Intellectual property. Everything you wanted to know but were afraid of being told…

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What is Intellectual Property?

Intellectual property (IP) is a term that generally includes patents, trademarks, copyrights, trade secrets, etc and is playing an ever-increasing role in the commercial world.

Ownership of ideas may seem strange if you're not used to thinking about it. How can you “own” and idea? How can it be "property"? The more common and intuitive notion of property is some concrete, physical *thing* that can be hoarded or shared. Ideas, on the other hand, are recorded in the much more intangible medium of our minds.

The boundaries of what we commonly think of as property can be marked and patrolled, and those who would violate them by theft or invasion can easily be seen and stopped. In the realm of intellectual property, however, borders are anything but visible, and attackers can be anything but straightforward.

According to the World Intellectual Property Organization, an agency of the United Nations, there are two main branches of intellectual property:

- ***Industrial property***, which includes patents, trademarks, industrial designs, and trade secrets
- ***Copyright***, which includes literary, musical, artistic, photographic, and audiovisual works

While these things aren't always *material* creations, all of them are the products of human labour. Though you may not be able to hold it in your hand, intellectual property has unquestionable value. The Marlboro trademark, for example, is the most valuable piece of intellectual property in the world.

The Legal Concept of Property

Assets such as patents, copyrights, or the Marlboro trademark, are valued not necessarily for their physical incarnations (how much is that cellophane cigarette wrapper really worth? Or the paper a book is printed on?), but rather for the often intangible rights that accompany them. In legal terms, property is not the object itself. It is not the book you hold in your hand, or the car that you drive to work. Property is the set of rules and relationships that society has built up around those objects, the set of ways that you, and everyone else, relate to owned things (remember that those things aren't necessarily physical objects. In the case of IP, they can be intangible as well). Property is a set of rights that govern the way other people treat your things and the way you treat other people's things. In other words, your car itself is not property: property is the *right* you have to prevent others from using it.

Ultimately, the importance of the concept of property rests on the state's physical willingness and ability to enforce property rights. You rely on the state to help you protect what's yours. The state backs you up and enforces your property rights in the form of injunctions, which are in effect the equivalent of court orders to "keep off the

grass". They demand that others do not enjoy the benefits of your possessions unless you have given your permission to do so.

When thinking about Intellectual Property, it is important to keep in mind that the property right is a right of *exclusion*, which prevents others from using your possessions, but ownership does *not* automatically give you, the owner, the right to use your possessions yourself (this is especially important for patents). Think of the fireworks laws in some US states, for example, where it is legal for you to *own* fireworks, and property ownership keeps other people from legally walking off with your personal supply of them, but it's not legal for you to use your fireworks. You can't legally set them off.

Types of Intellectual Property

To illustrate the different types of Intellectual property, we will use the example of Kevin Amiss and Martin Abbott, who in August of 1995 patented a method for exercising a cat.

Patents

A patent provides the patent holder, or patentee, the right to exclude others from making, using, selling, offering for sale, or importing his invention for 20 years from the date the inventor files his application.

In essence, a patent is a government-sponsored monopoly, designed to reward the inventor by providing him with incentive to risk time, effort, and money in developing new technologies. The right to exclude others gives the inventor the first-to-market advantage in developing his product, and it allows him to prevent competition in the early stages of his commercialisation effort.

Patents are applied for and granted by the U.S. Patent and Trademark Office or it’s equivalent in your country. Unlike other types of intellectual property, patents are only granted to inventions that fulfil exacting standards of novelty, usefulness, and non-obviousness. As a result, the application and review process can be expensive and lengthy, often lasting up to four years. Whether or not a patent should be applied for in the first place is covered in further detail in the following chapter.

Patentable material includes machines, processes, articles of manufacture, compositions of matter, and improvements on any of these items - for all intents and purposes, anything produced by humans or the methods of such production. Aside from these utility patents, two other categories of patents are design patents, which cover ornamental design features of an item, and plant patents, which cover new varieties of cultivated plants (but not those discovered growing wild). Laws of nature, physical phenomena and abstract ideas cannot be patented.

How this applies to the method for exercising a cat: in 1995 Kevin Amiss and Martin Abbott filed a patent with the United States Patent and Trademark Office (USPTO), with the claim "A method for inducing cats to exercise consists of directing a beam of invisible light produced by a hand-held laser apparatus onto the floor or wall or other opaque surface in the vicinity of the cat, then moving the laser so as to

cause the bright pattern of light to move in an irregular way fascinating to cats, and to any other animal with a chase instinct." The PTO issued them U.S. patent number 5,443,036.

Trademarks

A trademark is a crucial element of branding a product, and it can be a word, name, or symbol that is used to distinguish one company's products from another's. Trademark rights cover only the use of the mark in commerce as connected to the product, not the mark itself (except for some famous marks) or the product the mark represents. For instance, the Oreo trademark does not prevent another company from making round chocolate sandwich cookies. Trademark law can be thought of as a consumer protection statute. A rival use of a mark will be prevented only if there is a likelihood of consumer confusion, or in some cases if the impact of the mark on consumers will be diluted by the rival use. Thus, the same mark is often used by different parties in connection with different goods, because consumers don't necessarily assume the same party is the provider of all of the different goods bearing a particular mark. Thus, a "Whopper" could be a tasty burger, or a malted milk ball, depending on the context.

Trademarks can be registered with the U.S. PTO, but rights also arise from use in some countries (including the U.S.) under common law principles. Although registration is not required to establish trademark rights, it is advantageous in the case of conflict. Unlike patent and copyright protection, trademark rights can potentially be of unlimited duration, lasting as long as the mark is in use by its owner.

How this applies to the method for exercising a cat: a brand name can be chosen to market the method, CATercizer ™, for example.

Copyrights

The 1976 Copyright Act permits the owner of a copyright to exclude others from reproducing, displaying, performing, or distributing ideas expressed in a fixed medium such as text, film, video or sound recording, computer disk, or 3-dimensional form. They protect only the *form* in which an idea is fixed, not the substance of an idea, which lies in the territory of patent protection. This is why there can be about a thousand different equivalents of *X Subject for Dummies*: each one has a different series title, and all are written in different words, even though the idea itself - namely, teaching a reader how to do something complex in a simple, easy-to-understand way - is the same across the board.

Copyrights do not need to be issued by or registered with a government agency except to be eligible for infringement litigation, in which case they must be registered with the Copyright Office of the Library of Congress. The copyright is effective as soon as the work, published or unpublished, is "created in fixed form."

How this applies to the method for exercising a cat: A training manual is written, which takes cat owners step by step through the process and includes inspirational poetry for cats, entitled There Once Was a Cat From Nantucket...©.

Trade Secrets

A trade secret is any information, design, device, process, composition, technique, or formula that is not publicly known, and that provides those who know it with a competitive business advantage.

Trade secrets are potentially unlimited in duration, but protection is lost if someone else discovers the information either independently or by analysing or dissecting a product ("reverse engineering").

Like copyright and trademarks, trade secrets do not need to be registered with or granted by any government agencies; the inventor or company holding the information merely has to make a reasonable effort to keep their secrets secret. Trade secret protection is a state right under the Uniform Trade Secret Act or similar state laws, and it mainly provides relief in the case of an information leak to competitors. Since patented inventions are made publicly available upon granting of the patent, patent protection and trade secret protection are mutually exclusive; however, since patent applications are kept confidential until and unless they are approved, an invention can remain a trade secret if the patent application is rejected. Types of trade secrets include chemical formulas or recipes (such as soda or cosmetics formulas), and manufacturing processes or techniques (such as how to make fireworks or form the eye of a sewing needle).

How this applies to the method for exercising a cat: Kevin Amiss and Martin Abbott happen to know that if you wiggle the laser pointer around as you move it, the cat has more fun. They don't mention it in their patent or training manual because they want to be able to make a big splash later on when they produce an infomercial touting a New and Improved Method of Exercising a Cat that utilizes the wiggling technique. They have sworn everyone they know to secrecy.

The real question with respect to intellectual property is not whether something can or cannot be protected, but whether it is worth protecting. The following chapter examines this in a bit more detail.

Note that many of the following principles refer to United States Patents, but the principles are similar in most countries that respect patents. There is also a reasonable likelihood that if you have something worth patenting, you may also be applying for an American patent, so that you are protected in that market.

To patent or not to patent?

Quiz: Answer the following question: At its most basic, a patentable invention is:

1. A great idea
2. A solution to a problem
3. Both of the above
4. None of the above

The correct answer is "4. None of the above."

If you visit the U.S. Patent and Trademark Office (USPTO) site (www.uspto.gov) you will quickly see that many patents are neither great ideas or solutions to any real problem.

What the Patent Office Really Does

Patents are granted to people who claim to "invent or discover any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof".

The Patent Office only verifies that the description and claims, AS DESCRIBED by their inventors or patent attorneys, are new, unique, and not obvious to the Patent Office.

The examiners DO NOT verify that an invention actually works or that it can ever be, built. They try only to correctly verify that the invention is patentable and has not already been patented.

There is a discrepancy between the wording of the law, and the actual actions of the patent office in that patents are often issued for non-working inventions even though the USPTO states: "The patent law specifies that the subject matter must be 'useful.' The term 'useful' in this connection refers to the condition that the subject matter has a useful purpose and also includes operativeness, that is, a machine which will not operate to perform the intended purpose would not be called useful, and therefore would not be granted a patent."… but often is anyway…

The USPTO now does some checking for foreign patent databases and will reject your patent application if they find a foreign patent that was published more than one year prior to your U.S. filing. Even if they don't find one (because it may predate the computerized databases), your patent, if granted, will be declared invalid if it can be shown that a foreign patent existed more than one year prior to your filing or if there is reason to believe you were aware of the foreign invention, and were not its inventor, at the time you claimed you were the inventor in the U.S.

Note that there is nothing about "ideas" in the above paragraphs. That is because the patent office does not grant patents for "mere ideas or suggestions." The rules also require that the patent be explicit enough such that anyone "ordinarily skilled in the

art" can apply what they learn in the patent to make the invention and make it work successfully.

What generally happens is that the USPTO errs on the side of the claimant when granting patents. They do not have the resources or the expertise to determine if all claims made are in fact correct. An application will occasionally be rejected if the examiner believes the invention won't work; but the bottom line is that the objection will be removed if the "inventor" simply asserts that they have made one (or I tried to make one) and it worked, or that they claim to be experts in the field and believe it will work. The vast majority of granted invalid claim patents expire without any protest because there is no point in wasting time, energy, and money proving the claimant a fool.

The real question is: At its most basic, a **profitably marketable** invention is:

1. A great idea
2. A solution to a problem
3. Both of the above
4. None of the above.

The correct answer, in this case, is: "2. A solution to a problem", and that is the only correct answer.

Keep in mind that many inventions, though not apparently solving any problem (Hula Hoops, Rubik's Cubes, Superballs, etc…) actually do: They solve the problem of boredom. In fact, the entertainment industry is one of the largest in the U.S. since most people in the U.S. no longer have to spend most of their time engaged in activities just to stay alive.

The Real Question: Will it Sell?

If your goal is to get your invention patented and then to have someone else produce and sell it, what will their first question be? The first question is invariably, "Will it sell?" If it won't sell, then ANY money they invest in your invention will be wasted.

Now, imagine that your invention will in fact sell. Have you got a winner? Not yet… The next question is then: "What will people be willing to pay for it?" This is a much more difficult question, as it depends on what the perceived value of having the problem solved is in general, and the perceived value of your solution is in particular.

Most inventors approach "marketing" from the perspective of "How do I get people to buy my invention?" That is the wrong question. The correct question is:

"What can I invent that people will buy?"

That is a pretty big question, but it is one that should be used to filter all invention ideas. **People want solutions to problems** and that is what should be provided with your inventions. A secondary factor should be noted is that, even if the solution is wanted, **the solution must sell profitably. It must** sell at a price above what it costs to make and distribute but below what enough customers are willing to pay for it.

8 Steps to Successful Invention

Step 1: Are You Re-inventing The Wheel?

Make sure that you are not just repeating someone else's invention. Look for any existing solutions to the problem your invention solves. They just may be the same as yours or maybe even better. STOP if proceeding is NOT a sound business decision after any step!

Before you undertake this step: Write a clear description of your idea down. It is often a good idea to have something along the lines of an inventor's notebook so that you can sign and date the page. You can also file a Disclosure Document with the Patent Office. This is a document that should contain a clear description with illustrations, if useful, for understanding your invention. All the Disclosure Document you file does is act as evidence of the date of invention. The Disclosure Document is kept on file for 2 years after which time it is destroyed, but that does give you a time frame of 2 years to decide if your idea is worthwhile pursuing.

U.S. law preferentially grants patents to "first to invent," so the date of your invention may become important in the future. Be aware that most foreign patent laws are "first to file" laws. That does not generally mean that someone can just take your invention and patent it. In the countries you'll probably want to deal with, the true "inventor" (or the owner on the inventor's behalf) is still the only one allowed to get a patent.

What's the Problem have you solved?

First, clarify in your mind the **problem** the invention idea **solves**.

Now go out into the real world and look at as many situations as practically possible where this problem is likely to occur. Does your invention SOLVE the problem in better than 99% of the situations you see?

Do not fool yourself by adjusting your definition of the problem to more specific situations than you originally did. If your idea for a solution only works in 90% (or less) of the problem situations, and it is not a technically difficult solution and/or for a high cost problem, then it is unlikely to catch on in the marketplace.

Realise that there were over 240,000 patent applications filed in 1998. Yet some sources estimate that only around 15,000 new products hit the shelves each year, 80% are gone by the end of the first year, and 95% are gone by the end of the 5^{th} year. There is unfortunately little data to indicate what percentage of the new products are "inventions." Most are generally just line extensions in which a slightly new shape styling has be done to modernise the product, or new sizes or new colours added to the range, etc... In other words, not really new or inventions.

Go Shopping

Even if you don't believe there are any solutions to the problem your invention addresses, go shopping. Go into stores that might carry your type of product, and ask a clerk. Explain to them the problem your invention solves, and ask if they stock something that solves the problem. DO NOT divulge your invention. You might be surprised when they lead you right to your invention, or perhaps an invention even better than yours.

If the clerk happens to show you some competing solutions, buy them. Yes, that costs money, but can you afford not to buy them? It depends on how serious you are about inventing a superior solution to the problem? You must buy the competing products because you will need to carefully analyse them before yours is developed or marketed. Why? Because, if your product is to *sell successfully* in the marketplace, it must be at least equal or better than others, on one or more criteria relevant to the buyer.

Beware of changing the Problem to Fit the Solution

Inventors often have a tendency to keep REFINING THE PROBLEM to fit their solution (and thus to exclude competing products) rather than the other way around.

The smaller the niche you fit your invention into, the less likely it is that it will be profitable. A niche that isn't even perceived to be there by your prospective buyers will be a hard one to profitably fill.

What if the clerk couldn't show you, or describe to you, a solution to the problem you posed? Are you done with Step 1, can you move on? No. Try another store and another clerk. If after 5 stores you still haven't found "your solution" or a better competing solution, stop for a few days and think about it. You may be approaching the wrong kind of stores. While stores and their clerks are the first things to try, because you get to interact with people, you should also try specific and general Internet searches.

How Does Your Solution Compare to Others?

If you haven't found any competing solutions you are ready to skip on to Step 2.

If you have found one or more competing solutions you MUST do some analysis to decide if proceeding is still worthwhile. Sit down with the collection of solutions you bought and look at them closely while answering the following questions.

- Is your solution more complex to manufacture than the competition?
- Is it harder to use?
- Is it more likely to cause accidental injury to a user?
- Does it provide less coverage of all possible problem situations?
- Might your product or its manufacturing process have a significant detrimental environmental impact?

If the answer to any of the above (or similar) questions is "Yes" (i.e., your product is more complex, harder to use, etc.), you can resign yourself to being in a very tough specialty market, or you can DISCARD your current idea and try to come up with a simpler, easier idea to solve the problem, or you can move on to your next problem. In either of these last two cases start STEP 1 over with the new idea.

Very Few Ideas Will Make It Through This Step

If thorough and realistic execution of Step 1 as described above does NOT kill off 90% of your ideas, you are probably too egotistical to ever achieve financial success from your inventions. Note that at this point you really still don't even know if your product will work in practice or even if it can be manufactured. Those questions are never really fully answered until the Product Development phase where time and money are spent on the project.

Step 2: Talk To The Experts.

Start using Non-Disclosure Agreements to get opinions, particularly from prospective buyers or experts in the field of your invention.

Non-Disclosure Agreements

Having people sign non-disclosure agreements as you talk to them for this step can be a good idea but you need to balance practicality with risk. At the very least, record, in your inventor's notebook, the names of the people you talk to and the date and time and place that you talked to them. All you are doing with Non-Disclosure Agreements is creating plausible documentation that a jury or judge will hopefully believe should you ever need to go to court with it.

The "Snicker Test"

You don't necessarily need the expense of a fancy Focus Group. You can stick your ego and your idea, out in front of people for free. Ask a few of your friends, particularly ones that should be knowledgeable in the area your invention is to be used in.

Sometimes this is called the "snicker test" because your idea may well generate a snicker or two. It is up to you to interpret the response. Did they not understand what you described (this is highly probable if you don't have a model or a prototype to show them)? Did they not want to offend you with an honest opinion? Might their opinion reflect that of potential buyers? With drawings, or just a word description, most people may *not* be able to really evaluate an invention, but there are some steps you can take to help:

Prepare A Good Elevator Speech

Salesmen use Elevator Speeches all the time. An Elevator Speech is a 60-second speech that you can use on almost anyone that clearly identifies the main points of your invention and makes them *understandable* to almost anyone. The term comes form when you step into an elevator with a stranger you have only the time of the elevator ride to impart to them what you, or your product, are all about, so you need to be clear and concise and assume no special technical or subject knowledge on their part. In other words, skip the industry jargon and use words that don't need to be defined for industry outsiders. If you are lucky enough to be talking to an insider, they'll still understand you.

Another tip: When presenting your ideas is that while inventors are sometimes held in awe, product developers are often more trusted, so it can be of advantage to call yourself a product developer rather than an inventor. Calling yourself a product developer rather than an inventor also has another advantage: People may assume you work for a large company and assume that you are not the originator of the idea. Thus they feel free to be more honest with you.

A Model Is Worth a Thousand Words

If your idea is an idea for a product for which you already have a rough concept of shape, a 3 dimensional model or even just a reasonable mock-up that looks like your invention will, but is not necessarily to scale, will also help if your invention is not easy to visually describe in a sentence or two. If 3 or more out of 10 people don't understand the invention when described in words, a model is almost an essential.

This can become a bit of a chicken and egg situation, as it may be difficult to build a model of your idea (and later work out manufacturing costs) when you may not know in detail the physical embodiment of your idea, which is why you are talking to the experts about it.

Get Expert Opinions

After you've gotten the input of a few friends, perfected your elevator speech, and hopefully toughened up your ego a bit, it is time to approach the experts. The experts are anyone you believe will benefit from your invention. You must figure out who in general you need to talk to, identify a few specific individuals, and figure out how to introduce yourself to them. Making cold contacts is often a very big hurdle to get over. But think about what the worst that can happen to you is? You'll bruise your ego? You'll be thought of as a fool? You'll make a new friend? The country's leading expert will volunteer to take your fantastic idea and run with it giving you full credit and 99% of the profits!

Idea Theft

If you are worried about someone stealing your idea in this stage you should be aware that it is highly unlikely, as few people would even be interested in devoting time and money to the development effort, or even just to the patenting effort.

Theft of product ideas is actually extremely rare but you should also remember that *IDEAS are not protectable intellectual property anyway*. The USPTO explicitly states

"A patent cannot be obtained upon a mere idea or suggestion." Ideas are free by law and they cannot be stolen. An invention, "reduced to practice", even if only via a description on paper, is no longer just an idea; it is one (perhaps patentable) embodiment of that idea.

If you keep a good log of who you talked to, and when, where, and what you showed them, and someone steals your idea and gets a patent, you will have some expense and trouble but chances are that you will be able to get their patent invalidated. If the commercial essence of your idea was *not patentable* and someone you talked to about it (without an oral, or preferably written, non-disclosure agreement) gets to market first and makes big money out of it, then that's the essence of the competitive, capitalistic system.

Step 3: Get Evaluated.

As you have by now conducted a thorough patent search and determined that your invention or nearly equal ones are not already patented, pay for a marketability evaluation by a professional that cannot gain by being positive. If necessary, get non-disclosure agreements signed by anyone you present your idea to for evaluation.

Do A Patent Search

To avoid wasting money on evaluations of already patented inventions you might want to do your own patent search or pay to have one done.

First search the patent info available on the Internet. A good place to get started on this is at the USPTO website at http://www.uspto.gov/patft/index.html. If you don't find your invention online, visit your nearest Patent and Trademark Depository Library and do your own manual search. If you don't find anything you'll have to make a judgement call as to whether to pay for a professional search or proceed on the assumption your search was correct.

Remember that the fact that an invention cannot be found by searching in the USPTO's patent database does not mean that the invention is patentable. A complete patentability search must consider all prior art, including earlier products, earlier patents, foreign patents, non-patent literature, and "obviousness."

Get Marketing Firm Evaluations

What you want from your paid-for marketing evaluation is to not only answer the "Will it sell?" question, but, if it's "Yes," to give you some idea of what price the buyer might be willing to pay for it and how many you might be able to sell.

The report might also discuss competitors and their current market shares. If you pay enough for the report you should even get some indication of what the competitors are

doing in the way of marketing. It can also pay to be somewhat cynical with rgards to market research, particularly with inventions in new areas of technology or which solve new problems, or solve old problems in a novel way. Remember that in the mid 1940's, expert marketing projections were that 1,000 computers would probably be about all that would be sold by the year 2000.

Self Evaluations

If you really can't afford an outside, objective opinion you can conduct your own market evaluation. Always be aware, however, that your answers may not provide an objective opinion.

Step 4: Manufacturing Costs.

You must get a solid idea of what it will cost to produce your product before you do final product development but this is not usually as hard as it looks.

Depending on your level of business expertise, it is often best to subcontract an existing manufacturer make your product. This will, of course, cut your profit margin, but it will also reduce your start-up costs and will eliminate significant risk. It will also save you a lot of time and possibly provide you with a source of expertise that you mat not already have.

Estimate Costs From Equivalent Products

Find several products that already exist on store shelves that are similar in content and complexity to yours. These products do not need to be products that compete with yours. They do not even have to be for use in the same field. They need only be comparable from a manufacturing standpoint.

Exclude products that have external reasons for high or low prices and ones that, on closer examination, appear not be as similar to yours in terms of manufacturing as they first appeared. Try to find at least 5 equivalent products to compare with. Sum their prices and divide by the number of products to get the average price.

Now divide your number by 10. This should give you a reasonable approximation of the direct manufacturing cost of producing the item. Though this may sound like an exorbitant profit margin for the manufacturer, remember that the manufacturer must also cover overheads and make a profit, the distributors also get their cut, and so do the retailers and anyone else in the chain.

So now you know roughly how much it will cost your subcontractor to manufacture each item if thousands are being manufactured. How much will the subcontractor then charge you? If they are manufacturing thousands it will probably be about 2 times

their cost. On the shorter runs it may be 3 to 10 times their direct cost, or even more for complex products. Make your best guess and try to be realistic about it.

Should You Get a Manufacturer to Quote at This Stage?

So far all your costings have been based on your own estimates. So the question now becomes whether your guesses are even close to reality?

If your own estimated costs still look acceptable relative to your competitors, it may then be worthwhile to get some expert estimates. If, however, your cost does not look acceptable, it is probably time to go on to your next idea.

When asking manufacturers for estimates, keep in mind that you have not completed your detailed design yet, so at best, you will only be getting a ball-park figure. You might ask for estimates based on 2 different run sizes though, say 5,000 and 25,000 units, or whatever might be appropriate for your product and initial realistic sales expectations. Be thinking in terms of first production runs and exclude tooling charges. Do not think in terms of prototype or pre-production runs which you will probably also have to pay more for.

Create a Business Plan

Now that you have some information such as competing products, snicker test results, a marketers evaluation report (hopefully with a suggested selling price and long term volume estimate), some production cost numbers, and a buyer comparison expectation price to analyse, you need to create a rough business plan.

Before you start on the business plan though, re-analyse all the data using a common sense approach. For example, look at competing products. Is one or more of them likely to be just as effective as yours but at a substantially lower cost? If that is the case then STOP and think about whether it is worth continuing. The buyers vote with their money in the way that maximizes their VALUE from the solution.)

If everything still looks like a GO at this point you should do a quick and dirty projection of numbers for a future business plan. Using projected volumes, conservative market penetration rates, the cost of any loans you may need (or the percent of profit you may have to give up to your financiers), marketing costs you project, shipping/warehousing costs, the subcontractor-manufacturer's price to you, packaging costs, liability and insurance costs, and all the other costs that may be involved, see what your projected profits will be each year for 3 to 5 years.

Now, after seeing realistic profit projections for at least 3 years out, make a decision based on how willing you are to do the hard work and make the sacrifices required to make it all happen.

To get to this level, you have probably had to narrow your first hundred ideas down to one that you feel you are willing to risk some serious time and money on just to get it to the marketplace in the hope that it will be the one of the many newly introduced products that actually succeeds. The *first hard part* is over and you can proceed to the fun part of inventing with renewed vigour and confidence. You might have a winner.

Step 5: Design Product And Build Prototype.

Design The Product

Up till now, you have most likely been working only from concepts for the product, rather than with a finished product. It is now time to do the detailed design of the product, build one and test it. Refine and redesign as necessary to get it working well and so that it can be easily made and used and looks reasonably attractive.

If necessary, get non-disclosure agreements signed by anyone you work with on development. If it is a manufacturer, or even an individual, whose expertise contributes to executing your ideas you must decide who will own any improvements that they suggest. In many cases it would still be you, but in some cases you may decide to share profits with them if their contribution is major. Whatever you do, put it in writing.

Don't go to your patent attorney until after your invention is pretty close to final as shown by your working prototype. Even at this stage, it may still be too early to file a patent application. If you filed a Disclosure Document, you will hopefully still be well ahead of its 2 year destruction date. If you have launched the patent application before this point, things may get embarrassing. You discover your invention doesn't work quite like you thought it would. You can't add new matter to your current patent application so you have to pay your attorney to file a new application or a "Continuation-in-part" for more costs and fees. You may even now have to pay to keep 2 patents, if you get them, in force.

Simplify, Simplify, Simplify

Work with whatever design medium you are most comfortable with, be it pencil and paper or CAD and do several iterations of quick and dirty designs. For most people paper and pencil sketching will probably be faster than trying to do engineering drawings, even on a computer. This however is rapidely changing as CAD systems are becoming easier and faster to use. Pick whatever system works for you but assume that you will radically alter your basic design as you progress.

When you reach a point where your quick and dirty design is simplified to where you believe it cannot be simplified any further. Stop and re-look at the problem that you are solving. Try stating the problem in several ways to see if it changes your perception of what the solution might be. As an example, take a toilet seat lifter. Is the problem: Men don't put the toilet seat down after standing; Women don't see that the toilet seat is up; The seat must automatically be up when a man is standing; The seat must be automatically down when anyone attempts to sit? Hopefully, the different perspectives may help you to envision different possible solutions.

Evaluate Again

As your detailed solution design progresses, re-examine it. Is your solution still the best (simplest, least potential development pitfalls, etc.) that you can come up with? If so proceed. If not, consider the market share that you might gain for your current

solution compared to reworking it while you are still in paper development stage. Committing yourself to a solution too early in the process is a guaranteed way to waste your time and money. If you achieve a simpler solution than the one your potential subcontractor-manufacturer(s) estimated for you, you are probably going to make a bigger profit than you originally anticipated. If your new solution is considerably different from your original idea, you should recheck your patent search result and look for the product on the shelves again.

It is essential to go through the above exercise because you want to avoid getting killed in the marketplace by another company who sees your solution, realises that it is selling profitably in its market niche, and creates and markets a "better" alternative for the same market a few months later. A problem can go unsolved for years simply because nobody recognized a viable market, but once that market is discovered there will be many people who want to see if they can make money out of it

Build A Prototype

Once your design is finished, it is absolutely essential that you build a prototype. This is simple common sense to let you ensure that your solution actually works. With the advent of recent rapid-prototyping technology, it is becoming easier and faster to create excellent prototypes. You will most likely have to work with a variety of subcontractors to build your prototypes. These could include Rapid Prototyping Bureaus, Electronic design and assembly companies, Sheet metal and engineering companies, etc.

Thoroughly try the prototype and see if it works. You may well be surprised to discover that it really doesn't quite work to your expectations. Time to refine and retry it till you get a prototype that works really well. CAUTION: watch your refinements to be sure that final manufacturing costs won't knock your product back into the unprofitable zone. Needing special materials or time consuming machining or any of a host of things may mean it is time to stop and rethink… maybe even stop entirely?

Start the Patent Process

Once you have a fairly solid working prototype and are reasonably certain no more technical catches are going to have to be dealt with you have something a patent attorney can accurately yet broadly describe. Remember, you get a patent on what is described, not your revisions to make it work if you gave your original idea to a patent attorney.

Remember that you are in charge of the patent process.

Listen to your patent practitioner for advice but make your own decisions and make it absolutely clear you will pay for what you ask for. In the end the Patent Office can still reject your patent regardless of what you have invested in it.

Assuming all goes well, and you get a patent in the future, you then have a good marketing edge that will certainly help you achieve the projected profits you computed in earlier steps, assuming, of course, that the market still wants your product.

But what if you cannot get a patent? Or what if a patent could be easily engineered around? If your initial market analysis and cost projections are still valid then it may not make a difference that you did not obtain a patent. If you still stand to make a profit, and there are many examples of unpatented product ideas that do, there is no reason you shouldn't succeed. All a patent does is provide a temporary roadblock to knockoff competition. It does not block competition from others with different embodiments of solutions to the same problem. Patent or not, you can and should provide yourself with trademark and copyright protections. A good trademark can be a pile of gold and yet be very inexpensive to get and defend.

Remember, at this point all we have is a working prototype, we still haven't proven it will sell, so all money spent so far, including patent or consultation expenses incurred, are still at risk. You can still keep your financial risk down by not yet submitting a patent application so you might want to talk the pros and cons of that over with your patent attorney before proceeding with the next crucial marketing step.

Step 6: Confirm That It Will Sell

File a Provisional Application for Patent (PAP). Get a quality prototype or low volume production run done, create sample packaging, instructions, etc., and get your invention on the market.

You can create your own Provisional Application for Patent and file it yourself with a minimal fee ($80 in the USA, for example). It is often worth incurring the trouble and expense of having a patent attorney review the provisional application, and adjust it as necessary, before sending it in. Filing a provisional application starts a 1 year clock ticking in the U.S. (and many foreign countries). You have 1 year in which to submit the real (non-provisional) patent application. Your filing of a PAP does 3 things:

- It establishes a priority date
- It generally allows you to make-public your invention without losing any rights to it in foreign countries
- It lets you put "Patent Pending" on your product and/or marketing materials.

Your provisional application must be a balanced amalgam of thorough and broad and specific but need not detail patent claims or prior art. If you have a really truly working prototype you should be able to do a pretty good job drawing up the provisional application. The key is that your future real patent application cannot add new features, concepts etc. that are not supported in your provisional application, if you want the most certain U.S and foreign patent protection. Actually, it can add things, but the added things will have the priority date of the real filing and, if your public disclosures included the added stuff, you've probably lost any foreign filing rights… That is why it is

good to have your attorney understand your invention and review your provisional application even if it increases your final legal costs by a few hundred dollars. The drawings for a Provisional Application for Patent can be informal but must show everything and be understandable.

Decide How You Want to Sell Your Invention

You may decide you want to sell your product yourself, in which case you will need to learn some marketing and sales skills, or you could license your invention to other companies for a fee, or you could outright sell you invention to someone else to produce and sell.

Step 7: Get it Patented

If everything to this point indicates a good chance at success, file your full patent application before one year from the priority date established by your PAP.

Real Patent and/or PCT?

Well before your 1-year Provisional Application for Patent expires, have your patent attorney get started on the Patent Application and/or a PCT (Patent Cooperation Treaty) Patent Application.

The Patent Cooperation Treaty represents your multi-country patent protection. In the US, the same office that takes your Patent Application can initially accept and process your international patent application. Eventually, however, you will also have to pay fees to foreign governments and probably attorneys. But you may be well down the profit path by then or will be able to abandon your application knowing that your product really doesn't sell and any patent would likely be commercially worthless.

Before deciding U.S. or PCT or both, do some real market research on the potential of foreign markets to be sure you understand where it is worthwhile to sell your product.

Keep in mind that a patent in a country can be used to exclude legal knockoffs made in a country in which you do not get a patent. Also be aware that some countries' patent laws require that you manufacture and/or license the manufacture of your invention in that country to keep the patent in force. Finally, be aware that many governments require additional payments over the life of the patent to keep it in force. The payments are trivial for a smashing success but can be a burden for a marginal product.

Do You Infringe?

In this step you may also want to have a check done to see if there is anything your patent might infringe on. The Patent Office does not determine whether the invention you want to patent infringes any current patent, only that the patent office believes the *claims allowed for your patent* are new.

An improvement invention may have patentable claims, but may still infringe on a prior unexpired patent for the invention improved upon, if there is one. There is no legal requirement for you to check for infringement so, as a business decision, you may believe the risks of infringement are low enough and that you will be able to amicably negotiate with anyone who claims infringement after your product hits the market. You may also want to hold off on finding out potential infringement until after your patent is issued, then have the study done and pre-emptively make an offer to the people you possibly infringe on. This is largely a matter of gut feeling on what is right in that particular situation. Ideally though, your own patent search should have helped you avoid the potential for problems in the first place.

So now you know, patenting is about the last thing you want to do with an invention idea. It is, of course, about the first thing you want to do with a proven profitable new product. But, if you've followed the steps, you've got about 9 months of profits to receive before incurring the major patenting expenses.

Step 8: Watch the Competition

If you have any success at all you can count on competitors. Be sure they don’t infringe any patents you get and keep developing improvements ahead of them.

Patent Process Stop Points

1. You find your product already on the market!
2. You find a better product than yours on the market!
3. You find 3 or more products generally no better or worse than yours on the market!
4. Your solution works less than 90% of the time in solving the problem...

AND the solution is not considered technically difficult...

AND the solution does not have considerable savings over alternatives.

5. You are unwilling to honestly evaluate your product against competing solutions.
6. Your product could cause serious injury and you are not willing to accept that responsibility.
7. Your product or its manufacturing process could significantly degrade the environment.

You pursue your solution without serious consideration of alternative solutions.

You refined your problem definition to one that is significantly narrower than your original statement.

Your solution is more complex to manufacture than the competition.

Your market is too small to attract the attention of major firms. IS the ice firm enough for you?

Your solution is harder to use (and provides no significant benefit to trade that off against).

Common Inventor Pitfalls to Avoid

1. Free invention evaluation services–or most any 800 number or "we'll do it all" or "we'll find a licensee for you" services that then want paid first.

2. Starting with a patent attorney. Yes, it is safest to pay them to write a patent application first–but 98% of all new patents have NO value.

3. Expecting to just license an idea and collect royalties. It happens but far more people win the lottery than get rich this easily from invention ideas.

Patent Myths

Patents are valuable–is false because patents only have commercial value if they can be used to protect a profit stream by excluding others from making, using, or selling whatever is covered by the patent's claims. In fact many of those who study patents are fairly certain that less than 2% make any money for anybody.

A patent means the invention works as verified by the government–is false because the government does not get involved in testing inventions to see if they work. In fact US Patent and Trademark Office (PTO) auditors believe that as many as 10% of all issued patents are invalid–a high percent of those due to the fact the invention does not work.

You can get a Provisional Patent that is good for 1 year–is false because there is no such thing as a Provisional Patent. What you can do is file a Provisional Application for Patent, the current Small Entity fee is around US$80, that will provide a date of priority placeholder for you. If you fail to file the full application within 1 year you lose your priority date and may stand to lose substantial other rights as well depending on what you did during that year.

A Provisional Application for Patent just needs to describe the idea–is false because the Provisional Application for Patent must meet exactly the same criteria for full disclosure and providing enabling information to one skilled in the art as the full Patent Application. The Provisional Application does not require the formal structure, the disclosure of prior art, or the claims of the full application and can use less formal drawings.

You can get a patent for an idea–is false because you cannot get a patent for an idea or mere suggestion. Patents are granted to people who (claim to) "invent or discover any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof" to quote the essence of the US statute governing patents. Complete and enabling disclosure is also required.

A patent can be enforced for 20 years–is false because a patent can only be enforced from the time it issues till it expires. New rules provide some guarantee that the enforceable term of a utility patent will be at least 17 years and that some royalties may be collectable when a patent is published before it issues. Design patents are only good for 14 years and only cover the ornamental appearance of the item and not its structure or functionality.

A patent gives the owner the exclusive right to make, use, and sell their invention–is false because a patent only gives its owner the right to EXCLUDE others from making, using, and selling exactly what is covered by their patent claims. A holder of a prior patent with broader claims may prevent the inventor whose patent has narrower claims from using the inventor's own patent. A patent right is exclusory only.

A US patent is honoured world wide–is false because a US patent is only enforceable in the US. It can be used to stop others from importing what is covered by the patent into the US but other people in other countries are free to make, use, and sell the invention anywhere else in the world that the inventor does not also have a patent.

A patent protects an invention–is false because only a patent *in conjunction with* a legal opinion of infringement will give the owner(s) of the patent the right to sue in a civil case against the alleged infringer. The US Government does not enforce patents (however, the Customs Service can help block infringing imports) and infringement of a patent is not a crime. The responsibility, and all expenses, for enforcing the rights granted by a patent (and securing Customs Service help) lie with the patent owner(s).

The first thing you need to do after having an invention idea is get a patent–is false because there are other, much less expensive, steps you can take to maintain your US and international patenting rights with very little risk. When properly used, the US PTO Disclosure Document Program (US$10), Non-Disclosure Agreements (Free), and Provisional Applications for Patent (US$80) along with maintaining good records and diligent pursuit can keep your patenting rights intact until you do, as a timely business decision, spend the $5,000 to $10,000 it typically takes to get a patent.

A patent attorney has to write and file your patent application–is false because you can write and file your own patent application *pro se* or you can also have a patent agent write and file your application. A patent attorney is both an attorney and a patent agent. A patent agent can be anyone with sufficient scientific or technical knowledge and who has passed a patent practitioner test administered by the US PTO.

It is very hard to learn how to write your own patent application–is false because many people no smarter than you do it every year. It does take some study and time and it is also a very good idea to pay a patent practitioner to review and make suggestions on your application, several times if necessary, before you submit it.

Recommended Reading and References

IP Australia, http://www.ipaustralia.gov.au/index.html

United States Patent and trademark Office, http://www.uspto.gov/

Bountyquest Patent Info Centre,
http://www.bountyquest.com/patentinfo/patentinfo.htm

James E White & Associates, Will it sell? James E. White & Assoc., 2000

Franklin Pierce Law Centre: http://www.piercelaw.edu/tfield/ipbasics.htm and
http://www.fplc.edu/tfield/aVoid.htm

Legal Consumer Guide,
http://www.legalconsumerguide.com/legal_information/general_law/intellectual_property_copyright_law.html

US Intellectual Proerty Law, http://www.mapnp.org/library/legal/ntlcl_pr/ntlcl_pr.htm

Other useful links:

http://law.freeadvice.com/intellectual_property/