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STRATEGIES FOR PATENTING INVENTIONS AND RESEARCH RESULTS: WHAT, WHEN AND HOW

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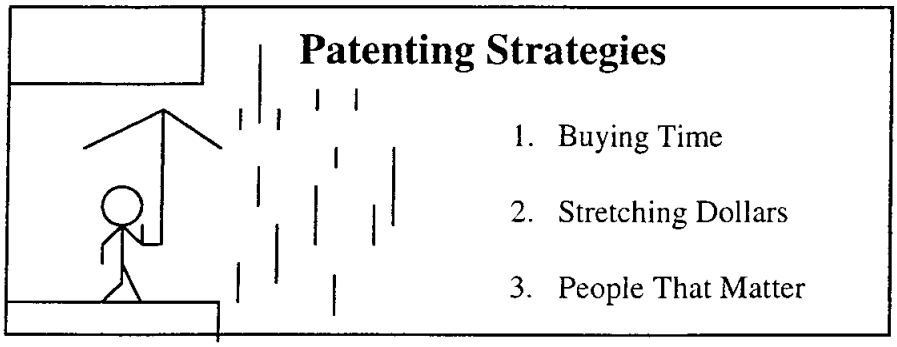

Small Invention. Big Future.
L-o-n-g L-o-n-g J-o-u-r-n-e-y.
Ready an umbrella: Patent tool.

1. Introduction

A mighty flame follows a tiny spark.

In my workshops, I am frequently asked by novice inventors how to file a patent once fantastic ideas strike them. Some of you may have experienced a similar urge to go straight into the process of filing a patent in the post-inventive illumination. This anxiousness to act is due to inventors equating the patent as the door-way to a pot of gold and also the worries of having their golden goose risked being stolen if not 'patent-caged'.

1.1. Begin with the end in mind

Before you go spending a lot of money on patents, there are several other important things you should do or reflect upon.

The reason for the birth of an invention is to solve an existing problem or that a new solution is an improved way to perform an activity. Often, being able to solve a problem is good enough motivation to spur an inventor.

The next best thing that can happen to an inventor is to see everyone clamoring to use his or her new solution; much like a blessed mighty fire spreading. The market reality is those great expenses of **time, money and people** are require to convert old-solution fans into your new-solution worshippers. Such educational or marketing pursuit is itself a high risk expense since it is generally true that users' old habits die hard.

It follows that the incentives for one to pursue implementing an invention must necessary be the opportunity of getting high returns (to justify the high risk expense). The prospect of monopolising a market by virtue of owning a patent offers some form of commercial insurance worth pursuing.

Hence post-invention actions, such as the patenting activity, should then be viewed as one, in an array of tools, that helps to position the invention into gaining market acceptance. Remember, a patent is one of the means to an end. And a **quality patent** can be a crucial strategic tool in the long commercial journey.

1.2. The long journey

I remembered my moment of joy upon receiving my first patent in 1993 for a what I considered as the world first **Visual Colour Calibration Technique** (USA Patent number **5,194,891**). Ever since, like many inventors, I learned that the commercialization journey is a long and arduous one. Countless inventions had fallen by the sides along this beaten track.

Inventors must really appreciate the difficult-reality of selling invention and that the end objective is always to gain market acceptance. It is with this sense of realistic appraisal, a survival framework if you like, that I pursue this discussion of strategic priorities from a patenting perspective.

2. Buying Time Strategy

By filing a patent application, you have committed to surrender your knowledge to the public. In return, if your application is successful, you are granted monopoly rights of invention use in the market for a limited period of years.

In another word, after you have had obtained a priority date by filing a patent application, the merciless countdown clock starts ticking. By the time your local application is published, you have little time to consider filing in other countries. By the time you learned of the poor market demand for your invention, you may have had sunk in a lot of money for filing its patents. By the time your company gets ready to fully exploit the invention sales, the patent expiry in 17 years is drawing near. By the time this ..... By the time that .....

Now, if you agree that time is money, then buying time at every stage of the patenting process must mean stretching your dollars. Additionally, knowing when to engage a patent attorney can also save dollars. Therefore, the first thing in inventing is learning the process of filing the patent and the option routes to take.

2.1. Bidding For Time: The Pre-Patent Filing Phase

It is always recommended to use patent attorneys at the appropriate time. They are usually a pleasure to deal with; but they are not usually the best, "first step" an inventor can take. Before you go spending a lot of money on patents, there are several other important things you should do.

2.1a. Evaluate its marketability

Sometimes, due to the intense business rivalry, it is tempting for inventors to rush to be the first in filing for a patent (note: in USA, the patent system emphasize first-to-invent). Often, this rush to be the first-to-file is a mental-trap that caused inventors much wasted dollars.

What is more important is to do a ***preliminary evaluation,*** if possible, before filing for a patent application. It does not have to take a lot of your time or cost you a lot of money to do a preliminary evaluation if you know how. If you do not get an invention evaluated at the onset, a lot of time and money will be wasted. There are many inventors who run out and spend thousands on patents only to find the product was not feasible to make or could not be marketed. This is one reason that reportedly only 5% of all patents ever earn any money for the inventor.

Still, inventors must keep in mind that offering an invention for sale or publicly disclosing it without having first filed a patent application forfeits all rights to a patent in most countries. ***Test marketing*** before at least considering possible patent protection is most unwise.

2.1b. Conduct and evaluate an accurate patent search

After some initial development, you may want to conduct a patent search so as to ascertain how your idea measures against prior technology. After the patent search, you are more re-assured if you talk seriously with others pertaining to licensing your invention. Besides conducting prior art search from the patent data bank, do also search the latest trade magazine or any relevant trade sources.

Applications can be filed more cheaply when inventors have studied the prior art and can explain how their inventions differ from what has gone before, especially in terms of unexpected advantages. Inventors are usually most familiar with their technology, and, the more they do, the less time attorneys will need to spend.

2.2. Buying Time During The Post-Patent Filing Stage

2.2a. Filing via the Traditional Patent System

Traditionally, if you file a patent application in a country member of the Paris Convention for the Protection of Industrial Property, within the next 12 months you can file the same patent application in another country party to the **Paris Convention**, with the same effect and get the same rights as if it had been filed on the same date, as the original, first application.

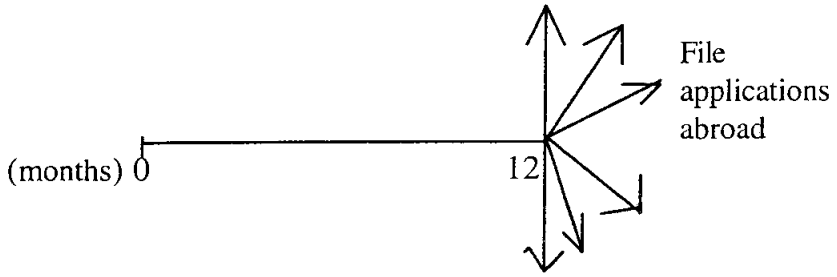

Figure 1: Traditional Patent System

Via the Paris Convention route, 12 months' period is hardly enough time for an inventor to look for local or foreign partners not to mention the difficulty of making commercial headway in such tight time frame. Under such commercial uncertainties, rushing to file multiple applications in different countries is like throwing money into a dark hole; it is a gamble.

Prudent commercial decision is a calculated risk based on informed decision. You certainly need more time to get more information and also time to crystallize your plans before filing applications in other countries. Fortunately, there is another option, as you shall read next, in which you have a little more luxury to stretch the time constraints.

2.2.b. Stretching time via PCT route

If an inventor opts to file a patent application via the **Patent Cooperation Treaty (PCT)** route (provided the applicant is a national of or resides in a PCT contracting State), then the 12 months' window for commercial proble is stretch into 20 months (or even 30 months, if Chapter II is applicable).

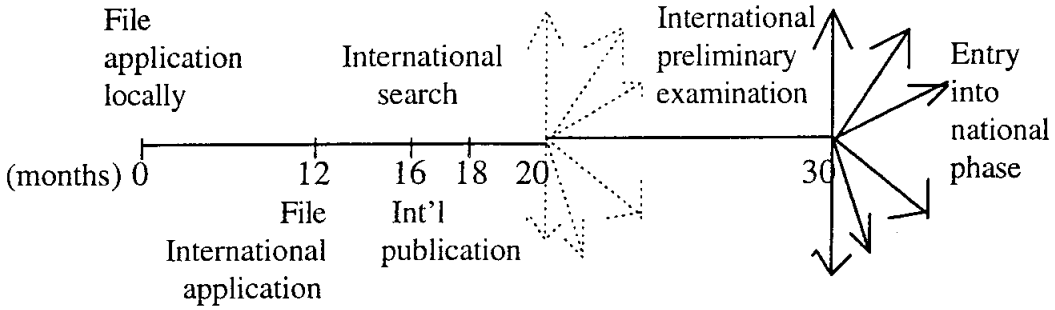

Figure 2: Filing via the PCT route

You will see from the above Figure 2, the PCT system is rightfully described as a patent "filing" system, and not a patent "granting" system. There is no "PCT" patent. The decision on granting patents is taken exclusively by national or regional Offices in the national phase.

As an inventor, when you have decided to go ahead with filing for a patent application, a first step is to file it your local Patent Office. From the date you filed your first patent application, time is running. Via the PCT you have gain an additional 8 to 12 months' window period to catch up with your commercial efforts.

3. Stretching Your Dollars

Stretching your dollars is about seeking cost-effective patents. I have grouped this part of the topic into four major categories, namely

- Don't throw dollars after 'poor' patents
- Stretching dollars via PCT route
- Intellectual Property Protections Mix
- Patenting: a portfolio approach

I shall start with an appreciation of the USA patenting terrain in view of her huge technological bank, long historical perspective, and the relative ease in getting the data over the internet.

3.1. Don't Throw Dollars On Non-Performing Patents

There are 5.8 million patents *issued* in USA since the 1790s. Let's look at the number of patents issued for the two different periods of time.

A. From Year 1868 to 1933 (65 years)	
A1. T. Edison's Holder for Article to be Electroplated	
His last patent granted ***1933***, USA patent number	1,908,830
A2. Thomas Edison's Electrograhpic Vote-Recorder	
His first patent granted ***1868,*** Patent number	90,646
A3. Number of patents issued	1,818,184
A4. Duration period:	**65 years**
A5. Number of patents issued per year	27,972
A6. Number of patents issued per day	**77**

B. From Year 1976 to 1998 (22 years)	
B1. Singaporean's patent: Burn-in test probe apparatus	
USA granted Sept. ***1998***. USA patent number is	5,811,981
B2. Japanese's patent: Glass body with fluorescent pattern	
USA issued Nov. ***1976*** USA patent number	3,993,797
B3. Number of patents issued	1,818,184
B4. Duration period:	**22 years**
B5. **Number of patents issued per year**	**82,645**
B6. Number of patents issued per day	**226**

C. * Estimates of Non-Performing Patents and Abandoned Patent Pending Applications

	I Number per year	II Estimate unit-expense	III Estimated total $ spent
C1. Applications filed	3,000,000		
C2. Applications till exam. stage	500,000		
C3. ***Early-abandoned*** **applications**	2,500,000	$500	***$1,250 millions***
C4. Patents issued (see item B5)	82,645		
C5. ***Failed*** **applications** (C2 - C4)	417,355	$2,500	***$1,043 millions***
C6. **Non-commercialised patents** (90%)	74,381	$4,000	***$298 millions***

* How & What (assumptions and deductions):-

(a) I was told each year, ***3,000,000*** patent applications were ***filed*** in USA; as of this printing, I am unable to verified this figure.

*(b) Based on the average **82,645 patents issued** each year, the successful **patent issued** rate works out to only **2.75% of all the filed patent applications.***

(c) Assume about 500,000 patent applications filed reach the examinations stages. The column II's unit-expense for the cost of filing patent application is based on a conservative estimate.

(d) Item C6: Assume 10% of the issued patents were commercialised or licensed.

(e) The figures are in US $.

The above figures provide many interesting observations but I will discuss it from the perspective of wasted resources in the patenting activity:-

(A1) 97% of the filed patent applications were never issued patents (see item C4: Percent 100% less 82,645 divided by 3,000,000)

(A2) 83% of the filed patents were abandoned at the early stage (see item C3: Percent 2,500,000 of 3,000,000)

(A3) 83% of advanced stage patent applications failed to get patents issued (see C5: Percent 417,355 of 500,000)

(A4) 90% of issued **patents covering empty markets represent wasted resources** (item C6: assuming 10% of patents were commercialised)

(B) **Intensified patenting activities over the last 2 decades,** referring to item B6, the average of number **patents issued per day is 226!**

[If any seminar participant or reader does come across verifiable statistics that is contradictory or updated, it will be appreciated if you can inform me via email **gan@talkcolor.com** or mailing to **Block 220 Jurong East St. 21 #16-623, SINGAPORE 600220** (Attn.: Jim Gan C.L.)]

3.2. Stretching dollars via the PCT route

A hallmark of good business planning is to be prudent in expenses and also timing the expenses. This is also true in the patent filing process. Looking at the figures in item C3 and C5, it appeared that many inventors rushed into patenting without prior evaluation studies.

Before the introduction of the Patent Cooperation Treaty (PCT) system, virtually the only means by which protection of an invention could be obtained in several countries was to file a separate application in each country; these applications, each being dealt with in isolation, involved a repetition of the work of filing and examination in each country.

Compare this to the PCT route as described in a WIPO article:
"The principal objective of the PCT is to simplify and to render more effective and more economical -- in the interests of the users of the patent system and the Offices which have responsibility for administering it -- the previously established means of applying in several countries for patent protection for inventions."

PCT route offers a longer time-window for the hesistant inventors. If an inventor were to abandon the application after 18 months of unsuccessful commercial probe, at least the abandoned money amount spent on international filing is less painful than the traditional route.

Additionally, for inventors from the **developing countries** whose per capital national income is below US$3,000, the PCT route has an added advantage of fee savings in that the **PCT handling fees is reduced by 75%!**

3.3. Intellectual Property Protections Mix

Because inventors often lack important information when cost-critical choices have to be made, it may be useful to think of intellectual property as an insurance. How can one purchase adequate insurance at least cost? Where corners can be cut, what are the risk? Some inventors cope by doing as much as possible themselves. Others look to the use of the different intellectual protection options.

For example ***trademarks*** are valuable for protecting goodwill after a product is marketed but they are not useful in preventing others from copying products except to the extent the commercial source of the product is misrepresented.

Rights in ***trade secrets*** protect commercially important information from being used in breach of confidence. However, trade secret law is not effective against someone from obtaining the information by reverse engineering or independent discovery.

Utility ***patents*** can protect a much wider range of inventions and can be used to prevent sale of works independently invented. Nevertheless, for inventions such as *industrial processes*, patents' infringement may be impossible to enforce. For example, if others can learn to practice an invention from reading a patent, but the patentee cannot determine that the invention is being used, the patent will not be worth much. In such circumstances, trade secrets may be preferred.

3.4. Patenting: A Portfolio Approach

Filing a patent is not a 'one time and it's done' activity. For example, over time, the front-line people may come back with comments on an invention's weaknesses or improvement suggestions. Patenting budget would have to look into covering the crucial technical changes needed in the future.

It is worth repeating that getting an invention successfully into the market is a risky venture. Any early setbacks, whether at the patent filing stage

or during the commercial phase, not only demoralise the staff but also puncture your dreamed vision. It is imperative that the chief of research & development department (or an inventor) should have reserve resources to mount a series of re-attack after each failure.

Therefore it is only wise that your first attempt in filing patent application should also represent the best chance of succeeding commercially, with reserve resources to recover from early mistakes made.

For those who may wish to file a patent on a do-it-yourself approach, you risk getting a patent with much less value than you would have gotten via a patent attorney. On the other hand, if your invented product has a short product life cycle, a D-I-Y patent pending status maybe good enough discourage 'lesser' imitators.

4. People That Matter

An invention invariably starts with a single idea from a single inventor. But sooner or later, it will require a team effort to make it happen. Your team will consist of four primary team members: a patent attorney, your manufacturing partner, a sales and marketing expert and you. These four will work together as a committed team to do whatever it takes to get the project launched.

The team members you select are crucial to your success. You want a manufacturer who can give you the quality, service and price you expect. You want a sales and marketing expert who can get your new invention sold and producing income. A smart marketing expert can get orders before the products are manufactured. An experience patent attorney, proficient in your field of invention, can get you a quality patent with broad protection.

If the market proposal and the patent application are well prepared, this will increase the interest of a venture capitalist or the manufacturer. A pending application can be assigned, after which inventors can avoid further expense. Engaging **a manufacturer early can give you a better idea of whether foreign protection is warranted, and where.**

With an expert, committed team, you will be able to shorten the development time frame significantly and thereby save a lot of money!

5. Conclusion

The strategies for patenting inventions and research results are really a basket of possibilities. Given the uncertainty in the nature of getting an invention into the market, any strategy adopted should include

- Conservation of resources
- Ready to re-launch after early mistakes
- Pursuit of new knowledge during the process

In conclusion, obtaining a patent is like bringing the umbrella before embarking on a long, uncertain commercial journey. It is one of the safeguards against unexpected dark clouds ahead.

Inventors intending to file a patent on a do-it-yourself approach, be aware that your patent, if successful, is like having an umbrella with holes. Plainly speaking, your only hope is a smooth journey so that you will not be challenged into opening an ineffective umbrella.

Remember, get a quality umbrella that is worth its price before starting your journey. Finally, good day and good luck!

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