Profit from innovation

How can you do it?

1) Use in own products
2) Blocking others
3) Provide innovation to others (e.g. licensing)

So:

1) Product market
2) Blocking patents in pharma and electronics.
3) Market for ideas

Complementary assets

- A factor to consider is complementary assets. You need to know how to bundle them to make or add value.

- Firms can
  - Own them (Netflix creates its own content)
  - Acquire or contract for access (Netflix licenses movies/tv shows)

- The more important the assets are to your innovation, the owner of that asset will get some of the profits.

Product Market

- We need *key capabilities* and acquire *complementary assets* to ensure the innovation offers a novel *customer value proposition.*

- What is a value proposition?

5 Values offered to a customer

1.	**Product:**	Performance, quality, features, brand, selection, search, easy to use, safe
2.	**Price:**	Fair, visible, consistent, reasonable
3.	**Access:**	Convenient, location, nearby, at-hand, easy to find, in a reasonable time
4.	**Service:**	Ordering, delivery, return, check-out
5.	**Experience:**	Emotional, respect, ambiance, fun, intimacy, relationships, community

- Competitors/Incumbents will be key drivers to the firm's Profitability
  - Aggressive price competition
  - Ability to quickly imitate

Good case scenario:

- New firm may be able to develop competencies if incumbents are ineffective (Amazon vs. Barnes & Noble or Netflix vs. Blockbuster)

Example for a bad-case scenario

- Netscape openly challenged Microsoft's product market leadership.

- You may not be able to persuade customers while avoiding "detection" and aggressive response from resource-endowed incumbents (Netscape vs. Internet Explorer)

- This led to Microsoft's ability to reverse its course of ignoring browser technology and move to compete head-to-head with Netscape.

- Cusumano and Yoffie recommend "do not moon the giant"; a stealth commercialization strategy achieves this objective

- If you are a new firm, you will usually partner with incumbent who can become the medium for commercializing your invention/innovation

- The more threatening you are, the greater the likelihood/value of cooperation.

- What form can the cooperation take?
  - License intellectual property
  - Acquisitions
  - Joint venture and alliances

Strategic Alliance

- This is a longer term agreement than a simple contract. They can involve an equity deal, may be formal or informal.

- There are advantages:
  - Pool money and resources
  - Very cost efficient (compare to acting alone).
- Disadvantages:
  - Their overall interests may not be aligned.
  - They may take advantage of each other.

Joint Venture

- More long term. The firms collaborate and create a new subsidiary together.
- The subsidiary will be co-owned by the two firms.

- Advantages:
  - Cost sharing
  - If they share equity, their incentives may be aligned
  - Probably more frequent interactions and hence knowledge spillovers.
- Disadvantages:
  - Share the profits.
  - Maybe compromise sensitive information

Licensing Agreement

- A Firm lets other firms use its technology conditioned it will pay them.
- The payment may include royalties, milestones, upfront fees and even maintenance fees.

- Advantages:
  - Fast and inexpensive
  - Enter in a market where you have no complementary assets (manufacturing capabilities, knowledge etc.)
- Disadvantages:
  - We don't get the whole profits
  - Depending on contract, the licensor may give some control

Outsourcing

- A firm pays another firm to perform something for hire. It is usually manufacturing but it can also be: i) testing, ii) marketing etc.

- Advantages:
  - When you access a specialized firm, you benefit from economies of scale (low cost, high quality)
  - Also reduce fixed cost. E.g. no need to invest in a factory.
- Disadvantages:
  - The other firm may imitate and compete with you
  - The original firm misses out on learning.

Type of Collaboration	Speed	Cost	Control	Access to the other firm's assets
Strategic Alliance	Medium/Fast	Cheap	Low	Yes
Joint Venture	Medium/Fast	Medium	Medium	Yes
Licensing	Fast	Low/Medium	Low	Yes
Outsourcing	Fast	Low/Medium	Medium	Probably no
Always the option of in-house	Slow	High	High	No

How do you choose across all these options?

Step 1: *Consider two firms. A new and incumbent. Examine their views.*

1. ***Excludability environment:*** To what extent can successful technological innovation by the start-up **preclude effective development** by an incumbent with knowledge of the innovation?

- You **need IP protection** (e.g. secrecy or patents) even if modest.

2. ***Complementary asset environment:*** To what extent does the incumbent's complementary assets contribute to the value proposition of the new technology?

- **↓Costs:** The costs associated with duplicating specialized complementary assets held by established firms are entirely borne by the technology entrepreneur.
- **↑Returns:** Consequently, when considering commercialization strategy choice, an increase in the importance or concentration of control of complementary assets raises the relative returns to cooperation over competition

2nd Step: Provide a Synthesis

Commercialization strategy environments

		Do incumbent's complementary assets contribute to the value proposition from the new technology?	
		No	Yes
Can innovation by the start-up preclude effective development by the incumbent?	No	The Attacker's Advantage	Reputation-Based Ideas Trading
	Yes	Greenfield Competition	Ideas Factories

Concluding…

- Analyze the **level of excludability** and the **degree of which key complementary assets are controlled by established firms** who could serve as competitive threats.

- The ability to extract value from innovation ultimately depends on the customer value proposition, rather than the simple offering of the technology by itself.

- The ability to ***trust potential collaborators*** is at the heart of an effective cooperation strategy. Be careful! See next slide.

- ***Timing*** of cooperation matters…not too early (weak bargaining power)…not too late (significant sunk costs)

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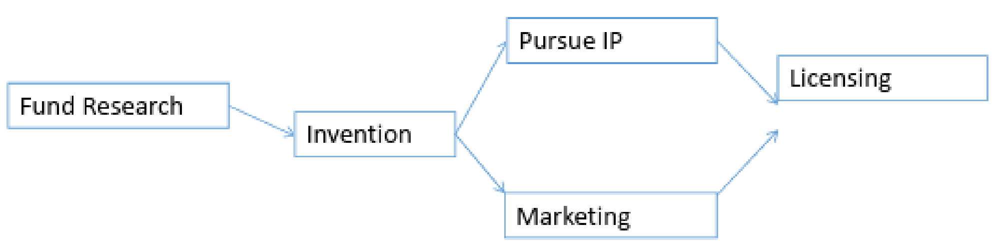
- Licensing is pretty common and help alleviate many problems.

- **Terms of a licensing contract:**
  - Geographic
  - Field
  - Licenses can have 4 types of money terms
    - Royalties
    - Milestones
    - Issue
    - Maintenance

A Simple View of Academic Technology Transfer



Marketing Process

- OTT may use secrecies to let firms know re the inventions
  - They can also write a short NCD (Non-Confidential Disclosure)
- If a firm is further interested, then it may ask for a letter agreement
  - The OTT takes the invention off the market
- Firm may sign an option agreement
  - Formal
- OTT during this whole process keeps in mind about IP
- 2 most likely types of license:
  - Exclusive
  - Non-exclusive

Patenting and Marketing

- Patents are costly
- Research has shown that they can influence licensing
- OTT needs to find a licensee that will pay the patent fees
  - Harvard and UC Berkeley, 60%-70% of the inventions are licensed before there is any patent

Patents can help in getting a license

Terms of a licensing contract

- Intellectual Property Owner's Association survey (Cockburn and Henderson 2003)
- 17.6 % of patents are licensed
- 1/8 of people want to license their technologies. That's why they do the research
- Classic problem for entrepreneurs: go to production or license;
- Licensing can be a way to avoid litigation

Dangers

- If an invention is published for a long time, then they cannot get a patent
- Should the inventor keep it hidden?
- Doesn't that go against the university's mission?
- If the inventor wants to maximize profits, then that will distort the research agenda:
  - Basic vs. Applied research
  - Quality of research

Alternative: The researcher commercializes

- Researcher goes spinoff
- In two time periods
  - From the very beginning
  - Nobody wants to license and then they go spinoff