

CHAPTER 5 – STRATEGY IN TECHNOLOGY-BASED INDUSTRIES

Strategic Management as such normally ends here... choose your generic strategy and that is the end of the story.

However, we want to make it more complete...
keep on reading

CHAPTER 5 – STRATEGY IN TECHNOLOGY-BASED INDUSTRIES

Innovation is nowadays one of the most important sources of **competitive advantage**.

Reading: chapter 12 – book.

CHAPTER 5 – THE MANAGEMENT OF INNOVATION

The main link between technology and competitive advantage is **innovation**.

Firms invest in innovation in order to gain a competitive advantage over competitors.



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There is a difference...

Invention

Innovation

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Invention: the creation of new products and processes (thru new knowledge or a different combination of “old” knowledge)

Innovation: commercialization of the invention by producing and marketing a new good or service (or new method of production).

CHAPTER 5 – THE MANAGEMENT OF INNOVATION

The development of technology: from knowledge to diffusion

Basic knowledge

Invention

Innovation

Diffusion

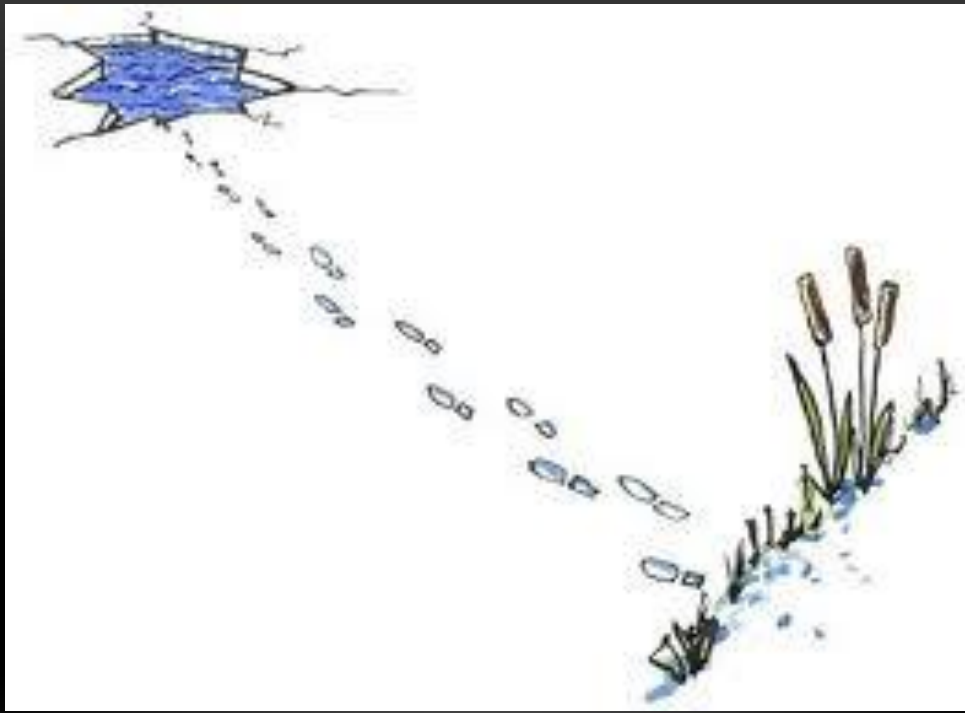


CHAPTER 5 – THE MANAGEMENT OF INNOVATION

Innovation, is it always profitable?

Who gets the benefit from innovation?

1. Customers (40% aprox)
2. Imitators, followers (25% aprox)
3. Suppliers (13% aprox)
4. The innovator! (12% aprox): but that's the average



First mover?



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“Regime of appropriability”

Four factors determine how much the innovator can appropriate:

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1. Property rights in innovation
2. Tacitness and complexity of the technology
3. Lead Time
4. Complementary resources

CHAPTER 5 – THE MANAGEMENT OF INNOVATION

1. Property rights in innovation:

Patents

Copyrights

Trademarks

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- ❑ What works? a new chemical product (Aspirina), a new plastic: yes, it works.
- ❑ New configuration of components, new business methods: no, it does not work.
- ❑ It can be used as a source of income (TI). Google's initial idea.
- ❑ Amazon: "one-click-to-buy" or "1-click buying" ... controversial. 99, 06, 07

Many companies prefer *secrecy* ... best protection.



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2. Tacitness and complexity of the technology



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3. Lead Time

The time it will take followers to catch up.



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4. Complementary resources



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**Conclusion: secrecy and lead time
are often more effective than
patents!**

CHAPTER 5 – STRATEGIES TO EXPLOIT INNOVATION

The key to successful innovation is not just those decisions to allocate **resources**...

But create the **structure, integration mechanisms and organizational climate** that lead to innovation.

CHAPTER 5 – STRATEGIES TO EXPLOIT INNOVATION

Two main issues:

- How and when to enter
- Creating the conditions for innovation

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□ How and when to enter

The Q is: To lead or to follow? Table 12.3 (p. 307)

It depends on:

- The extent to which innovation can be protected by property rights or lead-time advantages.



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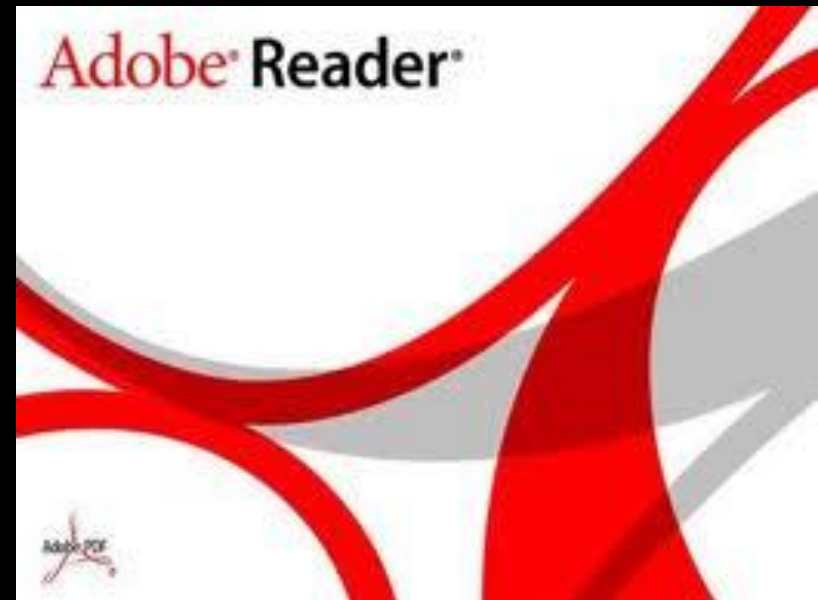
- The importance of complementary resources to exploit an innovation: the more important they are, the more risk to be a pioneer. Better wait.



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- The potential to establish a standard.

The greater the importance of technical standards, the greater the advantages of being an early mover. P.311 table.



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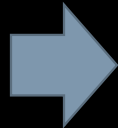
□ Conclusion

First mover



market niche

Follower



mass market

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□ Risk Management

- Risk coming from *technology uncertainty*;
- Risk coming from *market uncertainty* (“I can think of no conceivable reason why an individual should wish to have a computer at home”.)

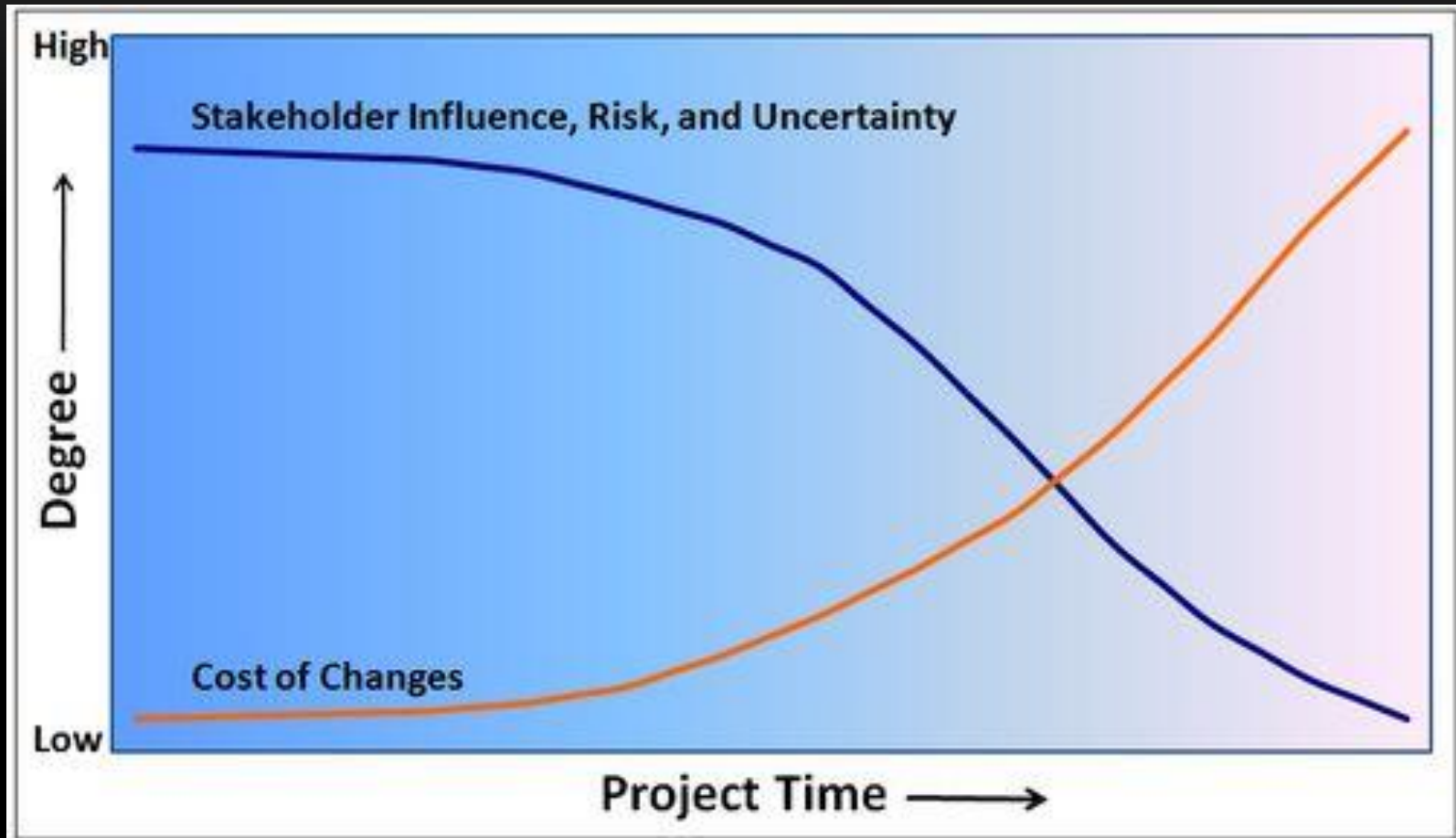


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Useful strategies to limit risk:

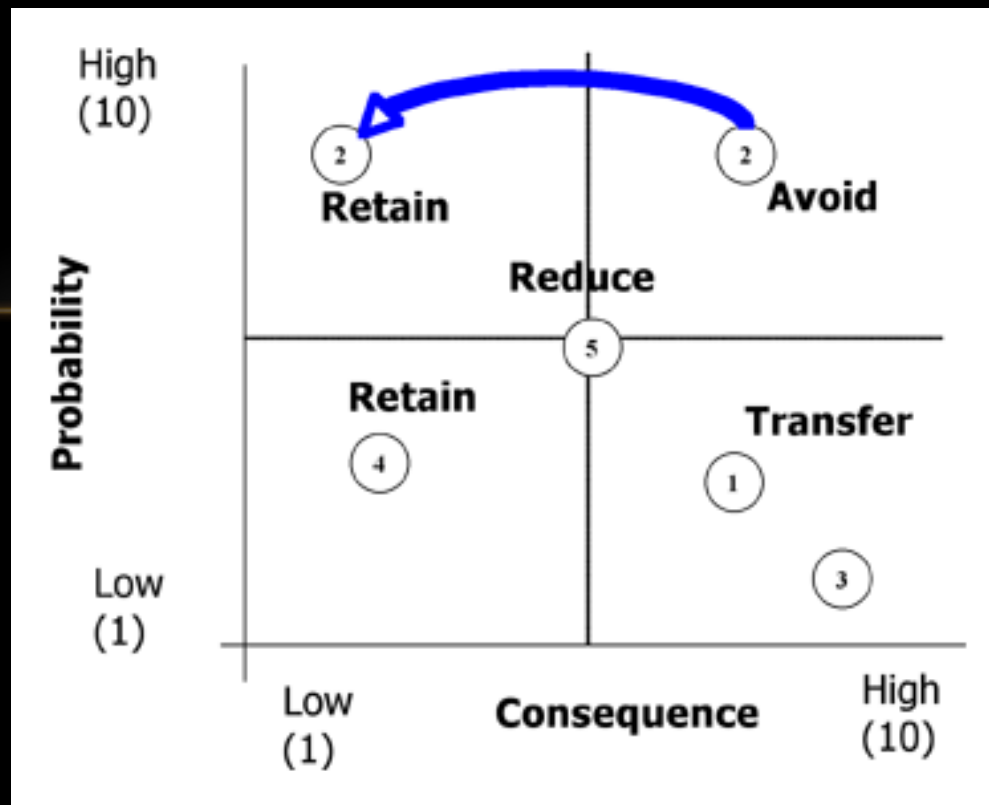
- Cooperating with lead users: for instance “beta versions”;
- Limiting risk exposure (avoid debt, keep fixed costs low); outsourcing, alliances...
- Flexibility: rapid responses to unpredicted events. Keep multi-strategic options.

Risk Event Graph



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Useful strategies to limit risk:



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2. Creating the conditions for innovation

Invention is a – normally individual- act of creativity requiring knowledge and imagination. Creativity is associated with with personality traits (rasgos de carácter): curious, imaginative, adventurous, playful, risk-taking, self-confident, daring...

It requires freedom to experiment.

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2. Creating the conditions for innovation

The problem is that creativity needs to be organised, managed to obtain efficiency: companies often develop systems to eliminate variation, such as:

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CHAPTER 5 – STRATEGIES TO EXPLOIT INNOVATION

Creativity requires a work context that is secure but not cozy (too easy and comfortable. RNE).

“*whole brain teams*”: diversity is accepted, constructive conflict, open criticism and intense disagreement.

Comment: start-ups vs consolidated firms.

See table: characteristics of operating vs innovating organizations. See Table 12.5, page 317.

Videos:

Nina Marquina

http://www.anella.cat/web/portal/experiencies/-/custom_publisher/yB90/27280211/Artesania+al+servei+del+disseny+innovador?utm_campaign=anella&utm_source=num84&utm_medium=destacat

Web site: True Blue Sky Thinking

http://www.ideachampions.com/weblogs/archives/2008/10/true_blue_sky_t.shtml

Hibridación

<http://www.infonomia.com/articulo/videos/157>

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How can companies stimulate new products/ideas development? (DYSON)

Five alternatives for organizations:

1. Cross-functional product development teams
2. Product champions
3. Buying innovation
4. Open innovation
5. Corporate incubators

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1. Cross-functional product development teams:
A manager leads a team of people from different departments. It breaks the conventional functional approach. Different knowledge / flexibility / fast moving.

*Conventional approach: sequential process
research lab / engineering / manufacturing / finance ...*

→ **INSTEAD: Japanese product development teams**



Generic Matrixed Organization

	Function 1	Function 2	Function 3	Function 4
Functional Leadership	Manager 1	Manager 2	Manager 3	Manager 4
Subject Matter Expert	SME 1	SME 2	SME 3	SME 4
Functional Aggregator	FA 1	FA 2	FA 3	FA 4
Business Objective A	Role A1	Role A2	Role A3	Role A4
Business Objective B	Role B1	Role B2	Role B3	Role B4
Business Objective C	Role C1	Role C2	Role C3	Role C4
Business Objective D	Role D1	Role D2	Role D3	Role D4

Cross Functional Team



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2. Product champions

This is a key role in the development of any invention; it needs a **product champion**. This will be an individual or group committed to promoting the development of a certain product, process or system. Not only in the creativity process but also in linking invention with commercialization (innovation).

Usually such championing takes place in an institutional context where the champion is trying to persuade the organisation that it is worth investing in a particular new product, or is prepared to defend an innovative product from attack once the process of development is under way.

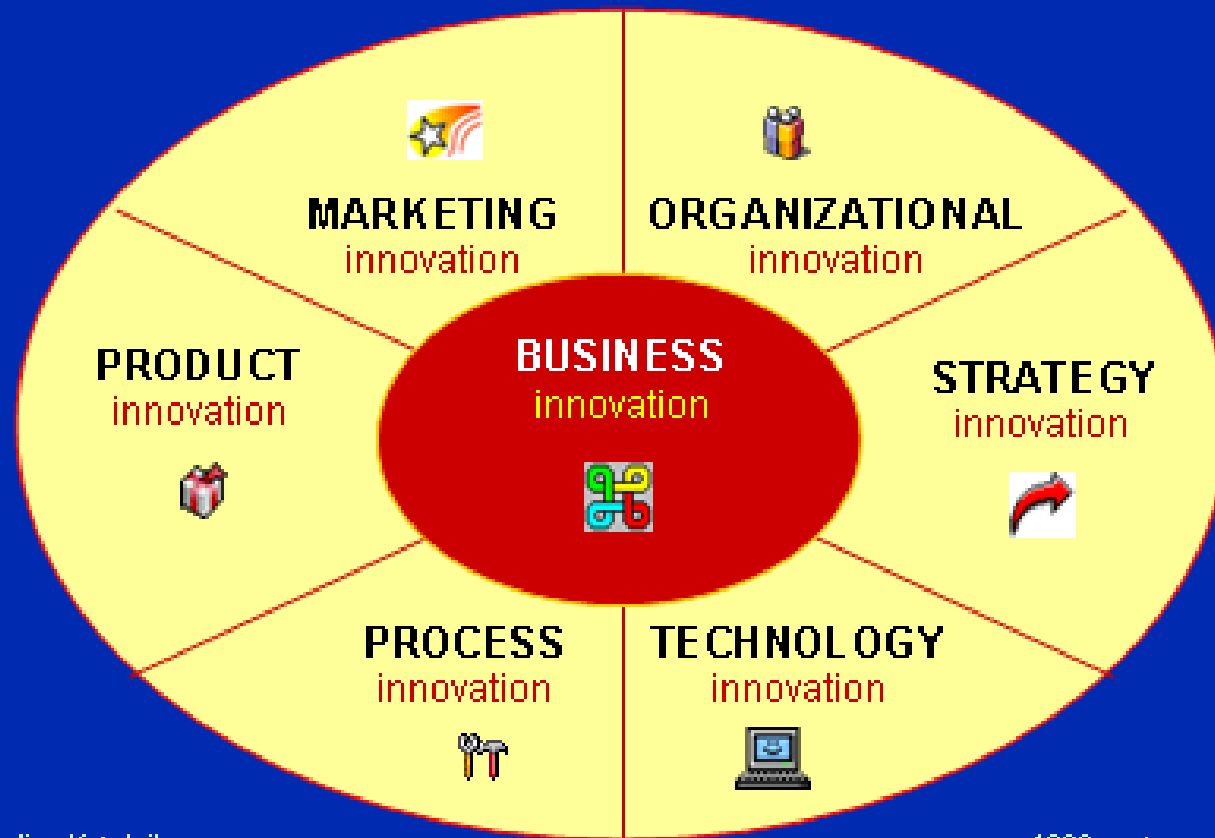
“A new idea finds a champion or it dies”

The company 3M has a long tradition of using this figure.



Systemic Approach to Innovation

Seven Interwoven Areas



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3. Buying innovation

Acquisition of innovation from start-ups: by licensing, purchase of patents or buying the whole company. Typical in biotechnology.

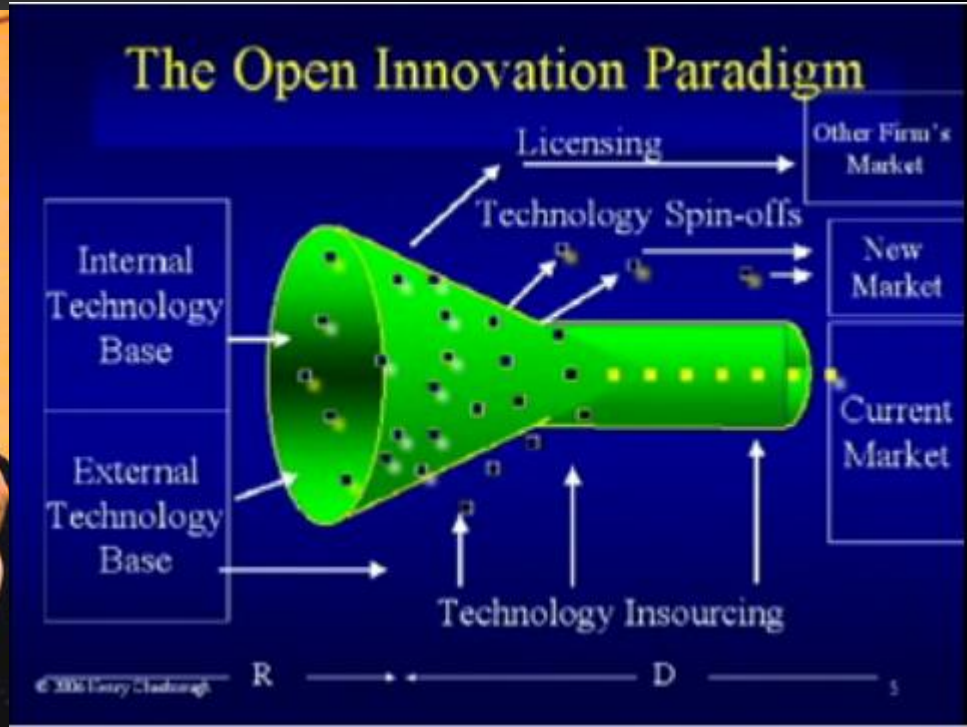
Reason why: large companies recognize that start-ups can innovate more, while large corporations have more capabilities (they can actually buy the technology).



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4. Open innovation

Open Innovation is a term promoted by Henry Chesbrough, a professor and executive director at the Center for Open Innovation at UC Berkeley, in his book “Open Innovation”.



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4. Open innovation

“Open innovation is a paradigm that assumes that firms can and should use external ideas as well as internal ideas”.

The boundaries between a firm and its environment have become more permeable; innovations can easily transfer inward and outward.

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4. Open innovation- cont.

The central idea behind open innovation is that in a world of widely distributed knowledge, companies cannot afford to rely entirely on their own research, but should instead buy or license processes or inventions (e.g. patents) from other companies. **Reading photocopy P&G p.321.**

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5. Corporate incubators

An established company funds and nurtures new businesses that have been developed internally: they fund and then spin them off.

They have had limited success: “*many corporate incubators became orphanages for unloved ideas that had no internal supportor or in-house sponsorship*”. G. Hamel.

Start-up vs spin-off

BEGIN



Businesses. Employment. Growth.
Incomes. Neighborhoods.

NEW VENTURE CENTER

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End of Chapter 5.
