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# Why, What, When and Where to Protect Intellectual Property Rights

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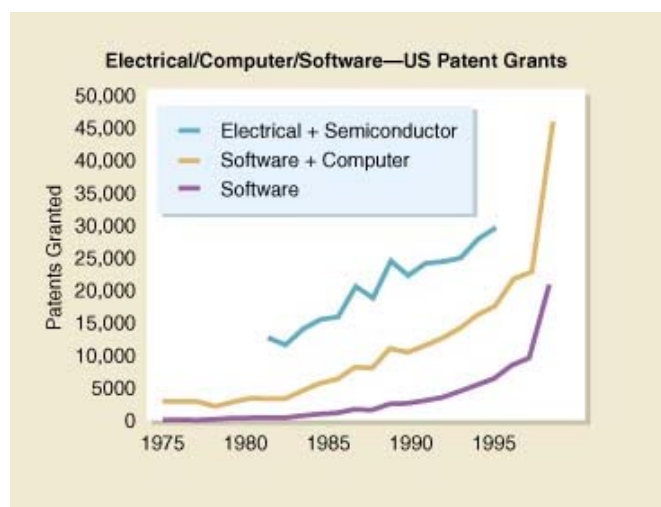
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## INTRODUCTION

In the Knowledge-Based Economy (KBE), Intellectual Property Rights (IPRs) are the key driving forces behind economic growth. Inventions, special processes, computer programs, distinctive names or marks, musical and other media work, designs and trade secrets may all be Intellectual Property right protected. Such IPRs must be properly identified, carefully evaluated and skillfully protected if they are to fulfil their commercial potential. Getting the best value from the IPRs requires good management of the entire process from creation, protection to commercialization.

The success of a product today relies much on creativity and innovation. Awareness of IPRs is crucial to ensure creative ideas and innovations are well protected for commercial exploitation. IPRs could be obtained through one or more legal devices, including patents, trademarks, copyrights and trade secrets. Over the last 15 years, the number of patents granted by the US Patent and Trademark Office (USPTO) has increased exponentially. Figure 1 below illustrates the number of patents granted for the Electronics and Computer industry.



**Figure 1: Number of Patents Granted by USPTO**

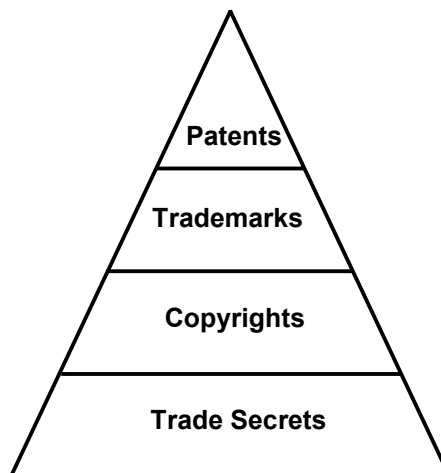
## **THE NEED TO PROTECT IPRs**

Intellectual Property assets like any other physical assets need to be protected legally so that there is clear ownership of the asset. When you purchase a house, you would want to have a deed to prove your ownership of the property. The similar rationale applies to IPRs. You need to have a legal ownership to your invention so that you could exploit it, license it or sell it to a third party. In the case of IPRs, there are more reasons than just pure exploitation.

Ownership of IPRs could prevent competitors making or selling similar products. By doing so, a technical entry barrier is created. Market share and profit margins can be preserved or expanded, which is important to achieve success in business. In some cases, IPRs such as patents could also enhance market value of products. Patents are also used to pre-empt and block competitions. Some companies have an in house team to study market direction and file patents to block competitors from entering a lucrative market.

## **STRATEGY TO PROTECT IPRs**

To reap the benefit of any IPR, a company needs to put in place a good strategy and system to protect IPRs. It first needs to identify what IPRs it owns, including assessing their values and making them secure. There are four broad categories of IPRs – Patents, Trademarks, Copyright and Trade Secrets. The company must first decide how it wants to protect the IPRs using one of the four means. Then it will need to decide when to initiate the process of IPR protection and where to obtain the protection. Figure 2 below shows the IPR protection pyramid,



**Figure 2: The IPR Protection Pyramid**

## **Trade Secrets**

At the base of the IPR protection pyramid are trade secrets. The US Uniform Trade Secret Act defines trade secret as:

“... Information including a formula, pattern, compilation, program, device, method, technique or process that derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons ...”

Although trade secrets provide broad protection, they have severe limits. The information must in fact be secret and the owner must take action to preserve this secrecy. Some companies require their key employees to sign undertaking not to disclose information about the research that they are working on to other people. Some companies require employees to sign undertaking not to join a competitor within a specified period, such as six months, if they resign from the company. The measures are taken to protect the companies' trade secrets. Nevertheless, the best form of protection for trade secrets is to keep it a secret only known to a few persons. A good example of trade secrets is the famous Coca-Cola formulae.

## **Copyrights**

Copyright is a legal device to protect original authorship fixed in a tangible medium or form, including Literary works; Musical works; Dramatic works; Pantomimes and Choreographic works; Pictorial, graphic and sculptural works; Motion pictures and other audiovisual works; Sound recording; and Architectural works. A copyright gives the owner an exclusive right to:

- reproduce the work,
- prepare derivatives work,
- distribute copies of the work,
- perform the work, and
- display the work in public.

Copyright does not protect idea represented by a work. It will only serve to protect the particular expression used by the author to convey the idea. A copyright interest may be retained by the owner, or it may be licensed or sold.

## **Trademarks**

If you can not protect your ideas with a copyright, you might at least consider how to brand, or mark them, so people know they originate from your company. Copyright protects only copying of an original artistic work, whereas trademark can protect names, symbols, or other indications of a product's source or quality. By obtaining a trademark, the owner obtains the right to exclude others from using marks which might tend to confuse the public.

## **Patents**

Patent is the most comprehensive mean of protecting IPR. They provide for the prohibition of the sale, manufacture, import, or use of a device that is covered by the patent. To provide as much coverage as possible, a well-written patent stakes out as broad an area of product coverage as possible. The key to a broad patent is a properly written technical description, or disclosure, of the invention.

The disclosure should include sufficient detail for a person skilled in the pertinent art to make and use the invention, but the disclosure does not have to include a complete set of blueprint or source code. Flowcharts, block diagrams, and functional data-flow diagrams, along with text describing each step of the process or how the invention works. The names on a patent, or the person or company assigned the patent, determine who owns the right to exclude others from infringing the patent.

For a specific IPR, you will need to decide the best means of protecting it. Though patent may seem to have the best legal protection, in some cases, it will be better to keep it a trade secret. Table 1 below summarizes the features of various types of protection for comparison:

Type of Protection	Protection Term	Protection Method	Example
Trade Secret	As long as the information remains secret	Take measures to protect the secret. Obtain contractual rights to protect the secret.	Soft-drink formula
Copyright	Life of the author plus 50 years	Rights accrue on "fixation" of the work. Copyright registration.	Software in BIOS ROM
Trademark	For as long as the mark is used in commerce	Rights accrue on the use of the mark. Additional rights available upon registration.	Brand name or make of a computer
Patent	Twenty years from the date of filing	Rights accrue at the time the patent is issued.	Network Security

**Table 1: Types of IPR Protection**

## **WHEN AND WHERE TO PROTECT IPRs**

Intellectual Property Rights should be part of the consideration before the beginning of a research program. The ownership must be clearly defined. Contractual agreements must be prepared and signed before the program starts. They should include handling of exceptions such as minors and external parties not bound by the company regulation. Non-disclosure agreements should be instituted and signed at appropriate time to preserve the trade secret or maintain novelty until the patent is filed.

The general rule is employee owns the invention as ownership follows inventorship. However, If the employee – (i) was hired to invent, (ii) was specially assigned to work on project or (iii) signed an invention or employment agreement, then the employer owns the invention. Hence, it is crucial to have employees signed an assignment of IPR if a company wants to own the rights for commercial interest.

When substantial work has been done, one of more of the types of protection could be initiated such as filing a patent. Copyright is protected by creation. However, good documentation must be in place to ensure clear protection of the creative work. In some countries like the US, the inventor is required to file a copyright application with the US Copyright Office.

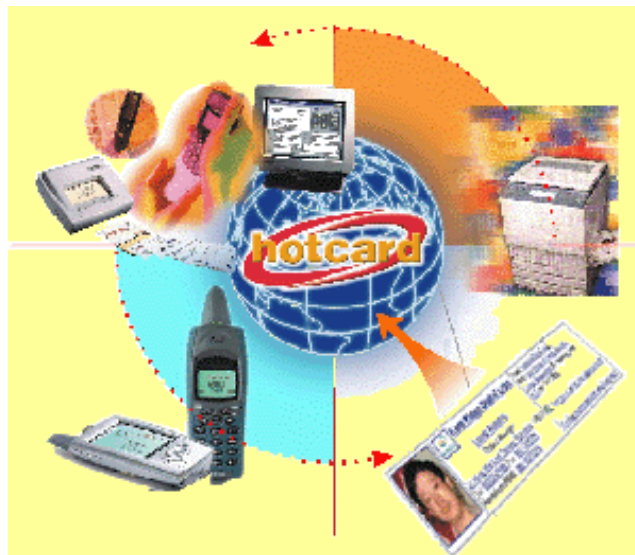
Large organizations may have an in-house IP department to handle IPR matters. Researchers and engineers are required to submit invention disclosures to the IP department that will initiate the process of IPR protection. For smaller companies, you could consult patent agents or consulting firms to apply for the IPR protection. If you intent to do it on your own, you will need to be familiar with the process and procedures for each of the method of IPR protection.

In protecting IPR, a company must decide where to obtain the protection. It depends on the countries or regions that the company will market its products and where there is going to be potential competitors. Patents, for example, could be filed under PCT in more than 100 designated countries. However, for each country, there is a cost of obtaining the monopoly. Therefore, the company must decide which countries to obtain the patent depending on its financial resources and market.

## **CASE STUDY: HOTCARD TECHNOLOGY PTE LTD**

Hotcard Technology Pte Ltd (<http://www.myhotcard.com>) is a high-tech Information Communication Technology start-up company. The team has spent over 9 years researching compact sized multilingual Optical Character Recognition (OCR) technologies. The company is a leading solutions provider for Scan-Input™ technology used in handheld devices, including PDAs, Mobile Phones, Scan Pen, Smart Phones, etc. Its existing partners and customers include Group Sense International Limited, a Hong Kong listed company and Ericsson, a leading telecommunication company.

Hotcard Technology Pte Ltd has developed several proprietary applications including Scan-Text-Input™, Scan-Translate™, Scan-NameCard-Input™, Mobile-Scan-Fax™ and Scan-Barcode-Input™ applications. Putting all these applications into a handheld device, such as a mobile phone or a PDA, will make it a very attractive product.



### **Scenario 1: In a Japanese Restaurant**

Imagine if you walk into a Japanese restaurant and the waiter presented a Japanese Menu to you. You are faced with the challenge to order your food. Now, take out your mobile phone and scan a line of Japanese text using the Scan-Text-Input™ technology, then press a button and use the Scan-Translate™ application, your mobile phone display now reads "Fish and Chips". The system reads Japanese text and translates it to English for you. The same could be done for different pairs of languages as well.

## Scenario 2: In the Airport Lounge

While you were waiting for your plane at the airport, you read a very interesting article from a magazine in the airport lounge. Part of the information is very useful to your colleagues. What could you do ? With the Hotcard powered mobile phone, you could scan the text using the Scan-Text-Input™ technology. You will then dial your company fax and use the Mobile-Scan-Fax™ application to fax the article to your colleague. The system comes with an image stitching application that will join the various stripes of scanned images into its original form. Alternatively, if you are having a WAP phone, you could save the article in your virtual drive in cyberspace.

## Hotcard's Business Strategy

For Hotcard Technology Pte Ltd to be successful it needs to offer the application software and scanner hardware as a package deal to hand held devices manufacturers. This is because scanner is not part of the standard features offered by hand held devices. Therefore, Hotcard has forged a strategic alliance with a leading scanner manufacturer to provide a complete solution to hand held devices manufacturers.

## IPR Protection Strategy

As OCR is an established technology, Hotcard Pte Ltd needs to check through all existing patents to ensure that it does not infringe any of them. The company has decided trade secrets as its main form of IPR protection. All researchers were required to sign a secrecy agreement with the company and a right assignment agreement when they join the research team. Source codes are highly protected and only object codes are given to clients or partners for prototype development.

Apart from trade secrets, the company has also obtained trademark registrations for its niche applications: Scan-Input™, Scan-Text-Input™, Scan-Translate™, Scan-Explanation™, Scan-NameCard-Input™, Mobile-Scan-Fax™ and Scan-Barcode-Input™.

The scanner hardware from strategic partner has a patent on low power consumption design. This is an important criteria as hand held devices use batteries with limited duration of power supply.