

# The Inventor's Survival Guide



Research, Realize, Protect

A 6.931 Project

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## Research

### Patent Search

The most basic and very first thing an inventor should do before pursuing an idea is to look for an existing patent. The Lemelson-MIT Invention Guide emphasizes the definition and importance of such a search:

“A patent search is a subset of the prior art search in which you look for mention of similar ideas in academic and technical literature, etc. You must conduct a prior art search, including a patent search, and submit your findings along with your application to the USPTO. An inventor has a legal obligation to disclose relevant information of which they have knowledge. You can be sued if it is discovered that you knew about other similar inventions or relevant information, and did not submit that information to the USPTO. This is called inequitable conduct or fraud on the patent office.”<sup>1</sup>

There are a few choices, as given by the MIT Lemelson Invention Guide:

“Online databases: The USPTO has made online searching of its databases available to the public at no charge at <http://www.uspto.gov>. A few other free online search systems are CASSIS (a CD-ROM based search engine), the Delphion Research Intellectual Property Network (formerly the IBM patent site), and the Source Translation and Optimization (STO) Internet Patent Search System.”

“The Public Search Room of the USPTO in Crystal City, Virginia: Your local patent depository library,  
<http://www.uspto.gov/go/ptdl/index.html>,

describes the US Patent and Trademark Depository Library Program, as well as gives the names and locations of patent depository libraries, state by state. Note: not every patent depository library has a complete record of USPTO information.”

“A reputable patent practitioner or professional organization: Patent attorneys and agents who meet specific legal, technical and ethical qualifications are registered by the USPTO. Be aware, though, that the USPTO has no control over patent practitioners or organizations, and reputable search firms use the same advertising techniques as unscrupulous ones. That’s why it’s advisable to check the reputation of any invention promotion firm.”<sup>1</sup>

### Prior Art (Existent Technology)

In order for an innovation that builds upon or is an improvement on current technology to be successful, the innovation does not have to outperform the best and most expensive comparable product. The innovation simply must economically offer some characteristic that has demand. Most of the time, finding information about specifications of existent technology is easy since existing manufacturers *want* to sell their products. When researching a specific product, filtering out marketing jargon and interpolating designs for unpublished product components are the biggest challenges.

A convenient starting place to find specific characteristics of existing products is simply the

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<sup>1</sup> Lemelson MIT Program, “The Inventor’s Handbook.,”  
<http://web.mit.edu/invent/h-main.html>.

Internet. Almost all hardware vendors publish downloadable datasheets of their products. Be extra wary when reading specifications, however, since manufacturer's test conditions may not be practical. For example, when Intel boasts a 3.2GHz clock speed for the Pentium M Extreme 840 on their website, they neither specify the ambient temperature nor the testing time duration. A common trick that processor manufacturers use for marketing their products is to publish test results for processors operating in a refrigerated environment for very short time intervals. Low external temperatures can allow the processor to operate at clock speeds almost an order of magnitude greater than processors in everyday computers, which may be choking in bathtub temperatures. Published processor specifications can also be misleading if the test processors were overclocked with no regard for durability. A reliable method to accurately gauge the performance of the Pentium M 840 may simply be to physically measure its characteristics while in operation. Many vendors, such as MicroChip, Texas Instruments, and Fairchild Semiconductors, readily give free samples of their products. A microprocessor inventor, for example, can conveniently and economically compare practical performance of his or her microprocessor with sample microprocessors.

Some hardware products, such as circuit elements, have much more extensive datasheets simply because they have many variations. For example, there are countless genres of transistors (JFET, MOSFET, MESFET, to name a few); each genre divides into specific application groups (power, signal, economical,

size, discrete, integrated, surface mount, etc.). The best way to find information on and compare existing transistors is to search the catalog of large electronics distributors such as NewarkOne and Arrow Electronics. Large vendors want their clients to conveniently fulfill their needs and pre-categorize and list their products. The crafty inventor of a new transistor, for example, can conveniently search through electronics distributor catalogs and discover whether there is a hole that his invention can fill.

The rule of thumb for finding information about existing products is to pretend to be a consumer and look for vendors. Although vendors are happy to divulge information about their products, vendors' descriptions must also be read with caution.

### **Prior Art (Novel Technology)**

Determining whether a product has already been invented can be a tricky business. At the same time that the inventor must ask around, the inventor must be careful not to accidentally divulge too much of his or her idea (for example, to a vendor or manufacturer with a team of research engineers who may be hungry for new ideas).

Internet searches, such as search engine queries and patent office database searches, are safe but provide no definite answer. For example, an inventor of some novel sports medical device can search for similar devices online, find no related prior art, and most definitely cannot conclude with confidence that his or her device has not

been implemented. The patent database may have a similar device under a completely different name and description, and Google may simply not index such a device because it is not available online. The benefit of Internet searches, however, is that they can provide assurance *not* to pursue a questionably novel device if a search for such a device returns hits.

A mostly safe method to find information about nonexisting products is to look at places with related demand and cautiously inquire the reason that they have not explored certain options. For example, the inventor of a novel sports medical device may call physical trainers, athletic facilities, and athletic organizations and ask what options they have to deal with problems that the novel medical device handles. If many consumers who clearly have demand for such a novel product are unaware of the existence of such a product, there is a great chance that the novel product is truly novel. The chance that the market is inefficient- that consumers simply do not know their options or producers simply have not successfully divulged their supply information to consumers- decreases as the inventor contacts more and more consumers with demand.

## Markets

The Prior Art section assumes that the inventor knows where the rival producers and potential consumers with demand for his or her invention are. In reality, the best markets for inventions often do not involve everyday consumers and are not so easy to identify.

In a good example, E-Ink (now a corporation) started with an ultra-thin variable display paper-like invention by J. D. Albert and Barrett Comiskey in the mid 1990s. Albert's vision for his novel displays was a future in which newspaper would be replaced by his sheets of programmable electronic paper. The obvious demand for electronic paper, from Albert's vision, lies in publishing companies and possibly in the electronics display sector. It is not and will not be possible for E-Ink to directly sell to any of these market sectors simply because electronic paper has remained in and continues to be in development phase.

Instead of looking for consumers with direct needs for electronic paper, E-Ink pushed its products to some of its competitors, including Xerox, HP, and IBM. To simplify a very complicated market, Xerox sold paper, HP sold printers, and IBM researched new display products. If E-Ink successfully released electronic paper into the consumer market, demand for Xerox and HP's products could drastically change, and some of IBM's prior research efforts become worthless. Immediately upon publicly revealing the first prototypes for electronic paper, E-Ink received numerous buyout offers from potential rivals.

Nowadays E-Ink has many partners including Micronyx (an analog IC manufacturer), Midori Mark (an electroluminescent display manufacturer), and Royal Philips Electronics. All of these companies realized that E-Ink could be a consumer for *their products* and therefore offered E-Ink their services.

E-Ink's history contains perfect examples of unexpected markets for an invention. Since an invention may require years or decades of research, prototyping, and legal battles before it becomes a viable product on an open market, the inventor should look for all sorts of methods of promoting and selling his invention. The E-Ink example illustrated that rivals and complementary industries can become very rewarding markets.

### Feasibility

The Lemelson-MIT Guide outlines a good business plan as crucial to survival of a marketable invention:

- “A summary of your product—what it does, its advantages and patent status
- A marketing analysis, including market opportunities and competition
- Projected sales, pricing and distribution
- Production plans, methods, costs, capacities and implementation timeline
- Management personnel
- Financial statement, cash flow budget, suggested wholesale and retail prices  
Projected profits”<sup>1</sup>

A decision that every inventor must face is whether to actually pursue his or her idea. Not every invention can generate a large sum of profit for the inventor, and certainly not every invention can mark the inception of a new industry. Feasibility issues not only involve the

invention itself, but also involve the values of the inventor or inventors.

Should research and development of an invention require at least a decade of time, for example, and suppose the inventor plans to have family responsibilities in that duration of time, the inventor needs to make serious decisions about sacrificing a decade of time and career opportunity costs.

In order to make such a decision, the inventor must compare his or her alternative life to his or her life pursuing his invention. Naturally, the faster that his invention can generate benefits, the more promising the invention becomes. Specifically, the faster that the inventor can secure investments or find a way to successfully sell his invention, the more practical the invention seems. The mood of investors and the way that markets respond to new products, however, changes with different trends in technology as well as different outlooks in the equity and fixed-income markets.

Feasibility of an invention depends much on timing of the markets and technology trends. For an accurate and in-depth analysis of the markets and technology trends, inventors cannot simply read a periodical or browse the Internet. Professional conferences are a great opportunity to find out views of market and technology trends from leading professionals in respective industries as well as for inventors to confer with knowledgeable peers about their ideas. IEEE, for example, holds conferences on different genres of electronics and electrical engineering throughout the year and throughout the world.

In general, inventors must try to look at their invention from perspectives of both consumers and producers in different markets when assessing the feasibility of their invention. A view of the stock and credit markets and future interest rates can shed light on the potential of finding good investors. A view of the foreign exchange markets can reveal important caveats about manufacturing in, trade with, and competition from other countries. Research of future developments and trends and potential developments complementary industries can reveal an outlook of the potential demand for an invention. As shown, immediate money issues, design roadblocks, and gutshot feelings are necessary but not nearly enough issues to consider for an accurate feasibility analysis.

## Realize

An inventor who wishes to maintain control of his intellectual property/idea must tackle the task of starting a business. Starting a business is not a cheap endeavor, and the inventor must assume all financial risks and start-up costs. It is essential that the inventor have a plan for commercializing and bringing his idea to fruition. In order to raise the necessary capital/assets to realize an idea, the inventor must understand:

- Where to get funding?
- How to get funding?
- How to manage funds to progress through manufacturing and production after acquiring the necessary funding?

## Sources of Funding

In general, starting companies have few assets and an even sparser business history. Whether raising capital to fund a patent, a prototype, production, or a company, most inventors would receive little help from the nation's banking system without large collateral<sup>2</sup>. In this section, we cover angel investors and venture capitalists, the primary sources for *equity-financing*<sup>3</sup> a start-up business.

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<sup>2</sup> Banks are risk-averse, and will often refuse to loan money to start-up businesses [1]

<sup>3</sup> *Equity financing* is an exchange of share(s) of ownership for funding for a business [2]

### **Angel Investors** [ \$30,000 – \$800,000 ]

Angel investors or “business angels” are wealthy speculative individuals who take on high-risk, early-stage investments seeking enormous returns. Angels are sometimes successful and experienced entrepreneurs, who wish to profit from and be involved in the growth of a starting business as mentors. They are often elusive, but are ideal sources for funding the earliest stages of product development (prototyping etc.) For a new inventor, seeking funding from an angel investor as opposed to a venture capitalist firm (described below) has the following advantages:

- **Guidance vs. Dictatorship:** An angel investor’s primary goal is not to take over a company, but rather to be involved in taking on a new challenge of building a company and maintaining a nice return on their investment.
- **Financial requirements:** Angel investors may have more relaxed financial requirements than banks and VC firms. When dealing with individuals, acquiring funding can be a much easier and quicker process [1].

### **Venture Capitalists** [ \$1 million – \$4 million ]

A venture capitalist firm is a company or partnership that provides a higher level of investment to starting businesses than angels. VC firms are the natural progression to the next stage of funding, investing billions of dollars in new ventures every year. However, most VC firms concentrate on leveraged buyouts and merger/acquisitions, and tend to only invest in business ventures that have completed the proof of concept and prototype development stages [2].

To offset the (significant) risk of investing in a start-up, a VC firm will often demand direct control in making hiring decisions for a start-up company’s board of directors and/or executive management. One caveat of this is that a VC firm might end up controlling so large a portion of the successful company that the founders regret using the VC firm as a source of funding [3].

VC firms focus on the “business of building businesses” [4] and have a broad view on the industry as a whole and on how numerous business structures interact and operate. Thus, under the right circumstances, a VC firm can provide valuable insight as a consultant to the inventor.

What to look for in a VC firm:

- A bias towards investing in early-stage companies.
- A portfolio breakdown that matches the inventor’s target industry sector.
- A minimum level of investment that matches the amount of funding needed.



- Geographic preferences for new ventures that match with those of the inventor's business.

### Acquiring Funding: Your Sales Pitch

Before asking investors for money, the inventor must produce a bulletproof business plan to show that the start-up business is built around a viable product idea, and that the inventor has produced a solid set of numbers in the financial budget for the product's development and distribution.

#### Business Plan

A real, practical, working business plan is essential to capturing investor interest and attention in funding a business. The business plan describes the business's vision & timeline, marketing strategy, management strategy, and (perhaps most important to the investor) financial planning for realizing the product [5].

A business plan must be concise and well written—some investors spend as little as 5-15 minutes reading each business plan before deciding whether to invest [4]. The business plan should offer glimpses into the past (prior art research), present (current marketability), and future (projected revenue) of the start-up company [1].

A general structure for a business plan is as follows:

- **Executive summary:** A succinct overview of the business and its objectives.
  - Legal entity: proprietorship, corporation, limited-liability company etc.
  - Business objective: product and vision
  - Growth opportunities: why the business will generate profit.
- **Market analysis:** An assessment of the marketability of the product, potential target customers, and the current state of competition.
  - Customer analysis: identify the target audience/customer
  - Evaluate market size and expansion opportunities
  - Evaluate competitor businesses.
- **Marketing Plan:** A clear plan for how to introduce the business product to the market and major milestones in the product development cycle.
  - Pricing, commercialization, and sales strategy (and why each will work).
- **Management Plan:** Qualifications/credentials of the inventor and his partners.
  - Define management duties, hiring/personnel needs, and operations plan.

- Establish credibility for the founding team of the business.
- **Financial Plan:** Quantitative assessment of start-up, short-term, and long-term costs/profits for the business. The inventor should think through all of the major financial numbers and how they map to different stages of the company's maturity.
  - A sound, realistic budget for start-up costs:
    - e.g. personnel, prototyping, beta testing, legal fees, licenses, insurance, equipment, accounting, advertising costs,
    - initial manufacturing cost etc.
  - Projected costs to sustain operation and to stay in business
    - e.g. rent, depreciation of equipment, taxes, insurance, production etc.
  - Projected profits, expenses, and revenues for the first 3-5 years of operation. Specifically, finance numbers for the first 12 months of operation should be presented in ample detail [6].

After reading the business plan, potential investors should come away with an exact idea of where, when, and how their money will be spent and *why*.

#### **What Potential Investors look for**

Market research gives insight into what customers desire in a product. Similarly, selling a business idea successfully to an investor hinges

upon meeting the investors' expectations. Though establishing investor relationships is a case-by-case ordeal, we have compiled a list of fundamental guidelines:

- **High growth opportunity** – Depending on the stage of the inventor's business, a VC firm might expect a 25-50% return on investment (ROI), while angel investors expect less [2]. In general, higher rates of return compensate for earlier-stage involvement in funding the inventor's business. The inventor should make sure that his financial projections satisfy the investor's ROI.
- **Differentiated product** – Angels and VCs alike are excited by innovative products, which are demonstrably superior or unique relative to the rest of the market [2]. The inventor's pitch should emphasize the product's innovative design and value to customers. Building a prototype is an excellent proof of concept [7].
- **Intellectual Property** – having a [pending] patent on a product idea generates enormous credibility for the inventor. A patent is a concrete indication that the idea is feasible, novel, and under legal protection. Additionally, the inventor should readily provide any documents that reinforce his credibility and knowledge (such as a 3<sup>rd</sup>-party evaluation of the market or product).

- **Stake of ownership** – investors want some measure of control so that they may influence the direction of the business. The distribution of equity to shareholders is also a projection on the worth of the company (e.g. a shareholder who donates \$50,000 receiving 10% ownership would suggest that the company is valued at \$500,000 [8]).
- **Strong management** – good ideas do not “market” themselves. A strong, aggressive, and knowledgeable management team is essential to establishing credibility of the business as well as executing the business plan. Make sure to understand each founder’s qualifications and value his/her contributions accurately.

## Protecting Your Idea

### Confidentiality

“Why keep secrets?”

People keep secrets when they are afraid that certain information may be used against them if other people know about it. Kids experience this kind of interaction all of the time. Oftentimes they will not tell other people who they like or what they did wrong in fear of other kids making fun of them or parents punishing them.

This exists in the business world, but in a slightly different form. Engineers and innovators are constantly coming up with ideas to help a company grow and succeed. However, if a competitor gets a hold of their ideas, much of their success could be compromised or even lost. It is this thought process that leads most businesses to require employees to sign confidentiality agreements that legally bind workers to keep secrets within a company.

However, if you are reading this, you are probably an individual inventor or small team of innovative thinkers, not a large company. What does keeping secrets have to do with you? Well, for starters, certain kinds of legal protection are governed by who knows the information and how long they have known it. For example, publicly disclosing an idea starts the one year clock ticking to file for a patent in the U.S. and may keep you from being able to obtain patent protection in foreign countries. Public disclosure includes web page publishing, advertisements, fliers, academic publishings,

presentations, and most other forms of telling a large group of people about your idea without a confidentiality agreement. Sadly, even telling close friends can fall under this category if not approached with caution.

#### The Need for Non-Disclosure Agreements

But what if you want to share your idea with others to improve upon it or assess potential markets? A document that legally protects your privacy and the threat of public disclosure can be signed before disclosing your idea to another party that offers this security. A Non-Disclosure Agreement, or NDA for short, is a common way for inventors to do just that and it only takes a minute for both the inventor and the listener to fill out, sign, and date the document.

NDAs come in many flavors, but the general idea is always the same. The inventor agrees to show the listener the new idea. The listener then agrees to keep whatever is shown or discussed to them by the inventor in strict confidentiality. They both agree to uphold the contract by signing and dating at the bottom of the form. Both parties then receive a copy of the document for their own records of the legally binding agreement.

Please be aware, however, that the idealizations of NDAs are often somewhat different from the realities you may encounter. First of all, prosecuting someone who signs an NDA and then does not hold up their end of the agreement is very costly and time consuming. Secondly, there are politics involved. Most

people don't want to have to tell their friends that they cannot be told about a project unless they sign a paper to guarantee secrecy. Many people think signing such a document shows a lack of trust in their relationship with one another and therefore may feel offended by such a request. Do not let this change your decision. Calmly explain that such an agreement is very important to legally protect you from others potentially claiming your idea as their own.

#### Trade Secrets and Their Shortcomings

If secrecy is really the way to go, why consider a patent that the whole world will be able to see? In certain cases, secrecy may in fact be your best option. For example, the recipe for the soft-drink Coke is a trade secret and therefore not known by anyone outside the company. This has the advantage of never being exposed to the public and also does not carry with it the 20 year limited protection that one can expect from a U.S. patent. If someone independently were to come up with the recipe for Coke, they could choose to publish it and the Coca-Cola Company could not take any legal action to stop others from making their product.

Trade secrets must be both useful to a particular trade and valued since its conception enough that holders of the secret have practiced due-diligence to keep it from being known to the public. Trade secrets are not explicitly protected by the government except as to hold malicious individuals accountable for stealing or revealing the secret to those that should not know it. Having a trade secret does not provide any form of exclusionary right that would allow

the trade secret holder to prohibit anyone else from making, distributing, selling, or publishing the secret. It is this lack of protection that makes trade secrets very risky and undesirable in almost every situation in which a patent could be pursued. If a secret does not fall into a class of patentable ideas, a trade secret may be the only way to move forward without generating a large amount of competition.

### Patents

“I’ve always wanted a patent! How do I get one?”

The answer to the question above is simple, but very misleading. Simply come up with an idea that is novel, useful, and non-obvious, document and prove that your idea is feasible, then apply for a patent via the U.S. Patent and Trademark Office. So why is this misleading? Well, the problem here is with the question, not the answer. People do not receive patents because they have always wanted one. Rather, patents are expensive, well-thought out legal documents that should only be pursued if it is beneficial to a company or organization. Having a patent on a shiny plaque hanging from your wall does you no good. It is merely a statement of legal protection that allows the patent holder to prohibit others from making, using, or selling the patent holder’s device or idea. I use “merely” lightly here since this exclusionary right has been the foundation for many successful companies worldwide.

Patents are a very unique kind of protection in the United States and have been since the

creation of the U.S. Constitution. The only groups of people given rights by the U.S. Constitution are those mentioned in Article I, Section 8, Clause 8, in which it clearly states that the U.S. Congress shall have the power

**“To promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.”**

This exclusionary right, or patent in the inventor’s case, is a great way to promote progress in a competitive economy but its time and cost may be more trouble than it is worth in rapidly changing or over-saturated markets.

The take-home message should be clear. A patent does not give you the right to proactively do anything. The ability to exclude others from making your invention is the only right a patent gives you. So, for example, if your patent were to use within it something else that was recently patented, you would not be able to make, use, or sell your invention without first negotiating some kind of agreement with the patent holder of the underlying technology. This is counter intuitive to most inventors who think that a patent is a ticket to the top of the business world. Without the ability to make the device, most companies would probably find such a patent to be of little or no use to them unless they are concerned with a potential competitor that could use it to their comparative advantage.

It also important to note that having a patent is not a requirement to produce or sell something new. In fact, taking the time to file and actively pursue a patent may not be in your best interest if the idea is specific to a fad, fashion, or specific modern day lifestyle. For example, filing a design patent on a stylish pair of paisley pants that will only be in style for a year or two is probably not worth your time. Another example of a time when filing a patent is probably not a good idea is when the innovation you have made is specific to a particular make or model that is sure to change in a short period of time – like a cordless telephone add-on that only works with a GE 2-6920-R model handset. Sure, there are a lot of those specific phones in the world today, but the 20 year exclusionary right that comes with a patent is probably not near as important as getting your product to market while the phones are still being sold and widely used.

A good question to ask yourself before pursuing a patent is, “Does excluding others from making or using my invention significantly increase its value?” If the answer is “No”, you should definitely consider other routes besides patenting to help you license, market, manufacture, or sell your invention since filing a patent may be of little or no use to you.

### What can be Patented?

There are three classes of patentable inventions. Utility patents cover the function of a device, a unique process, or a new kind of machine. Design patents are used to protect the form, look, or feel of a particular invention. The last

category is for Plant patents that mainly focus on splicing and breeding methods to produce more specific or useful plants. The main focus of this guide will be on Utility patents since those are the most common form of legal exclusionary right that inventors often desire.

Utility patents are divided into four subcategories. These include machines, articles of manufacture, compounds, and processes. There are many smaller categories within each of these to more specifically classify an invention. Pay attention when searching through patents to the smaller categories in which similar patents reside as this can be used to greatly narrow a large list of search results.

The three criteria that are required for an idea to be eligible for a patent are novelty, usefulness, and non-obviousness. Patent examiners pay close attention to these criteria and a granted patents will explicitly cover all three.

- Novelty  
The invention must be new and never patented before in the U.S. or publicly disclosed, in the U.S. or abroad, more than 1 year before filing for a patent. Public disclosure includes posters, presentations, demos, experimental sales, web page publishing, magazines, and many other similar forms of non-confidential showings.
- Usefulness  
The invention must be useful to its intended audience. This is often a subjective criterion that requires some explanation to the patent examiner if the device is ambiguous or does not include a basic usage case. Two types of inventions that are not allowed are perpetual motion machines and devices that defraud people.
- Non-Obviousness  
The invention must not be an obvious solution to someone skilled in the art if faced with the same problem. What is non-obvious in one field may be obvious in another. Clear proof that an invention is in fact non-obvious often includes a product's commercial success in a field hungry for the new idea or a demonstration of need that existed but was not addressed until the creation of the invention.

#### When should I get a patent?

You should only pursue a patent after you have proved to yourself that the invention meets the aforementioned criteria. Usefulness and non-obviousness are often considered by one's own experiences and background research in the field of study. Novelty most often is accompanied by researching technical articles and publications in the field, and a thorough patent search. You may not be able to search the U.S. Patent and Trademark Office's patent database as well as a trained professional, but a preliminary search should be used to get a rough idea of what similar intellectual property already exists and what your invention has that the others do not. (see <http://www.uspto.gov> )

You can file a patent application yourself, but with such long turnaround times in the patent office (currently between 3-4.5 years), it is probably a good idea to seek outside assistance from a patent attorney. If time or funding is tight, a provisional patent application can be filed to lock in the filing date (remember, you only have 1 year after disclosure) and extend the deadline to file a full patent application by an addition one year. A provisional patent is fairly inexpensive and serves only as an extension on the filing date for the full application and as a record of proof that the conception of the invention was at least as early as the provisional filing date.

The patent process consists of a substantial amount of paperwork, time, money, lawyers, and much needed patience. It is not uncommon

to spend upward of \$10,000 US to work with an attorney to draft and file a patent for an invention. As mentioned previously, patents are not granted overnight. It can take months or even years to hear back from a patent examiner only to find that every claim you have submitted has been rejected. This is commonplace on the first submission and support for each claim is then returned if possible. This can go back and forth many times until the patent examiner finally decides to either grant or reject the patent application. There are routes to appeal unjust rejections from examiners but they are very expensive and quite undesirable.

You don't need a patent to start a successful venture. Some industries and business models grow either too rapidly or in directions not covered by patent classifications. Coke's choice to not apply for a patent has allowed them to remain successful for much longer than the 20 years of exclusionary rights that they would have had if they had chosen to file a patent. Other industries may change so rapidly that the 3 - 4.5 year turnaround time on patents may drastically hinder a product's ability to do well in a specialized market. Those too eager to wait but whom require the protection of a patent oftentimes find a middle ground in which a patent is filed and production is started, with the hopes that the patent will be granted, before the patent process is complete. This is why many high tech gadgets and trendy items often have "patent pending" printed on them.

## **Licensing and Production**

"How do I sell my ideas?"

### Licensing With a Patent

Since you have a patent, you can talk to just about anyone you want, trying to convince them to invest or be a part of your venture. Since you hold the roadblock to someone else's ability to make a device or use a particular process, companies may be interested in a licensing agreement with royalties and other forms of compensation in return for the rights to the patent. You should draft a 15-30 second pitch for your idea that could convince someone to meet with you for a serious discussion about your invention. This "elevator pitch" should be something you can use at any time just in case you happen to meet a potential investor or business partner at any moment.

Be careful! Some companies try to collect patents in a particular field for the sole purpose of keeping competitors from using, manufacturing, or selling the invention. This means that you should be wary of licensing agreements that only pay based on the number of sales of your invention as they may not have any real intent to sell a single one! Typically licensing agreements have a flat rate and an additional amount negotiated on a per unit basis. However, licensing agreements are rarely simple and often contain legal terms to protect each party in extreme cases and compensation structures that may be complex and vary with time. Many patent holders attempt the route of



venture capitalists to get started, but the risk that venture capitalists take by investing in you will most likely come back to bite you when they own the majority of the company.

#### Licensing Without a Patent

Kudos to you for trying to pursue an idea without a patent! Hopefully you've done your research and have the basic knowledge in your field to know the difference between a good idea and a great idea. The path you are about to walk is much more difficult than if you had a patent, so think carefully about what level of legal protection you need to convince a company to seriously consider your novel, useful, and non-obvious idea. If you don't, you will soon find out when you put it to the test by talking to professionals that may potentially want to take action on your idea.

The hardest part of selling your idea is trying to get someone to listen to you and keep confidentiality. Many large companies are scared of listening to outside private inventors that do not have some form of intellectual property (a patent in most cases) because they run the risk of being accused at a later date of stealing your idea, even if they were already working on the idea before they met with you. This means it is your job to ease this burden from the prospective investors if you want a better chance of meeting with them. Bring NDAs for both parties to sign and also bring whatever other signed and dated material may be relevant to your idea (notebooks, experiments, photos, etc.). Let them know that you would like someone to take detailed notes of

the meeting that you can both sign and date at the end so that both parties have an accurate record of the material that was discussed during the meeting. This helps them to feel more confident that you will not try to accuse them of stealing your idea unless it is what you actually spoke with them about.

Try to bring a small prototype if at all possible. A prototype is worth a thousand pictures and one of those picture is bound to stick in their minds. Make sure to remain open and honest throughout the entirety of your meeting as large companies are hesitant to do research and development with outside inventors they can't trust. Getting funding or partnership based on an unprotected idea is an extremely difficult task. Remain focused and diligent and think of all kinds of people and organizations that may have even the slightest interest in your invention.

#### Production

Depending on the nature of your invention, producing the invention yourself may be your best bet. This is especially true if you do not have a patent. Be aware, however, that without a patent you have no way to prohibit others from reverse engineering your product and making it themselves.

Oftentimes, production of an invention requires a large amount of machinery and a specific set of tools that enables your first-of-its-kind device to be created. For very small production runs, as is probably appropriate for most tests, using 3rd party resources and machines may be your

fastest and least expensive option. If you have decided on a larger scale operation you should make sure to fully consider the vast array of fixed costs and economies of scale associated with production.

For example, to produce a new plastic toy, you may need a sophisticated injection molding machine, assembly line components to move and alter the toys, and a facility in which to work and do business. Even though the prototype may have only cost a few dollars to build, making the same toy on a larger scale may cost millions of dollars for equipment and construction before the first toy can be produced. However, with high capacity machines producing millions of toys, the price per toy in large quantities may be much cheaper than the small-quantity methods used to construct the prototype. This fixed start-up cost and low marginal cost (the price to produce one additional unit) is typical in most manufacturing methods and should be completely thought out before asking for money from potential investors.

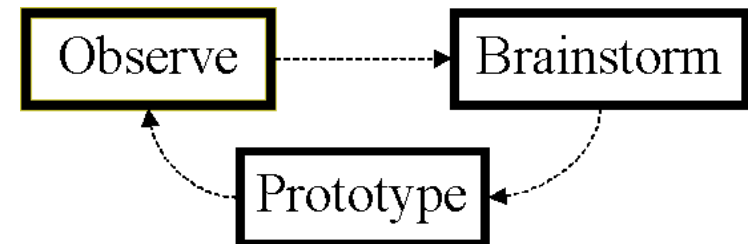
Keep in mind that both investors and buyers are your customers. You must never forget that they are the people who sign your paychecks and trust you to provide them with quality goods and services. Always take the time to get to know your customers and show them that you highly value their trust and financial support. Great companies start from great ideas and great people. Find both, and you will be well on your way to achieving success.

## A Final Note

Always be open to new ideas. *Always.*

Keep in mind that a healthy innovation cycle includes three tasks.

- Observe the problem at hand and how people deal with it.
- Brainstorm ways to solve that problem and others like it.
- Prototype your best innovative ideas. Then start over, observing how the invention does/doesn't work.



This simple diagram serves as a great reminder of the innovation cycle.  
(derived from *The Art of Innovation* by Tom Kelley at IDEO)

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