to economy, competition, political stability, technology, demographic and consumer data

Elements of Strategic Planning: Internal Resource Analysis

- Evaluate MNC's current managerial, technical, material, and financial strengths and weaknesses
 - Assessment then used to determine ability to take advantage of international market opportunities
 - Match external opportunities (gained in environmental scan) with internal capabilities (gained through internal resource analysis)
 - Key question for MNC: Do we have the people and resources that can help us develop and sustain necessary Key Success Factors, or can we acquire them?

Elements of Strategic Planning:

Strategic Planning Goals

- Goal formulation often precedes first two steps (environmental scanning, internal analysis)
- More specific goals for strategic plan come from external scan and internal analysis
 - Goals serve as umbrella beneath which subsidiaries and other international groups operate
 - Profitability and marketing goals almost always dominate strategic plans
 - Once set strategic goals, MNC develops specific operational goals and controls for subsidiary or affiliate level

Elements of Strategic Planning: Implementation

- Provides goods and services in accord with plan of action
- Plan often will have overall philosophy or guidelines to direct process
- Considerations in selecting country:
 - Advanced industrialized countries offer largest markets for goods/services
 - Amount of government control
 - Restrictions on foreign investment
 - Specific benefits offered by host countries

Elements of Strategic Planning: Implementation (continued)

- Local issues
 - Once country has been decided, firm must choose specific locale
 - Important factors influence this choice:
 - Access to markets
 - Proximity to competitors
 - Availability of transportation and electric power
 - Desirability of location for employees coming in from outside

Elements of Strategic Planning: Implementation (continued)

- Production
 - When exporting goods to foreign market, production has usually been handled through domestic operations
 - More recently MNCs have found that whether they export or produce goods locally in host country, consideration of worldwide production is important
 - Recent trend away from multi-domestic approach and toward global coordination of operations

Elements of Strategic Planning: Implementation (continued)

- Finance
 - Transfer funds from one place in world to another, or borrowing funds in international money markets often less expensive than relying on local sources
 - Issues include
 - Reevaluation of currencies
 - Privatization
- Strategic issues for base of pyramid
- International new ventures and “born global” firms

Elements of Strategic Planning: Implementation (continued)

- Strategies for “base of pyramid” (BOP)
 - Emerging market customers
 - People at bottom of economic pyramid
 - Marketing at BOP forces consideration of smaller-scale strategies
- International new venture and “born-global” firms

Elements of Strategic Planning: Implementation (continued)

- International new ventures and “born-global” firms
 - Firms that engage in significant international activity a short time after being established
 - Successful born-global firms leverage a distinctive mix of orientations and strategies
 - Global technological competence
 - Unique product development
 - Quality focus
 - Leveraging of foreign distributor competencies

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