

Hierarchical TRIZ Algorithms

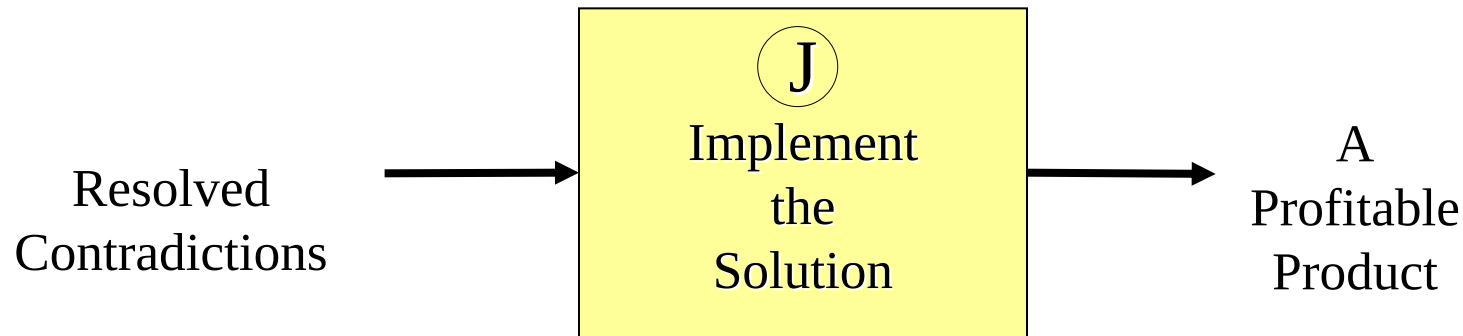
12th Installment- Apr 2006

Hierarchical TRIZ Algorithms is a how-to TRIZ book. It is designed to assist both beginning and advanced users. Each month, the TRIZ-Journal will publish another chapter of the book. This month's installment includes the 10th step of the 10 step algorithm (shown on the cover) :

J. Implement the Solution

In all, there were 12 installments. Should you decide to purchase the most current edition of the complete book contact the publisher at:

<http://www.3mpub.com/TRIZ/>



Introduction

No idea, no matter how good it is, will implement itself. Each concept is still quite vulnerable and must be handled with diligence and discipline in order to make it into a viable product.

Refining the Concept

If the TRIZ methodology has been followed, it is likely that several concepts will have been generated. Each of these ideas can be further refined by making a succession of drawings in your invention journal. Drawing successive drawings in which small improvements are made to conserve space, weight and cost will help to refine the idea to the point that you can build a more complete prototype. During this refinement, we can consider different configurations and orientations of elements. We can also consider the partial or complete consolidation of similar and dissimilar elements. Folding elements into themselves and other elements can further refine the product to decrease its size.

Prototypes

Since we have already created other prototypes, let us review the purpose of each round. The purpose of the first round of prototypes was to help understand the relative importance of each knob. This was done in the cause-effect stage. The second round of prototypes was to verify that the solutions found by resolving the contradictions were viable and that there were no major risks left. This was done in the resolve contradictions stage to determine whether there were more improvements required.

Do not make the mistake of building any of these prototype at great expense. It is almost an immutable law that the first prototypes will have serious flaws. Making expensive prototypes can exhaust your resources. Discouragement often sets in and the final product may never materialize. For this reason, the these prototypes should be as inexpensive as possible. Remember that the purpose of these first prototypes is to convince *you* that all of the ideas work together.

This next round of prototypes is to convince you that you haven't left anything out so that your invention is ready for patent filing. It will also be used to persuade prospective customers that your idea is marketable. Because these prototypes are more extensive, they may also be a little more expensive.

In order to build prototypes, you will need materials and tools. It is not necessary to have all tools and pieces on hand when you begin, but you will find this to be a big time saver. One helpful hint is to create a stockpile of parts, which can be readily modified to build prototypes. Keep bins of raw materials such as small, medium and large plastic, metal and wood parts. These storage bins need not take over the workshop and they can be stocked by taking apart unused or inoperative equipment from the home or second-hand stores. Make it a practice to disassemble second hand goods to create useful parts. You will learn a lot about different manufacturing methods and collect expensive parts at the same time.

Combining Concepts

Once we have refined the individual concepts, it is possible to create a "super product" by the combination of these individual concepts.

Before doing this, some people find it useful to rank the ideas against business and customer needs. This gives an idea of the relative strength of each concept. This method is often referred to as PUGH Concept selection. The front end of Quality Function Deployment (QFD) also accomplishes the same purpose.

If adequate resources are available, a DOE can be performed. DOE stands for Design of Experiment and is a favorite Six-Sigma tool for determining the relative strength of various knobs. In this context we are interested in the relative strength of each concept and *how much* of each idea should be combined into one final product. This can be practically done by a two level DOE where the concepts are combined in different combinations. This allows us to determine the combination of solutions that gives the most value to the customer or the business. The beauty of a DOE is that a partial list of combinations can be tried rather than the full compliment. The final output of the DOE is an equation that can be optimized to give the best "super product". It is not the purpose of this text to go into detail on how to set-up or perform a DOE

Patents

Assuming that the previous steps have been followed (including the patent search from *Identifying Physical Phenomena*) you are now ready to file a patent.

Two types of patents are considered: a provisional or “poor man’s” patent and a non-provisional or regular patent. Congress created the provisional patent in the late 90’s to help spur small business growth. A provisional patent is basically a place holder for a filing date, since the patent examiner will not even look at it until the regular patent is filed. (It can also serve as a substitute for building working prototypes, also called “reduction to practice”). The provisional patent must include sufficient detail that someone “skilled in the art” could build your invention. While it is good practice to give as much detail as possible, do not worry about flowery legal wording and drawings. Attach legible drawings and the cover-sheet provided through the USPTO web-site and pay a fee of about \$80. Provisional patents are in effect until one year from the date of filing. They need to be converted to a regular patent within the year or your invention is considered to be abandoned. One strategy is to first, file a provisional patent and then license the idea. Part of the business agreement is up-front money which can be used to file the non-provisional patent via a patent attorney or agent.

Traditional patents are much more expensive. If you are in business for yourself, it is usually difficult to justify the expense of a non-provisional patent, before the market has proven itself. On the other hand, most large companies have greater resources and therefore rarely bother with the added time and effort of a provisional patent.

When you have established a filing date, you are now patent pending. Write patent pending on your prototypes. You are now free to sell, license or manufacture your invention. Understand that you are still at some risk that someone else has already patented the idea. Your degree of risk is directly related to the depth of your patent searching and to how close your invention is to other related patents.

Selling or Licensing Your Idea

Selling or licensing your idea can be an exhilarating and discouraging experience. Now, you will be dealing with people who have a monetary interest in their own business prospects. They may not be as encouraging as others have been. Potential customers can be manufacturers, distributors or the final user. One way to license your idea is to directly contact a manufacturing organization that makes related products or that has the same vendor base to produce the product. Many manufacturing companies will be open to licensing your invention.

Most of the time, you will be trying to sell or license your invention from afar. This is difficult since the most effective persuasion usually comes from personal contact. Consequently, the initial stages of selling your idea need to be focused on getting you and your invention in the physical presence of the person that has the authority to make the decision. Most of the information that is passed should have the intent of wetting the appetite. The prospective buyer will have the alternate desire to weed out the good ideas and will be trying to get as much information as possible before a personal sales contact. One way around this dilemma is to create a sales brochure that tells just enough to get the vision across, but leaves much to the imagination. Another reason to have a sales brochure is that prototypes are often poor tools for creating a vision.

If the prospective buyer is interested, arrange a personal visit to discuss the invention and possible business arrangements. In order to talk freely with the company representatives, it is usually necessary to enter into an agreement which will limit what either or both parties may do with the information that they will receive. Ask the company representative what they would prefer and then consider the risks to yourself and your future prospects before signing.

If the company is willing to license the product, it is expected that a business agreement will be entered into. Such agreements can be found through legal consultation or on the web. Modify these to suit your needs.

It is customary to ask for money up front. This money can be applied to the royalties. This is good for two reasons. First, this gives motivation to the manufacturer to make something of the product. Secondly, this gives some money to handle the costs of filing a non-provisional or traditional patent, which can cost several thousand dollars.

Commercializing

You may decide that you would rather manufacture your invention yourself. (Admittedly, there is often more money to be made in this way. However, it is assumed that most people who would use the full TRIZ approach described in this book will more likely find themselves licensing their inventions rather than manufacturing them). At any rate, whether you decide to manufacture the product or license it, there will usually be a need to “maintain” the invention. Remember, you know the most about the invention. It is good business practice to support the invention with free advice and problem solving. You will find that this will open the way for future work if you do not simply leave your invention on their doorstep. The company will know that you are a good source of ideas because you continue to provide support.

A few final ideas about inventing for profit. Do not get to wrapped up in one idea. You can afford to throw away a few good ideas. You now have an infinite source of ideas. Do not throw away good friendships over inventing. Again, you can afford to throw away or give away a few good ideas. If your business model is not working, try new approaches. Find a mentor that can help you with the business side of things. The important thing is to hone a business model that allows you to invent and create cash flow that will empower you with more time and resources to invent.

Simplified

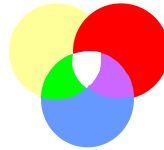
Make a Succession of Improved Drawings



Journal

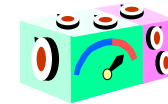
1. Record Ideas as drawings in Journal
2. Refine ideas by drawing successive pictures
3. Perform calculations to establish drawing details

Combine the Solutions



When several solutions are found, consider different ways that they can be combined. Especially if the ideal solution is not created.

Build and Test Cheap Prototypes



The first prototypes are used to determine whether the ideas will work. As such, they should only include the basic elements necessary to convince you that the idea will work.

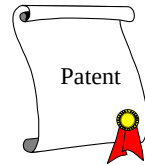
Document and Witness the Invention



Journal

1. Document the invention in your journal.
2. Have two reliable witnesses sign that they understand and have seen the invention reduced to practice.
3. Date all entries.

File for Patents



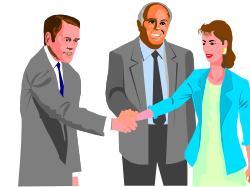
1. If money is tight, consider a provisional patent. This gives one year protection to further test the invention and to sell it.
2. Within the year, convert this to a traditional or non-provisional patent.

Public Test of Prototypes



1. Build refined prototypes
2. Write "Patent Pending" on everything that the public can see.
3. Conduct public testing of the prototypes.
4. Continue to log test ideas and results in the journal.

Commercialize the Product



1. Find a business that makes similar products and has a suitable vendor base
 2. License the invention
- Or
- Begin plans to manufacture your own product

Detailed

Refine the Concept

Make a Succession of
Improved Drawings



Journal

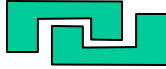
Permute the Elements

ABC ACB BAC BCA CAB CBA

Entire books have been written on the subject of recursively drawing ideas in order to “evolve” them. Psychological inertia dictates that your idea can only be drawn as you see it in your mind. Up to this point, you have seen your idea in only a few ways. In this step, we will consider drawing the idea in a variety of ways over and over until it is as good as we can imagine it.

1. Draw the idea in your journal just as you see it in your mind.
2. Draw it over and over, improving it each time in some small way.
3. Determine whether parts **MUST** come in a certain order. For instance, must one part be inside of another, or can the order be changed?
4. If the order can be changed, draw the idea in different orientations. Do this over and over until it is as good as you can imagine it.

Fold Elements Into Themselves and Other Parts



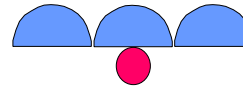
One of the greatest disadvantages that many concepts have is a large envelope or volume. This can create problems in a variety of ways.

- Is there a requirement that the article be **transported** during or after manufacture? Must the user of the article move it about during normal use? Will its size be a hindrance in transportation?
 - Is there a requirement to **store** the article because it has intermittent use? Does it take up excessive storage space?
 - Is the article excessively large, making it **awkward** during use?
1. Consider how elements may be temporarily folded up.

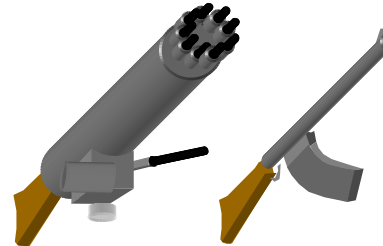


2. Consider how elements may be **permanently folded** into themselves.
3. Does the article normally interact with other objects? Consider different orientations of other elements which allow them to be folded **into one another**?

Consolidate Multiple Like Elements



An essential and unavoidable part of the evolution of systems is that multiplied objects will be consolidated into single elements. It may be that only part of each element will be consolidated. An example of this is a gatling gun. The gun had multiple barrels which were consolidated into one barrel. This necessitated changes to the feed mechanisms.

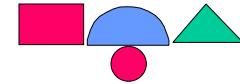


Combined
(Partially
Consolidated)

Consolidated

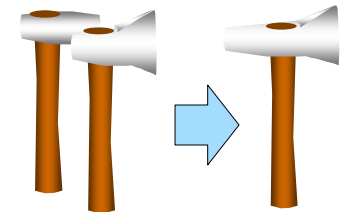
1. Are multiple like elements used in the concept? What would be necessary in order that one element could take over for all of the elements?
2. What **part** of the multiplied elements could be made to serve all of the elements?

Consolidate Unlike Elements



Evolution of systems also dictates that unlike elements will also be consolidated. Each element in the system should take on as many functions as possible. This ultimately leads to consolidation of parts.

1. Update the functional diagram of the system.
2. Consider how each part might take on the function of other parts. What **part** of the elements could be made to serve all of the elements?



The handles are consolidated into one

Document and Witness the Concept



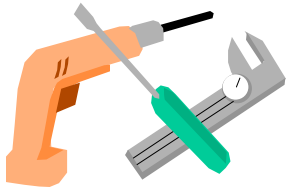
Journal

1. Document the concept in your journal.
2. Have two reliable witnesses sign that they understand and have seen the invention reduced to practice.
3. Date all entries.

Prototype Individual Solutions

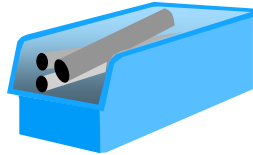
Reduce the Invention to Practice

Build up Your Tools



1. Collect tools whenever the opportunity arises. A huge and expensive workshop is not usually necessary. One can begin with a modest investment of common household tools.
2. Add to these tools as opportunities present themselves.
3. Learn how to use these tools
4. Following hand tools, the next round of tools can be bought relatively inexpensively
 - grinders
 - welders
 - power saws
 - Power screwdrivers

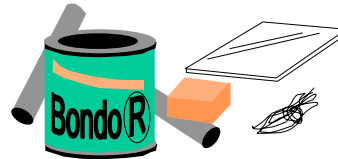
Stockpile Raw Materials



The building of prototypes can be frustrating or satisfying depending upon the resources which the inventor have at hand. While it is good to have raw material available in the form of rods, tubes and blocks, there are many types of pre-used objects that can be modified to form prototype objects. Excellent accessibility of these materials will also enhance the experience.

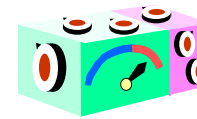
1. Install bins which can be used to store the materials. Get several sizes, allowing you to stockpile a variety of sizes and types of parts.
2. Make it a common practice to disassemble products and stockpile the parts.
 - This allows you to see how other products are manufactured
 - This is a great source for odd parts like switches, motors and fans
3. Store the parts in a manner that is very accessible
4. Use the parts. You will best learn where they are and how to use them if they are in constant use.

Learn How to Use Cheap Prototyping Materials



1. Become aware of local businesses that sell raw materials
2. Buy and store the following materials
 - Torn down parts from other products
 - Fiberglass resin and Bondo™ (Available from auto parts stores)
 - Plywood and scrap wood
 - Aluminum Sheet metal
 - Lexan™ Plastic (now available at hardware stores)
 - Plastic and metal tubing
 - Aluminum stock metal blocks, rods and sheets (Aluminum is a wonderful material to work with since it can be easily worked with many hand tools)
3. The local hardware store carries many items that can be used to create prototypes. Thus it is not necessary to keep a full supply of all possible prototyping items on hand.

Build and Test Cheap Prototypes



These prototypes are chiefly used to convince **you** that the parts work well together and that there are no unforeseen problems. As such, these prototypes should only include the basic elements necessary to convince you that the idea will work. Keep this as cheap as possible.

1. Determine the minimum that must be built to determine whether the parts will all work together. It may be that you only need to prototype a few elements together because the working of the rest will be obvious.
2. Build and test the prototype.
3. Log detailed data of the testing. It is allowable to test the prototype in public as long as you are doing it for experimental purposes only. This is not yet considered public use. Once you use it in public for your own pleasure or convenience, it is considered public use and must be patented within one year.

Document and Witness the Reduction to Practice



Journal

Documenting that the invention has been “reduced to practice” is very important. This will be required later when the patent is submitted.

1. Document the building and testing in your journal. The more information that is written, the better. This may be required later to prosecute your patent.
2. Sign and date the invention in the journal.
3. Have two reliable witnesses sign and date an entry that indicates that they understand the invention and have seen the invention reduced to practice. These witnesses should be sufficiently competent to understand the workings of the device. The witnesses should not be family members or a co-inventor. Make sure that it is someone that you trust.
4. Indicate that the material is confidential, such as “I confidentially witnessed this invention. . .”

Combine Solutions

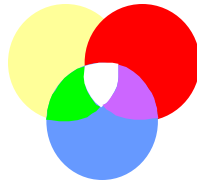
Rank Ideas Against Customer and Business Needs

PUGH or QFD

If you have used the full TRIZ format for developing your ideas, it is highly likely that you will have several viable concepts. Each concept will have its advantages over the others. The advantages that are apparent are not inherent. It is still possible to improve each concept. This step affords us the opportunity to determine the relative strengths and weaknesses. It also sets us up to combine the solutions. A common method for comparing ideas is referred to as the Pugh selection method. Quality Function Deployment (QFD) also uses a similar step.

1. Perform PUGH Selection techniques to verify that customer needs are being met and to get a comparison between concepts.
 - A) Assign weights to different qualities of the product, such as ease of use, weight, reliability, etc.
 - B) For each of the invention concepts, assign a score in each of the categories.
 - C) Add the multiplication of the weight and the scores to give an overall score for each concept.
2. Consider **refining** some of the concepts to give them higher ranking

Combine Solutions



In many cases, only one good concept is required which satisfies all of the requirements. Other cases require the highest performance or reliability possible. If this is the case, a good tactic is to combine the solutions into a super-product which greatly extends the performance or reliability. This step sets us up to perform a Design of Experiment (DOE) as shown in the next step.

1. Consider different ways that they can be combined. Especially if the ideal solution is not created.
2. Draw the combination possibilities
3. Consider ways to simplify the combinations by consolidating component parts.

Optimize the Combined Solutions

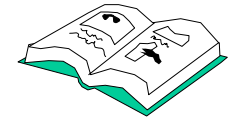
DOE

Continuing from the combine solution step, we need a strategy for combining the solutions. If there are many possible solutions, simply combining them all may not be wise. This is because there is often an “interaction” between the variables. The uninitiated will often suppose that simply combining solutions will give the best result. Actually, the combining of certain solutions may make the performance worse. This can be seen mathematically as an equation of combined variables such as $X_1 \times X_2$.

Up to now, mostly screening tests should have been performed to determine rough cause and effect. These screening tests are performed by changing one variable at a time. In this step, we will purposely change several variables at a time. In order to save time, we will not consider all of the possibilities. This is the intent of the DOE, to consider a reduced subset of the total possibility of combinations. The reader should find a good source which explains the DOE methodology.

1. Combine the concepts into two-level DOEs.
2. Perform the tests. The output of the DOE will give sensitivities and interactions between knobs.
3. Consider **refinements** to the final concepts based on the outcome.

Document and Witness the Reduction to Practice



Journal

1. Document the testing of the various combinations in your journal. The mathematical output of the DOE will support the reduction to practice.
2. Sign and date the invention in the journal.
3. Have two reliable witnesses sign and date an entry that indicates that they understand the combination of inventions and have witnessed the outcome of the DOE.
4. As with all witnessing, use competent witnesses and have them sign and date the entries.

File For Patents

The subject of patents cannot be adequately covered in this text. It is suggested that you read a book on patenting. It is entirely possible for a lone inventor to patent his own invention and do a better job than is typically done by professional patent attorneys and agents. However, there are a number of important things that must be learned. Remember, you are the one that knows your invention the best.

There are a number of tests that must be overcome in order to secure a patent. The two most important tests are novelty and non-obviousness. The novelty test is generally an easy test.

- Is it physically different than prior art?

The non-obvious test is much more difficult to pass. It must be non-obvious to someone skilled in the art with full knowledge of all prior art, and it must be non-obvious after consulting all prior art. Ask yourself, does the effect of the invention provide a non-obvious result? For example, does it solve a previously unsolved problem?

The practical rules of non-obviousness are quite abstract.

Provisional Patent



If you are not sure that your idea has a strong market, or you cannot afford the expense of a regular patent application, you may want to file a provisional patent first. Provisional patents were created in the late 90's as a poor man's patent. They serve as a filing date place holder and allow the holder to be "patent pending". Thus, the inventor to go out and find a customer. In other words, you can test both function and marketability in public. Provisional patents are considerably less formal than the non-provisional patents. They usually require a cover letter provided by the patent office and an informal explanation and drawings. The weakness of the provisional patent is that anything that was overlooked and later put into the non-provisional patent cannot claim the filing date of the provisional patent.

1. Get forms from USPTO web site.
2. Fill out the forms and attach the explanation of the invention along with the drawings.
3. Include a check which is about \$80
4. Include a self addressed post card with check boxes for everything that you have sent. They will check the boxes and return the card to you. Make sure the card has a postage stamp.
5. Send the package by U.S. Overnight express mail. The postage date is considered the filing date.
6. If everything is OK at USPTO then will receive filing date in 6-8 weeks. You are now "Patent Pending"

Traditional Patent For a Small Entity



If you are certain that your idea has a strong market and you can afford the expense, you may want to file a regular or traditional patent first. It is entirely possible for an inventor who is not a patent agent or an attorney to file a patent. Nor is it required by the patent office. A lone inventor can prosecute (do what it takes to secure) a patent from the USPTO. On the other hand, you can also work with a patent agent or attorney. The cost may be as high as several thousand dollars. If you are hiring someone to do the work, then follow the same guidelines as the "Traditional Patent for a Large Company". If you are doing it on your own then:

1. Read a good book on the subject. One such book is *Patent it yourself* by attorney David Pressman. NOLO produces this book and it can be found at Nolo.com. This book contains forms and in-depth explanations of the finer points of patenting. Whether you patent yourself or allow someone else to do it, you should probably read this book.
2. Follow all of the procedures described in *Patent it Yourself*. It is strongly suggested that the only procedure that should be done out of sequence is the patent search. In this book this is done during the step of determining a physical phenomenon to deliver the function. The search helps us to determine available physical phenomena and keeps us from putting in too much work on an idea that is not likely to go anywhere.

Traditional Patent For a Large Company



If you work for a company, it is often the policy that a regular patent is filed first. This is because a non-provisional patent is more complete. It is done once and has a stronger position than the provisional patent.

1. Assist the company attorneys to file the patents. This usually involves some sort of disclosure of the invention, meeting with the attorney, disclosing drawings of the idea and providing lab notebook copies.
2. Assist in the patent search. The company will usually hire a search to be done. The patents that come back need to be reviewed. Some search firms are better than others. If you have developed the ability to search patents yourself, you can assist.
3. Review the patent application for correctness. Remember, you are the one that truly understands how your patent works. Take the time to review it properly and give needed feedback. Especially take the time to carefully review the claims. Create a claim tree to help you understand the completeness of the claims. The strength of the patent will largely depend upon the strength of the claims.

Public Testing

While it is technically permissible to perform public testing before filing for a patent, it is suggested that public testing take place after at least filing a provisional patent. When those who test the idea know that the invention is patent pending, this will relieve them and you from worrying about secrecy issues. Unfortunately, you are still not out of the woods concerning secrecy. Should you discover important features during this period, you may want to add these features to your invention. Sometimes these ideas are suggestions brought forward by those testing your prototype. If the change is within the scope of the present patent, you may want to amend the patent to clarify it. If it is not within the scope, this may necessitate re-filing the patent. Also, you should secure, in writing, that any suggestions made by the public tester will be forfeited to you.

(Remember that the inventor has one year from the time of public use or offering the invention for sale to file a patent. The USPTO does not consider public testing to be “public use”. Keep good testing records during this time if you choose to test in public before you file for patent. These records should be well dated and witnessed if possible. Avoid the temptation to simply use the invention in public. If you do, note the dates).

Refine Aesthetic Form



Journal

The aesthetic form of the invention is often important, especially if it is a consumer product. Notice how you react to choices that you make when you buy among competing products. Given the choice of products having the same function, you will likely choose the one that has the most aesthetic appeal. If your product is not competing with any product of consequence, the aesthetic form is used to convince the customer that the product will actually perform as advertised. In other words, if the manufacturer has taken the time to refine the aesthetic form, surely the effort has been expended to ensure that it works!

1. Draw multiple pictures in your journal showing several different aesthetic forms of the product.
2. Show the pictures to others and get their opinions.
3. Since you have already filed for the patent, getting professional advice is a great idea.

Build Refined Prototypes



Once more, we build a prototype. This is the complete invention. The purpose of this invention is to convince you whether there is sufficient public acceptance of your invention. It is also used to determine the preferred form of the invention. Whether you create the preferred aesthetic form or not will be determined by your pocketbook. The closer to the final product the better, as you will be able to better assess public reaction. This is where it pays to have a real arsenal of tools if you are going to do it yourself. You may also wish to employ the services of a prototype shop. This can become quite expensive and it is necessary to create detailed drawing to convey the ideas.

1. Research the parts that must be purchased to build the prototype: motors, fans, electrical equipment, etc.
2. Create detailed drawings of the parts. Make sure that the parts fit together. It is usually not necessary to define detailed tolerances for professional prototype builders, but this can help the builder to determine the cost up-front.
3. Build the prototype. Remember that you can still use many of the inexpensive materials that we have already talked about.

Public Testing of Refined Prototypes



If you can afford the time to perform this step, you will receive a wealth of information. While performing public testing, you need to be careful that improvements are still owned by you. This can be done in a couple of ways.

- A) Insist that the user only bring up problems, not solutions.
- B) Have the participants sign a form that forfeits their invention rights to you. Then they are free to suggest improvements.

Resist the urge to ask questions too quickly. Rather, watch and then ask as done in “Discovery of Market”.

1. Write “Patent Pending” on everything that the public can see.
2. Conduct public testing of prototypes. As much as possible, try not to intervene or show the best methods for use. Also watch them perform their task or job. Note unexpected behaviors
3. Ask questions about what they were trying to do and why they did it. Especially ask about unusual behaviors.
3. Continue to log test ideas and results in the journal.

Sell the Invention

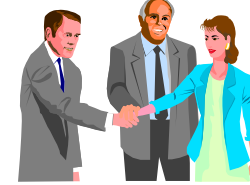
Low-Cost Advertising Graphics



Most inventors believe that the prototype will help them to sell their invention. Consequently, they will put some level of effort and cost into building a prototype that they hope will help to sell their invention. There is a lot of risk in doing this. First, you do not know the type of person that is going to be looking at your prototype. Some people will be able to see past the imperfections that will be there and understand the vision of what your idea can be. Others will have no vision. They need to be served up the full-blown invention, complete with packaging and labeling in order to get a vision. Only the perfect prototype can reduce this risk. This may be prohibitive in cost and time. Since you cannot know before hand who is going to look at your ideas, there is a better tool for accomplishing this task, the sales brochure. Remember who you will be talking to. Usually, this person is from the marketing or management arm of the organization. They are used to looking at brochures and will be impressed that you have gone to this level of effort to sell your idea. You will leave them with the impression that you are concerned with more than just the function of your invention.

1. Take pictures of the prototype or objects with similar shapes in an appropriate setting, such as performing the task.
2. Or, download an image from the computer that is very close. Be careful, these images are usually of much lower quality than one that you can take with a digital camera.
3. Enhance the image with the appropriate software to look like your invention.
4. Add appropriate labeling to the invention. Think of clever branding that may include the company's name that you are hoping to sell the invention to.
5. Make a brochure that describes the invention and its advantages. Do not describe too much. The purpose is to create interest.
6. If you have several ideas, put them into a binder or book that you can give to the potential buyer. Include patents and business agreements.

Sell the Idea



If you are at this point, then you have finally reached one of the most exciting (and potentially most discouraging) moments of your career in inventing. You must now become a sales person. This activity starts with doing a little homework to find potential buyers. Once the company is found, you need to contact the people in this company that have the authority to buy or license your invention. It may be necessary to sign an agreement that limits what either or both of you can do with the information exchanged.

1. Do your homework, look for companies that market products similar to your invention, or, manufacturers which will have the right vendor base to manufacture the product. Keep in mind that most companies are willing to take the risk of working with an outside inventor if the product concept is good enough. Some companies will be willing to move to new markets if the market is already growing rapidly.
2. Contact the company representative that has the authority to make these type of decisions. Someone in marketing and sales can usually tell you who this person is. You may find yourself being transferred around the company. This is not the run-around. Most people know whether they have the authority to talk to outside inventors.
3. Talk with the responsible individual. Try to arrange for a meeting. If this is not possible, mail or email your brochure. Few people will turn you down. Resist the urge to tell them too much at this point. Let the brochure create the vision before you give details. Arrange for a time to discuss the brochure.
4. Follow up with phone call to arrange for a personal meeting. By this time, they will have a better picture of your vision. Be candid and truthful about your claims of what the invention can do. If possible, arrange for a face-to-face visit. It may be appropriate to show prototypes during this visit.
5. Visit with the company representative. Work towards signing a business agreement. This may be an outright sale of the invention or an agreement to license the invention. Most companies will work towards an exclusive license. Be cautious of greediness. Ask for royalties that are within the common practice of the industry. Remember that there are more ideas where this idea came from. Seek help in putting together this business agreement. Such agreements can be found on the web for free or for a small fee.
6. It is customary to ask for money up-front which the company can apply to future royalties. This ensures that the company has motivation to move forward with the idea and also gives the inventor some capital to work with. If you have not yet filed a regular or traditional patent, this money can be applied to this task. This is a poor man's approach to gaining a traditional patent.
7. Be prepared to assist with the commercialization of the invention. Give whatever help is necessary to overcome manufacturing problems. Remember that if your idea is not manufacturable or comes to market poorly, this will affect your royalties. If you give good advice and support, this will deepen your relationship with a company that you may want to do future business with.