

Chapter 6 – Technology Protection

Prof. Dr. M. A. Pasha

Rector

IT-hub Sargodha

Importance of Technology Protection

- Transferring technology knowledge from one organization to another (whether in the form of know-how, know-what or know-who) is well known to be problematic as far as Intellectual Property (IP) is concerned.
- It differs from the transfer of products and goods in various ways.

Importance of Technology Protection

- Exchanges of knowledge cannot be reversed. Once knowledge is transferred it cannot be taken back.
- In certain cases it is difficult to verify if a specific piece of knowledge has been (ab)used. For example, it is difficult to ascertain if specific know-how on production technologies has been employed in another company's production plants.
- It is extremely difficult to pinpoint the ownership of an idea and where it originates.
- Every country has different laws regarding knowledge protection.
- It is very difficult to assemble the necessary parts of knowledge required to develop future IP.

Technology/Knowledge Protection Mechanisms

A number of mechanisms can be used to protect knowledge:

- Patents and registration of design patterns
- Copyright
- Secrecy
- Design complexity
- Gaining lead-time advantage
- Trademarks
- Confidentiality agreements and knowledge management

Protected/Proprietary Technology Protection

- Protected/Proprietary technology is a process, tool, system or similar item that is the property of a business or an individual and provides some sort of benefit or advantage to the owner. Content that is protected by a copy protection technology could include movies, games, software, CDs or digital music.

Types of Technology Protection

There are two types of technological protection measures:

- Access Control Technological Protection Measures
- Copy Control Technological Protection Measures

Access control technologies

- technological protection measures which are used by copyright owners to **control access** to their content.
 - password control systems
 - Payment systems
 - time access controls

Copy control technologies

protections measures applied to copyright content which **prevent, inhibit or restrict** the doing of a copyright act with that content (eg, making a copy of a protected film, emailing it or putting it online).

- a software lock which prevents you from making a copy of a computer program encryption measures stored on the disk containing a movie or CD which prevent you from copying the movie or songs on the disk
- a technology that 'locks' documents to prevent them from being copied (eg, the function that 'locks' a PDF document to stop you from making a copy)
- a technology that makes an unauthorized copy of a film unwatchable (eg, some copy protection technologies add elements to the signal produced by a DVD/VHS player which make any recording of the film unwatchable)

Trademark, Patent, or Copyright

- Intellectual property (or IP) refers to creative work which can be treated as an asset or physical property. Intellectual property rights fall principally into four main areas;
 1. copyright,
 2. trademarks,
 3. design rights and
 4. patents.

Trademark

- A **trademark** is a word, phrase, symbol, and/or design that identifies and distinguishes the source of the goods of one party from those of others.
- A **service mark** is a word, phrase, symbol, and/or design that identifies and distinguishes the source of a service rather than goods.
 - Some examples include: brand names, slogans, and logos.
 - The term "trademark" is often used in a general sense to refer to both trademarks and service marks.
 - Unlike patents and copyrights, trademarks do not expire after a set term of years. Trademark rights come from actual "use".
 - Each time you use your mark, it is best to use a designation with it, like the ® symbol after your mark. If not yet registered, you may use **TM** for goods or **SM** for services,

Benefits of Trademark Registration

- a notice to the public of the registrant's claim of ownership of the mark
- a legal presumption of ownership nationwide
- the exclusive right to use the mark on or in connection with the goods or services set forth in the registration.

Registration of Trade Marks

- Registering in the US, the UK, Japan, etc will protect your mark in that country only,
- **Community Trade Mark (CTM)** covers the mark in all EU countries.
- **The Madrid System** is a one stop solution for registering and managing marks worldwide. File one application, in one language, and pay one set of fees to protect your mark in the territories of up to 98 members.

Patents

- apply to industrial processes and inventions, and protect against the unauthorized implementation of the invention.
- Patentable materials include machines, manufactured articles, industrial processes, and chemical compositions.
- Patents can be of different type, like Design Patents, Utility patents and plant patents.
- Patents typically take 2 to 3 years to be granted. The duration of patent protection depends on the type of patent granted – between 15 years to 20 years.

Copyright

- protects original works of authorship including literary, dramatic, musical, and artistic works, such as poetry, novels, movies, songs, computer software, and architect
- It gives the author specific rights in relation to the work, prohibits unauthorized actions, and allows the author to take legal action against instances of infringement or plagiarism.
- Duration:
 - For works created by an individual, protection lasts for the life of the author, plus 70 years.
 - For works created anonymously, pseudonymously, and for hire, protection lasts 95 years from the date of publication or 120 years from the date of creation, whichever is shorter.

Circumvention Devices

- Technologies that are used to remove, disable or circumvent technological protection measures.
- A 'circumvention service' is a service offered by someone to remove, disable or circumvent a technological protection measure.

‘tragedy of anti-commons’

Protection Mechanisms for different Types of Knowledge

Type of knowledge	Preferred protection mechanism
Tangible/Codified	Patents as primary protection mechanism, plus copyrights, trademarks and confidentiality agreements
Intangible/Codified	Copyrights as primary protection mechanism complemented by trademarks and confidentiality agreements
Tangible/Tacit	Secrecy, complexity of design, lead-time advantage over competitors, confidentiality agreements and trademarks
Intangible/Tacit	Trademarks complemented by secrecy, lead-time advantage over competitors.

Motives for Patenting

- **Protection.** A firm can use patents to protect their inventions from imitation. Patents can also be used to safeguard national interests.
- **Blockade.** Using patents to create a blockade can be done in two strategic ways.
 - *Defensive patent strategies* aim to stop others from patenting your inventions and allow suing for infringement, regardless of whether the IP is needed or not.
 - *Offensive patent blockades* aim to block others from getting into a certain innovation space and patenting inventions that are similar, but not identical, to the invention that is planned.
- **Reputation.** Improving the image of a company as an innovator and to increase the capital value of the firm.

Motives for Patenting (Cont.)

- **Exchange.** Patenting has great potential for encouraging cooperation. Having stronger patent protection over a technology improves a firm's bargaining position and hence is particularly important for small and young companies who want to establish partnerships and alliances with well established firms.
- **Incentives.** Within large companies, patents are often used as a measurement of performance and as a basis for rewarding innovative members of staff.

Weakness of Patents

- the art of drafting patents is quite difficult. A potential strategy is to file relatively unfocused patents which could be later divided into more specific patents.
- *Copyrights* are weaker forms of protection than patents. But the protection starts immediately, without the need for an application and an evaluation of originality, as soon as the authors of the work codify the knowledge

Weakness of Patents (Cont.)

- *Secrecy* is also an effective approach when a patent cannot be enforced, for example, when it is difficult to assess whether a certain production process has been used.
- *Design complexity*. Reverse engineering is often used to uncover and copy the working principles of a competitor's technologies. A protective approach which could work in this case is that of making use of complex designs

Gaining Lead Time Advantage

- *Proliferation of product varieties by a market leader.*
- *Patent proliferation*
- Importance in Standards battles

Confidentiality Agreements and Knowledge Management

- The confidentiality agreements are a key protection tool as the risk of knowledge leakage could be severe.
- The firm has different levels of security, imposing restrictions about what can be exchanged, even between parts of the same company.
- The internal infrastructure should be carefully designed along multidimensional controls and labels to partition the firm's knowledge management system and to allow the identification of safe areas of discussion and collaboration between employees with different disclosure rights.

Thank You