

Beyond Entrepreneurship: How Innovation and Entrepreneurship Changes the World

-Jack M. Wilson

Chapter 12 Intellectual Property

Intellectual property (IP) is one of the most important resources of most new ventures. For ventures in the Life Sciences and in Information Technology, this may be the most important resource. Deciding how to manage that resource can be a make or break issue for any new venture. Failure to protect your intellectual property can allow other to imitate your products and services and enter your market using the intellectual property that you may have created and developed. The process of creating and developing intellectual property can be an enormously expensive endeavor. For information technology based companies this can easily be in the millions of dollars. For companies in pharmaceuticals or biotechnology, this would undoubtedly stretch into the billions of dollars. Imagine how unfortunate it would be if your new venture had developed some kind of intellectual property at great expense and then saw an imitator or “fast follower” bring a new product to market using your ideas without having to pay for them?

As we saw in the IInco Case, that is exactly what happened to the IInco Corporation. The founders made the decision not to patent the technology due to the expense and time delay and potential contention with their partners. Instead they tried to protect the technology as a trade secret and attempt to innovate faster than any imitator could follow. It worked for several years, but eventually a number of fast followers entered the market. There is no perfect way to protect your intellectual property.

In this chapter, we will try to provide some of the basics of the acquisition and management of intellectual property to allow founders of new ventures to consider the options and make the trade-offs required for the execution of the best strategy.

To begin, there are four main key forms of Intellectual Property (IP). We will see that each has its own advantages and disadvantages. They are:

- Patents
- Copyright
- Trademarks
- Trade Secrets

Patents

Patents are often the first thing that scientists or engineers think of when dealing with intellectual property. A patent is a grant from the federal government conferring the rights to exclude others from making, selling, or using an invention for the term of the patent as many as 20 years.

To obtain a patent, an invention must:

- Be novel. It must be something that is completely new. If others have done it before and disclosed that, then it cannot be patented.
- Not be obvious to a person of ordinary skill in the field. This is often the point around which patent disputes start. If one can show that an idea would be obvious to anyone skilled in the field then it cannot be patented. Sometimes that can be in heavy dispute.
- Be useful: You cannot patent something that does not have an obvious immediate use.

- Prior to 2013 you had to be the first to invent. Now you need to be the first to file.

There are three basic forms of patent protection that are each designed to do something a bit different.

- The Utility Patent: The duration is 20 years from the date of the original application. It is awarded for any new or useful process, machine, manufacture, or composition of material or any new and useful improvement thereof.
- The Design Patent: The duration is 14 years from the date the patent is awarded. It is awarded to protect the invention of a new, original, and ornamental design for manufactured products.
- The Plant Patent: The duration is 20 years from the date of the original application. It protects any new varieties of plants that can be reproduced asexually.

You can patent any:

- Process
- Machine
- Manufacture
- Chemical formula
- Design
- Plants

There are some definite **advantages** to having a patent. A patent:

- Provides a monopoly right for the life of the patent
- Raises the cost of imitation
- Helps to raise capital by demonstrating competitive advantage
- Investors like to see that the intellectual property behind a new venture is protected so that someone else cannot come along and easily enter the same market.
- Prevents a second party from using the invention as a trade secret
- Allows cross-licensing of multiple patents (with potential royalties or joint profits)

There are also some **disadvantages** to patents. The patent:

- Requires disclosure of the invention: This means that others can see how you did it.
- Provides only 14-20 year monopoly: When a drug goes off patent, then the generic imitations quickly eliminate the original market.
- Can be circumvented: By looking at your disclosure, a competitor might find a way to invent around your patent.
- Is difficult and costly to defend.
- Is often less effective for most types of technology. It can be irrelevant if technology is fast moving
- Requires world-wide patent application: The rules can be different and the process is costly, but failure to do so means that you may lose the market in that country. The good news is that the patent changes in 2013 have helped make global patenting easier.

Remember that it is *more costly to defend and enforce a patent* than it is to obtain a patent.

Case: Apple Design Patents: Defending the patent may be more difficult than obtaining it

As an example of how long and expensive defending patents can be, consider the case of certain Apple design patents. Here is the timeline of events, lawsuits, decisions, and actions that began in 2007 and continues today over ten years later. It goes without saying that the legal expenses of this fight are enormous.

- Jan. 5, 2007: Apple files for 4 design patents covering the basic shape of the iPhone a mere four days later, Apple releases the iPhone to the public.
- June 2007: Apple files color design patents covering 193 screen shots of graphical user interfaces for the iPhone.
- April 15, 2011: Apple sues Samsung for infringement based upon these patents, some utility patents, registered trademarks and trade dress rights.
- Samsung counter sued in both Korean and Japanese courts
- Apple sued in German (EU), Dutch, and Australian courts.
- Samsung sued in Italian, British, and French courts.
- There were then quite a few conflicting decisions that barred sales of Apple in some jurisdictions and Samsung in others.
- August 24, 2012: A U.S. Court the jury returned a verdict largely favorable to Apple. It found that Samsung had willfully infringed on Apple's design and utility patents and had also diluted Apple's trade dresses related to the iPhone. It had infringed: home button, rounded corners, tapered edges, bounce-back effect, tap to zoom, and on screen navigation.
- The jury awarded Apple \$1.049 billion in damages and Samsung zero damages in its counter suit
- October 23, 2012, U.S. Patent and Trademark Office invalidated Apple's bounce back patent
- Dénouement Reuters: Andrew Chung; NY; Dec 4, 2015 12:00pm EST: *“Samsung to finally pay Apple \$548 million in patent dispute.”* <http://www.reuters.com/article/us-apple-samsung-payment-idUSKBN0TN20R20151204>

This is a long, sad, and expensive story and it has not yet reached the final conclusion.

For those interested in the detailed history please see the Wikipedia entry at:

https://en.wikipedia.org/wiki/Apple_Inc._v._Samsung_Electronics

To make a long story short, the two companies continued to spar and try to ban one another's product –with some partial successes over a decade.

The moral of the story: Patents are not that hard to obtain, but they are very difficult to defend. It often costs far more to defend a patent than to obtain a patent. In this case, it was two large companies with very deep pockets doing the fighting. If you are a small company fighting back against a big company, it is usually difficult to do. Large companies sometimes infringe a patent, knowingly or not, and then rely on their extensive legal teams and deep pockets to keep doing what they are doing as the case works its way through court or the smaller company settles to minimize their expenses. This was one reason that the ILinc founders elected not to spend the money and delay the product to (potentially) obtain a patent that they would likely have to defend in any case. Other observers might retort that if ILinc had obtained the patent and defended it, that they could have had a monopoly in the market place.

How patents became the rocket fuel of technological entrepreneurship

The Bayh-Dole Act in 1980 (named for Senators Birch Bayh (D) and Robert Dole (R)) gave the patent rights for intellectual property created in university research funded by the federal government to Universities. Prior to Bayh-Dole, the rights went to the Federal Government.

In order for a patent to be valuable enough to cause an organization to invest the money to commercialize it, that industry needs to be assured that they have rights to use the IP and that others cannot easily imitate their work. Prior to Bayh-Dole, an enterprise could not be assured that they had protected rights to intellectual property. Prior to the enactment of Bayh-Dole, the U.S. government had accumulated 28,000 patents, but fewer than 5% of those patents were commercially licensed.

After Bayh-Dole, Universities got very good at licensing IP to industries. This gave the industries the protected rights that they needed and it also created a significant revenue stream for Universities and Government labs.

As the number of patents, many for doubtful products and business methods, proliferated over the last few decades, another form of patent abuse began to arise. Companies with no other mission would simply buy up collections of existing patents and then find companies that they could sue while claiming the company was infringing their patents. Larger companies would often make the business decision that it would be cheaper to pay them off than it would be to fight them in court.

These people are often known as “**Patent Trolls**”¹ and one can debate whether that is fair or not².

Recent Supreme Court Decisions appear to be reducing the number of cases being filed.³

The dramatic changes of 2013

In 2013 the US patent law was changed dramatically. The US converted from “**First to Invent**” to “**First to file**” in 2013. For this reason you should be careful not to follow materials written under the old law, since that could invalidate your patent opportunities. Before 2013, there was a lot of effort invested to establish who first invented any particular idea/patent. That was why documentation was so important. Now this is no longer relevant. If you invent something and keep it secret and someone else finds out about it and files the patent, you will find it difficult to stop them. The patent priority will go to the first to file.

The US also agreed to recognize any filing in any WTO country as establishing the same priority as if it was filed in the US.

Title 35 USC Section 119 (a) An application for patent for an invention filed in this country by any person who has, or whose legal representatives or assigns have, previously regularly filed an application for a patent for the same invention in a foreign country which affords similar privileges in the case of applications filed in the United States or to citizens of the United States, or in a WTO member country, shall have the same effect as the same application would have if filed in this country on the date on which the application for patent for the

¹ http://en.wikipedia.org/wiki/Patent_troll

² <https://www.eff.org/issues/resources-patent-troll-victims>

³ <http://www.motherjones.com/kevin-drum/2014/10/after-supreme-court-decision-patent-trolls-getting-cold-feet>

same invention was first filed in such foreign country, if the application in this country is filed within twelve months from the earliest date on which such foreign application was filed.

Prior to 2013 there was a lot of uncertainty in patent protection for natural products. Could naturally occurring genetic sequences be patented? Could a company patent its DNA amplification technique (scientific process)? Could the sequence of events constituting the test be patented?

Things changed in 2013. Before 2013 genes could and were patented in the US. After 2013 naturally occurring DNA could NOT be patented. Synthetic “complementary DNA (cDNA)” however could be patented since cDNA does not occur in nature

The Business Method Patent

In 1998, a Federal Court ruling assigned the US Patent and Trademark Office (USPTO) the responsibility of issuing patents for unique automated technologies that process data or generates revenue. This can be business models, methods, or processes—including computer software.

Suddenly, e-commerce features such as subscription-based access, targeted advertising networks, portal sites, online auctions, virtual malls, and even forums were now considered business models, methods, and processes that could be patented.

The Business Method Patent has become a very important form of patent in the eCommerce and other internet mediated business interactions. A business method patent is a patent that protects an invention that is or facilitates a method of doing business. This includes new types of e-commerce, insurance, banking, tax compliance etc. This is a relatively new type of patent and continues to be the subject of controversy and litigation.

Here are a few important examples:

- Amazon.com’s one-click ordering system,
- Priceline.com’s “name-your-price” business model
- Netflix’s method for allowing customers to set up a rental list of movies to be mailed to them.

Some areas of Business Method Patents⁴

- Financial - credit and loan processing, point of sale systems, billing, funds transfer, banking clearinghouses, tax processing, and investment planning
- Financial instruments and techniques – derivatives, valuation, index-linking
- Optimization – scheduling and resource allocation
- Marketing - advertising management, catalog systems, incentive programs, and coupon redemption
- Information acquisition, human resource management, accounting, and inventory monitoring
- e-commerce tools and infrastructure – user interface arrangements, auctions, electronic shopping carts, transactions, and affiliate programs
- Voting systems, games, gambling, education and training

⁴ <http://eml.berkeley.edu/~bhhall/papers/BHH%20on%20BMP%20May03WP.pdf>

Trademark

A trademark is any word, name, symbol, or device used to identify the source or origin of products or services and to distinguish those products or services from others.



Figure 1 Example Trademarks

The Trademark Law Protects:

- Words
 - Excluding:
 - Pure description of a product/service
 - Deceptive marks
 - A mark consisting primarily of a surname
- Numbers and letters
- Designs or logos
 - Must be distinctive rather than generic
- Sounds – Distinctive
- Fragrances – Cannot enhance the use of the product
- Shapes – No impact on the product’s function
- Colors – not functional
- Trade dress
 - The manner in which a product or a business is “dressed up” to appeal to customers is protectable.

The process is quite simple. Select an appropriate mark, words, design, logo, sound, shape or other legal trademark. Search the Trademark Office files to see if it is already in use. Register the trademark. You can claim a trademark even if you do not register it, but the protection may not be as complete.

Trade Secrets (Coca Cola formula for example)

A trade secret is a piece of knowledge that confers an advantage on a firm and is protected by non-disclosure. This allows a company to protect a competitive advantage without disclosing how an underlying technology works.

There are some disadvantages:

- Must be kept hidden to remain valuable
- Doesn't provide a monopoly right
- To enforce and claim damages in court, must show a loss of competitive advantage

What qualifies for trade secret protection?

- Is not known outside the company
- Is known only inside the company on a "need to know" basis
- Is safeguarded by stringent efforts to keep the information confidential
- Is valuable and provides the company a compelling competitive advantage
- Was developed at great cost, time, and effort
- Cannot be easily duplicated, reverse engineered, or discovered.

If you don't take active steps to protect it, then you lose it.

Copyrights

A copyright is a form of intellectual property protection that grants to the owner of a work of authorship the legal right to determine how the work is used and to obtain economic benefits from the work.

What is Protected by a Copyright?

- Literary works
- Musical compositions (and derivative works)
- Dramatic works
- Pantomimes and choreographic works
- Pictorial, graphic, and sculptural works

Copyright law protects any work of authorship the moment it assumes a tangible form. Technically, it is not necessary to provide a copyright notice or register work with the U.S. Copyright Office. The following steps can be taken, however, to enhance copyright protection. Copyright protection can be enhanced by attaching the copyright notice, or "copyright bug" © to something. Further protection can be obtained by registering the work with the U.S. Copyright Office.

For those interested in more detail on these issues you may wish to consult my text on Technological Entrepreneurship:

<http://www.jackmwilson.net/Entrepreneurship/TE/TE-Chap4-IntellectualProperty.pdf>

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I also have several cases that illustrate these principles

- <http://www.jackwilson.net/Entrepreneurship/Cases/Case-CRISPR-MITvsUC-IP.pdf>
- <http://www.jackwilson.net/Entrepreneurship/Cases/Case-Napster-Ethics-Legal.pdf>