Patenting Strategies

The First Steps

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1. The „pro-patent era“

- Philips patents about 3,000 new inventions per year.
- IBM obtains about 2,500 US patents per year.
- Since 2001 more than 100,000 PCT / 13,000,000 national patent applications have been filed per year.

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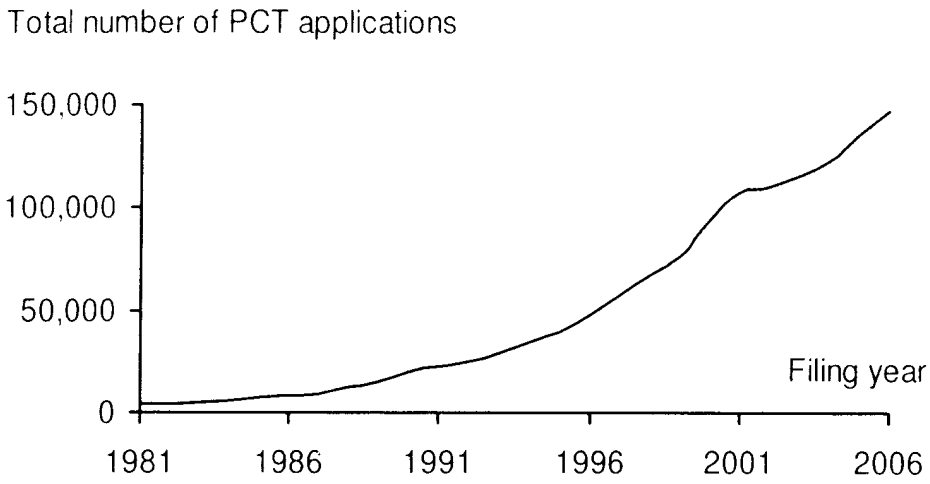
→ Why do companies – and universities too – patent so much?

→ Do the benefits they receive from IP match their expectations?

1. The „pro-patent era“



2. Main drivers

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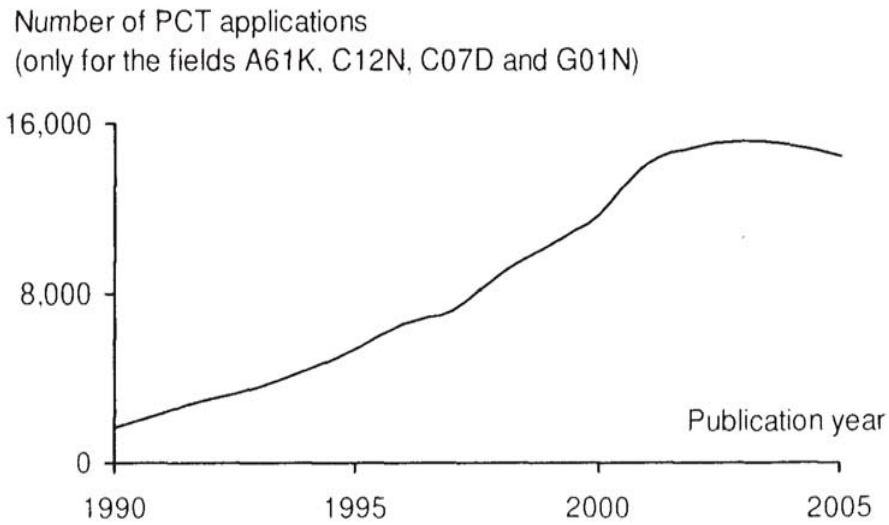
2.1 Technology-push

4 most frequently cited IPC-classes in PCT applications since 1990 are from the fields of **pharmaceuticals** and **life sciences**:



IPC… International Patent Classification (approx. 67,000 classes)

2.2 Universities searching for alternative funding

- Pressure has increased on public research institutions to become more autonomous from public funding → patents are considered to be one solution for alternative funding for universities.
- What was previously considered as public knowledge (produced for a free use in an open environment) is now considered as proprietary → this leads to a rise of patents.

2.3 Globalization

- A patent exists only at the national level → once a company has markets in many countries, it has to obtain patents in all those countries.
- The diffusion of technologies: knowledge flows nowadays amoung companies and universities of different countries → patents are now a global matter.

2.4 The process of innovation has changed

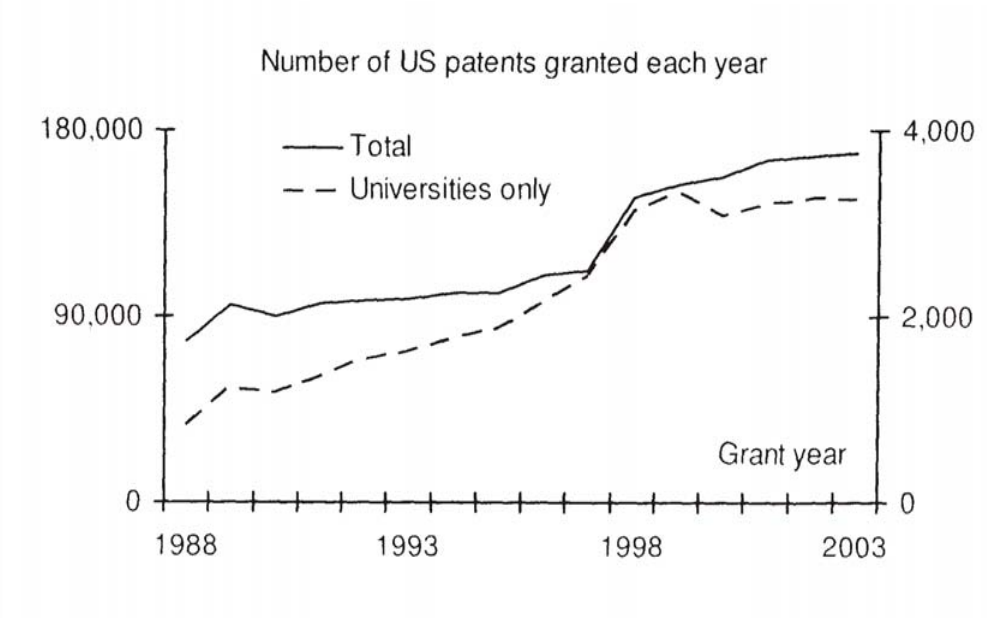
- „Basic research“ agendas are now often directed by commercial interests: research has become „demand-pulled“ → an „interactive“ research model has emerged with an emphasis on the role of feedbacks of knowledge at each stage of the innovation process → patents have become more important as a tool for economic strategy and competitiveness for companies and universities.

2.5 Pro-patent political actions

Governments tend to adopt policies to establish a pro-patent environment:

- Technology transfer from university to industry → bridging the gap between supply and application of knowledge: the Bayh-Dole Act (USA, 1980).
- Enforceability of patents through more harmonized judicial means with predictable outcome (esp. in case of infringement actions).

2.5 Pro-patent political actions



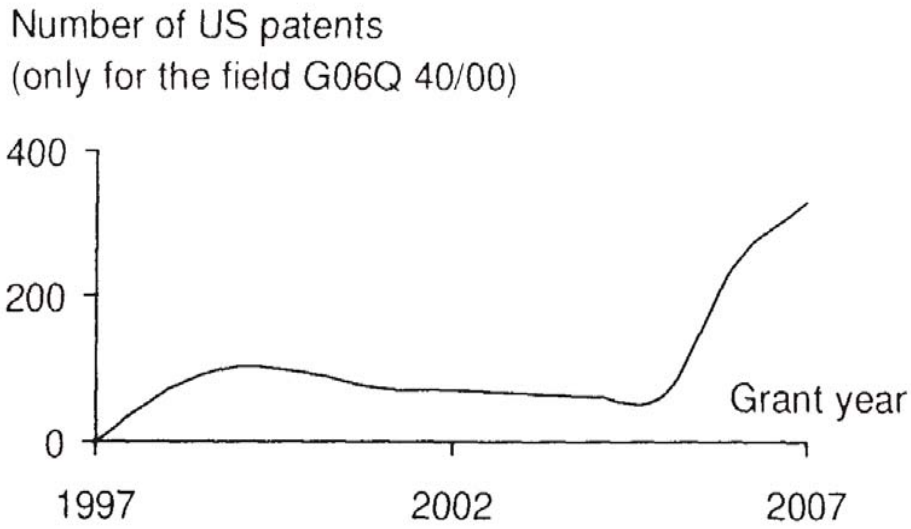
2.6 Industry-push to patent new technologies

- The US Supreme Court in 1980 confirmed that a patent on genetically modified bacteria was valid and ruled: „anything under the sun that is made by man“ is patentable.

→ **Business methods**: with the emergence of e-commerce in the late 1990´s, companies tried to patent inventions related to transactions and activities occurring over the internet.

→ **„Computer-implemented inventions“:** in Europe under the cross-lobbying of the open-source community and the software industry.

2.6 Industry-push to patent new technologies



IPC-Class G06Q 40/00…inventions in the fields of finance and insurance, e.g. banking, tax processing, risk analysis

2.7 A new world economic order

- TRIPS: „Trade-Related aspects of Intellectual Property rights“ → since the mid 1990´s all WTO Member States have to provide high standards of (patent) protection for inventions in all fields of technology (with a few exceptions).

→ Companies should file more patent applications worldwide → the unprotected R&D results of these companies could be freely copied by competitors.

3.1 The value of patents: definitions

Definition of the term „value“:

1. „**Value“** refers to the perceived worth of a product, service or asset, here patents.
2. **„Perception“** is the process by which individuals (and companies, universities) organize and evaluate stimuli from their environment.

3.1 The value of patents: definitions

The main dimensions of values for patents are:

- **Financial**
- **Societal**
- **Economic**

3.1 The value of patents: definitions

Financial:

- Build entry barriers to secure market share
- Cross-licensing to access technologies
- Equity from joint-ventures
- Licensing income

3.1 The value of patents: definitions

Economic:

- Create new business e.g. spin-offs
- Favor partnerships e.g. via joint-ventures
- Offer entrepreneurial careers for researchers

3.1 The value of patents: definitions

Societal:

- Favor progress via knowledge spillovers
- Encourage innovation

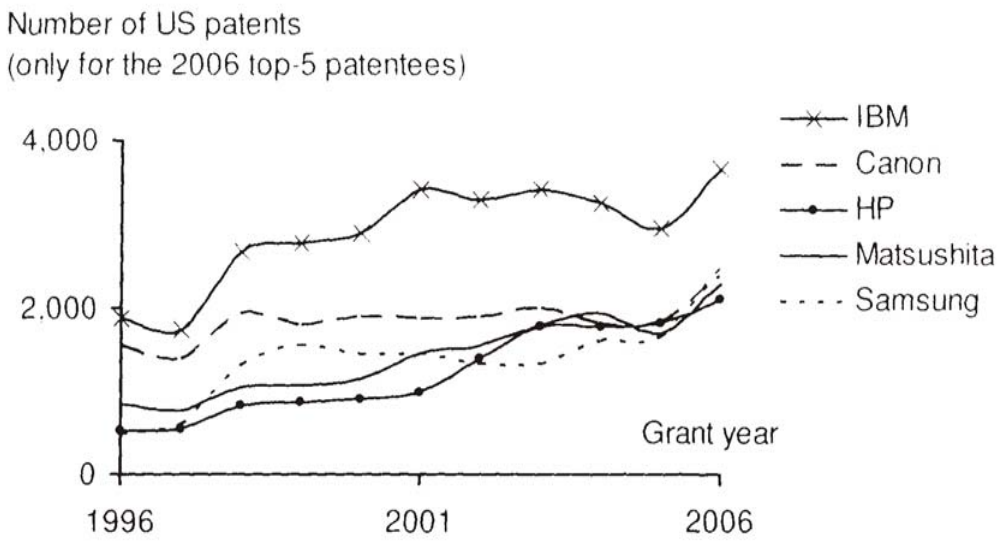
3.2 Patent portfolios

Today the value of patents is often associated with massive licensing incomes that are widely advertised by large companies:

→ This is generally not the fruit of coincidence!

→ Large companies have been massively building up patent portfolios since the early 1980´s!

3.2 Patent portfolios



3.2 Patent portfolios: IBM

IBM is the typical example of a company with massive revenues from its patents as a result of very active patenting since the early 1990´s:

- Patent portfolio (2006): 21,000 US patents and 38,000 patents abroad

→ Licensing income about US$ 1 billion per year

→ → Investement in R&D: about US$ 5 billion per year!

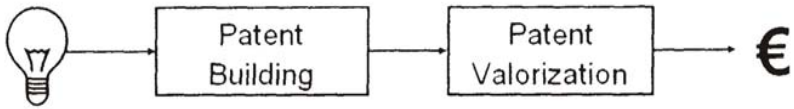
3.3 IP management – a paradox situation

- Potential of EC companies in the production industries with R&D to patent: 1:3
- EC companies actually filing patent applications: 1:6
- In Europe only 30% of the patents are used or licensed
- In Japan: 45%
- In the USA: 60% (but e.g. Procter & Gamble (US): uses only about 10% of ist 25,000 patents)

→ Paradox: patenting has steadily increased during the last 2 decades while the ability of companies to create value remains rather limited!

4. Patent management

Patent management is a process for turning ideas into incomes:



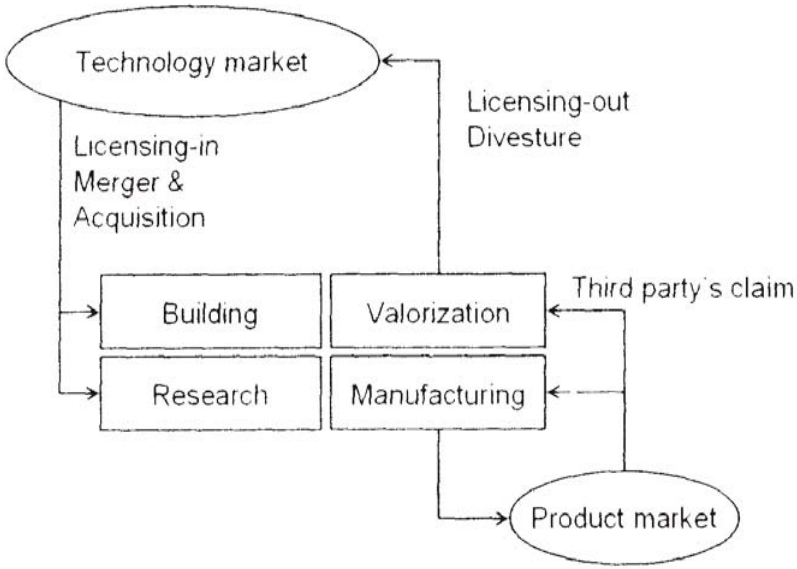
1. **Patent building**: Innovations are collected and turned into patents („building“); usually, the firm acquires more than one patent; the set of patents owned by the firm is often called „patent portfolio“.
2. **Patent valorization**: Depending on business considerations and competitive environment, valuable patents are extracted from the whole portfolio and commercially exploited („valorization“).

4.1 Basic activities of the firm

Any firm in the technology industry can be represented as a combination of 4 basis activities:

- **Research**: to invent or develop technologies.
- **Manufacturing**: to make products and services from technologies.
- **Patent Building**: to protect new technologies using the patent law systems.
- **Patent Valorization**: to create value from patents for the benefits of the firm.

4.2 The external dimension of patent management



4.2 The external dimension of patent management

Product market:

The firm produces and exchanges manufactured products with suppliers and customers according to the law of supply and demand.

→ It may happen that the firm actually uses a technology that belongs to another firm, which then could claim prior rights („third party´s claim“), e.g., the firm has improved a basic invention and manufactures this improvement, while the basic invention was already patented by another firm.

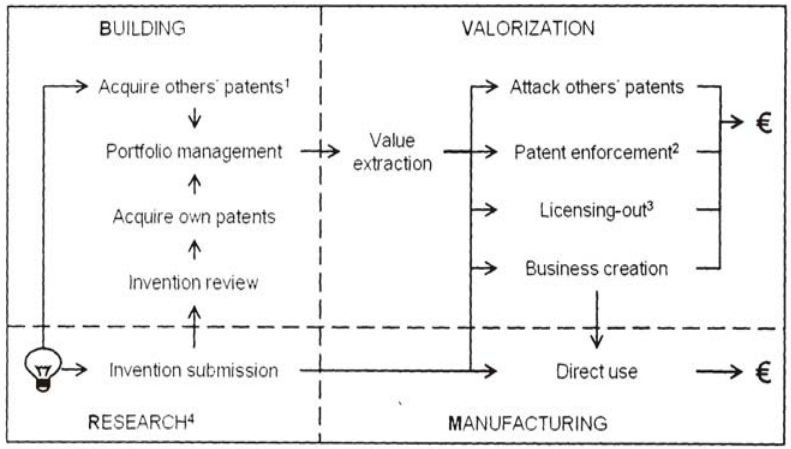
4.2 The external dimension of patent management

Technology market:

Sometimes, the firm (owner of a patented technology) cannot fully satisfy the market demand. The firm may then exchange the technology with others, using the same supply-demand system as for tangible products, thereby defining technology markets:

- **Licensing**
- **Divesture**
- **Acquisition**
- **Merger**

4.3 The internal dimension of patent management



[1] Including licensing-in and cross-licensing
[2] Including injunction, infringement, seizure goods and alternative dispute resolution
[3] Including donation
[4] Including patent information

4.3 The internal dimension of patent management

- **Research or licensing-in?**

  Licensing-in and cross-licensing are 2 alternatives to research frequently used in the industry; they may be embedded in strategic alliances and partnerships, by which the firm gets access to R&D facilities and knowledge owned by the partner.

4.3 The internal dimension of patent management

- **Patent, publish or keep secret?**

→ Pro patenting: - Secures R&D investments

- Facilitates negotiating

- Prevents others from using the technology

- Avoids that competitors get blocking patents

4.3 The internal dimension of patent management

- **Patent, publish or keep secret?**

→ Pro Secrecy: - Offers endless protection in theory

- Suitable when technology is obsolete in the short term

- Suitable to protect innovations with little or no inventiv step

- Does not disclose knowledge

- Cost-free

4.3 The internal dimension of patent management

- **Maintain the patent or not?**

  Periodic meetings: evaluating the various patents of the firm´s patent portfolio

  - Which patents should be abandoned for costs control reasons?

  - Which patents are the most valuable in order to extract the best mechanism for valorization?

5. The strategic dimension

- A patent strategy provides guidelines for patent management, which enable the proper synergy of the internal resources in order to achieve the desired business goals.
- Without strategies, patents remain operational tools handled with short-terms objectives and leading to limited performance for the firm.

5. The strategic dimension

Main types of strategy:

- **Defensive**
- **Commodity**
- **Profit**
- **Aligned**

5. The strategic dimension: DEFENSIVE

Probably the most common strategy: it protects the current businesses, innovations and products of the firm where core technologies are key assets.

→ Protection of laborious and cost-intensive developments from imitators: in the pharmaceutical and biotechnology sectors it takes 10-15 years for a product to reach the market with an overall cost of US$ 800 million per drug.

→ Avoiding disruptive actions from competitors: the firm continuously monitors blocking patents held by competitors in order to avoid infringement litigation (→solution: (cross-) licensing).

5. The strategic dimension: COMMODITY

Patents are used in this strategy as something that is useful and can be turned into commercial or another advantage.

→ Patents as marketing and communication tools:

- to communicate the firm´s strong position within a specific technology
- to enhance the firm´s image as a leading player in the field

→ Patents help the firm strengthen its bargaining position:

- „stick licensing“ to secure an existing market
- „carrot licensing“ to develop a new market

5. The strategic dimension: PROFIT

The firm aims to make profits through licensing.

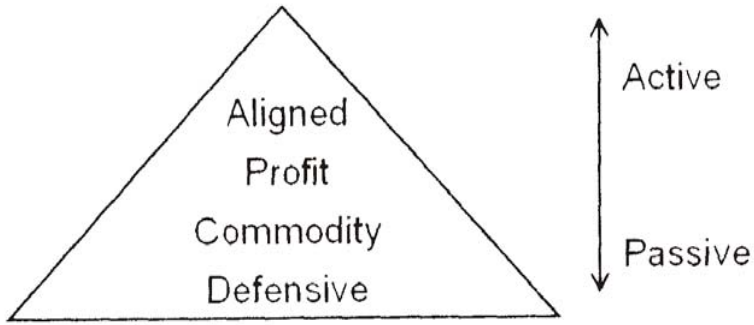
→ Such profits may be reinvested to support R&D programs, even despite difficult economic conditions.

→ Other firms have neither R&D nor manufacturing facilities, but still own patents which they license: „IP Holdings“.

5. The strategic dimension: ALIGNED

- The firms tend to use patents to support long-term business goals. Through alignment patent strategies are intricately related with other corporate strategies e.g. to R&D.
- Patents are then fully part of the firms managment processes, including marketing and product development and decisions concerning patent are aligned with business and research strategies.

5.1 The pyramid of patent practices



- The firm is „active“ in its patent management when it directly uses ist patents or licences them to others.
- The firm is „passive“ if its patents are acquired but not used.

5.2 Common practices of patent strategy

Defensive:

- Shield: Patenting to disclose the firm´s inventions and nothing more.
- Sword: Patenting to prevent others from using the firm´s inventions (threat).
- Castle & moat: Patenting to protect every aspect of the firm´s technologies.

5.2 Common practices of patent strategy

Commodity:

- Facilitative: Patenting to ensure that the firm can operate without being obstructed by others´ patents – with no intention to obstruct others with patents.
- Promotional: Patenting to advertise the firm´s patenting as a competitive edge.
- Securing superiority: Patenting to establish a strong reputation through extensive licensing and enforcing patents.

5.2 Common practices of patent strategy

Profit:

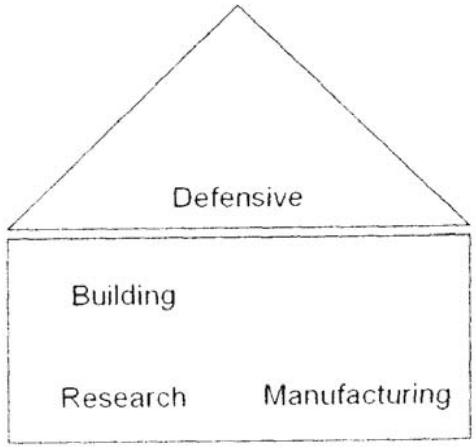
- Shotgun: Patenting intensively assuming that one of many patents is of significant value.
- As a business: Patenting for commercialization purposes as a core activity for the firm – not only for the patent department.
- Financial assets: Patenting to attract and secure financing.

5.2 Common practices of patent strategy

Aligned:

- Fortress monopoly: Patenting extensively to provide market barriers.
- In-a-box monopoly: Well-defined patenting to provide good technology coverage and enforceable patents.
- Value-added monopoly: Well-defined patenting to protect relevant inventions and strategic patents to obstruct competitors.

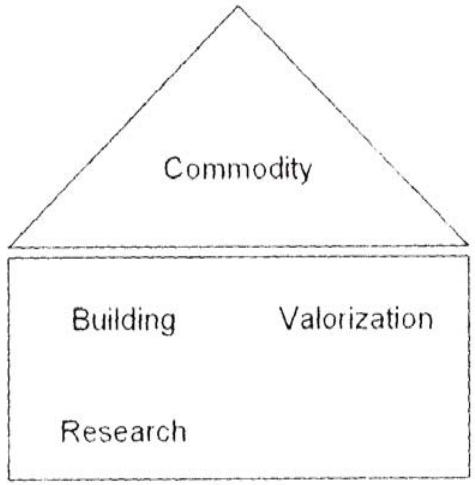
6. Business model: THE NEW FACTORY



→ Many companies have learned the „hard way“ what patents can do (against them). Amongst them factories and manufacturers are „easy targets“ for infringement claims since their products directly reach the market and are therefore visible for patentees.

→ Here patents are used to protect the manufacturing activity: carrying out some R&D activities, protect the fruitful results of this research, and make its own products based on these patented innovations.

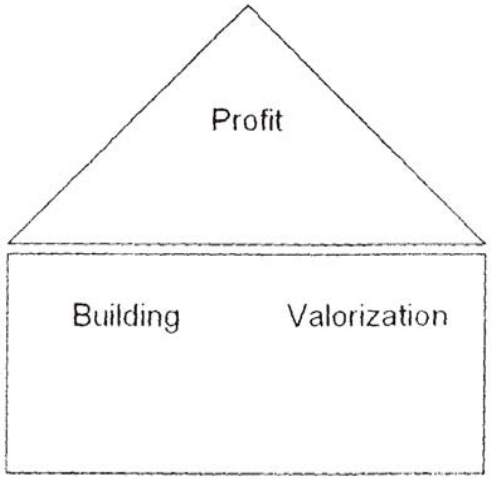
6. Business model: THE NEW KNOWLEDGE SUPPLIER



→Traditionally knowledge suppliers (universities and RTOs) have been assessed mainly based on the number and quality of scientific publications: in the past researchers barely secured the knowledge they generated.

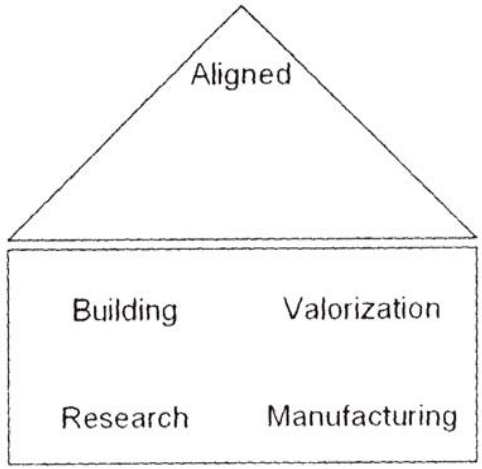
→Today (patented) knowlege has become a prevalent factor of success in collaboration and research networks. Patents aim to protect the results of R&D and are used to create new research contracts, partnerships, licensing income, and spin-offs: patents are used as a „commodity“.

6. Business model: THE IP HOLDING



A new type of company has emerged in the mid 1990´s: the „IP holding“. The core business is to commercialize patents while having no research or production facilities. The business goal of an IP holding is to generate income based on patents.

6. Business model: THE NEW GROUP



While patent systems initially aim to reward individuals (inventors), it is often observed, sometimes criticized, that patents have become a matter mainly for large multinational groups. What is the origin of that trend?

→ The business goal of the group is to achieve autonomous and free manufacturing. The firm carries out its own R&D, protects the fruitful results of this research and makes its own products based on these protected innovations. The group also tends to valorize its patent portfolio by securing market share through: (treats of) infringement actions, (cross-)licensing, and strategic partnerships.

Thank you for your attention!

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