

## **PART I**

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# **PREPARE FOR SUCCESS**

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# **STEP 1. EVALUATE POTENTIAL IDEAS: RECOGNIZE THE MONEYMAKERS**

There are three types of inventions. The first is what I call *technology-enhanced ideas*, which are inventions that use current technology to improve existing products. For example, engineer Lonnie Johnson created the Super Soaker, those superpopular high-powered squirt guns, by borrowing industrial pumping technology to build air pressure and develop more thrust in a squirt gun. The second category, *technology-created products*, arises when a newly discovered technology leads to the development of entirely new products—such as Segway Human Transporters (those balancing two-wheel scooters by Dean Kamen), microwave ovens, and weed whackers. The first two categories are dominated by inventors with a technology background, typically not the everyday person. The third and by far the largest, category—*end-user-dominated inventions*—are new product ideas geared toward satisfying the people using the product. I've found that end-user-dominated inventions represent more than 80 percent, and probably more than 90 percent, of the inventions from individuals. Inventors find ideas in their everyday lives, work, or hobbies. The inventions might meet a functional need in the everyday world, like the Java Jacket, which provides extra insulation for paper coffee cups so people don't burn their fingers; they might come from employees assisting their employers, such as a portable in-flight entertainment system that cuts the cost of in-flight entertainment by \$1 million per plane; or they might jump-start people into scrapbooking,

like the Scrapbook Genie, which offers almost 30 easy-to-use scrapbook templates. People come up with these kinds of ideas all the time.

I know that most readers already have an idea in mind. You'll be in great shape if your idea scores well in this chapter's product evaluation. Even if your product doesn't score well, don't worry; you will probably create another idea with high potential. You learn in this chapter not only to look in your life for new products ideas but also to follow a scorecard for success that helps you recognize which ideas have a chance to succeed. This chapter covers how to:

- Generate a great idea: Discover "hot" product ideas in your daily life.
- Search for winning characteristics: Use a new product scorecard to forecast success.
- Perform quick and easy market research: Employ tactics that generate quick feedback.
- Know whether your product will make money: Determine perceived value versus manufacturing cost.

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### Work Irritant Leads to Success

*Dan Tribastone was a registered nurse in an orthopedic operating room. Orthopedic surgery requires that the area undergoing surgery be constantly bathed in water. A typical orthopedic surgery requires 75 to 100 liters (20 to 25 gallons) of water per patient. Before Tribastone created the Omni-Jug, disposing of this water was a major problem for the nurses, since they had to use 25 to 35 waste canisters during each procedure. Nurses had to make 150 to 200 new connections to the canisters during every operation. At first Tribastone simply recommended that the hospital purchase larger containers, but a search of available products didn't turn up any containers designed with the proper connections for orthopedic surgery. A major problem for nurses represented major opportunities for an inventor, and Tribastone was poised to cash in.*

*He failed in his early attempts to find a larger container to modify. The containers all collapsed with the required vacuum pressure, but in time he was able to find a larger, 3.5-gallon container that could withstand the pressure. After adding a couple of ports for input and evacuation, Tribastone introduced the Omni-Jug, which has since had annual sales of more than \$5 million per year. Two keys in Tribastone's success were (1) he knew exactly what the product had to do because he used the products himself every day; and (2) he was able to establish quick rapport with his target audience early in his sales effort because he worked in the same environment as they did.*

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## **GENERATE A GREAT IDEA: DISCOVER “HOT” PRODUCT IDEAS IN YOUR DAILY LIFE**

Everyday inventors glean ideas from everyday life. The best ideas improve product performance, meet a critical customer need, or simply have widespread appeal because of the product’s status or technology. Often these ideas are right in front of you, but you have to exercise some creative thinking to identify them. I frequently teach invention classes, and to demonstrate how frequently we overlook the obvious I ask how many people are satisfied with the hot water systems in their shower. Most people raise their hand. When I ask what they do before they get into a shower, people typically respond that they stick a hand in the shower to make sure the water is the right temperature. My next question is, why would people do that? People look at me and reply that they don’t want to get burned. Then I ask how the water company knows not to charge you for the water wasted before you hop into the shower. People respond, logically, that the water company simply charges you for all the water. By the time I’m finished, people are starting to wonder about their hot water system. Perhaps it isn’t nearly as efficient as they first thought. Some inventors have tried to produce a means for instant hot water in the bathroom, but at \$300 to \$500 a pop, the solution is too expensive. Someday an inventor will discover an economical solution. The point is that everyone’s lives have at least a few problems waiting for solutions. Those problems are all opportunities for the inventors who notice them.

Potential ideas are everywhere, but learning to see them requires a perceptive outlook. You can start by using four criteria to determine where to look for a potentially winning idea:

1. *What is important to you?* At home, important items might be things you use frequently; accessories to your passions, hobbies, or collections; or something your children or your pets need. The Swiffer, a mop with a throwaway dust-accumulating cover, is a good example of a frequently used product. People clean their floors all the time, and they were ready for an easier-to-use product. At work, an important item would be something that produces more profits or better products for your employer. William Boyer, an employee of Alaska Airlines, knew how expensive in-flight entertainment systems were so he created the digEplayer, a much cheaper in-flight personal entertainment player.
2. *What annoys you?* Too-hot coffee cups at the 7-Eleven were the inspiration for the Java Jacket from Jay Sorenson. Mountain bikers Frank Hermansen and Carl Winefordner thought it was too difficult to change a bike tire and came up with a 10-second tire-changing tool for bikes.

3. *What would be nice?* Someone in the late 1990s decided a mulching lawn mower would be nice, and today they are the dominant type of lawn mowers. Brian Glover and Francisco Guerra thought it was dangerous for women to accept drinks in public settings due to the availability of date-rape drugs in today's bar scene, so they created a coaster with test circles that would activate a warning from even one drop of a drink that had been tampered with. Bryon and Melody Sweetland thought glow-in-the-dark bubbles would be great fun for students and young adults, and they responded by creating Tekno Bubbles. The same opportunities apply at work. Patrick McNaughton, who worked in a restaurant, thought it would be nice to write dinner specials on a board that people could read in the dark. So he came up with fluorescent chalk that would glow under neon lighting.
4. *What would finish a job more quickly or easily?* People buy one product to provide a total solution to whatever they are trying to accomplish. Look for products that need other products to finish a job. The Scrubber, a dishwashing tool with a handle that drips dishwashing soap into a scrub brush is a good example. It eliminates the need to add soap to your brush each time you do dishes. Brad Young was a diehard outdoor enthusiast who liked music. Rather than struggle to comfortably use his headphones with a hat, he came up with the HeadBANDZ, a headband with built-in headphones.

Now you need to start using these four tactics to come up with ideas for inventions. Your goal is to list ideas that you want to explore, not necessarily whether you've discovered a potential product winner. Don't worry now about how to make the invention, how to get a patent, or how to build a prototype. Your first step is simply to make a list of two to five, maybe more, ideas for which there is potentially enough end-user demand to justify moving ahead.

## **SEARCH FOR WINNING CHARACTERISTICS: USE A NEW PRODUCT SCORECARD TO FORECAST SUCCESS**

Your first evaluation determines whether the product is perceived to be unique, with obvious and important benefits, and whether the product will have the right distribution channels. Use the product scorecard (see Figure 1.1) to rate your product on a 1-to-5 scale, with 1 being *very true* and 5 being *not true*. Your product should rate a 1 or 2 for at least half the responses. Explanations for each item follow the scorecard.

**Figure 1.1** New Product Scorecard: Inventor Evaluation

	1	2	3	4	5
The product has the “wow” factor.					
People agree with your premise.					
The product offers a total solution.					
The product targets people with passion.					
The product relates to an emerging market.					
The product targets new trends in existing markets.					
The product offers few technical challenges.					
Targeted customers can easily find the product.					
The product conveys its major benefits quickly.					
The product avoids competition with category-dominating companies.					

1. *The product has the “wow” factor.* When you have a product that does great things or meets important needs it will resonate with people. Later in the chapter I explain how to test the product idea with more people, but here’s the first question: When you first thought of the idea, did your eyes open wide and did you say, “Yes, this is it. I’ve got a great idea.”
2. *People agree with your premise.* Many times you have a premise, or a reason for your idea. Brad Young’s premise for his Head-BANDZ was that it is annoying to deal with both a hat or headband and headphones during outdoor fall and winter activities. For the Swetlands and their Tekno Bubbles, the premise was that people love to buy gimmicks to liven up a party.
3. *The product offers a total solution.* Cutting the number of products required for an activity from three to two isn’t all that impressive in the market, but you hit pay dirt when you cut the products needed to just one. Consider Christmas tree lights. When people

string lights across the eaves of their house or in front-yard trees they are forced to deal with lots of extension cords. One solution has been to have a cord with an eight- or ten-cord receptacle box on the end. That reduces the difficulty in connecting the cords, but you still need many extension cords. Kevin O'Rourke created a total solution with the ElectraTrac, an extension cord that has a plug-in every eight feet. Within two years his product sales exceeded \$3 million during the Christmas season. The Electra-Trac is a total solution because customers need only one cord.

4. *The invention targets people with passion.* Everyone is passionate about something, and you want people you are targeting to be passionate about your type of product. When people care about a product they evaluate it closely, read magazines, attend trade shows, and are generally easy to contact. They also buy products for their passion and are willing to spend more money to get a better-quality product. Passionate people will also replace a perfectly good product if they see something better on the market. Gourmet cooks have passion and are an ideal market for cooking supplies. If people aren't passionate, they may buy the same product previously purchased, without even considering other options.

In the case of business purchases, products that have importance to or impact on a company produce similar results: A product that improves fit and finish of a consumer product would be valuable to a company that had a perceived quality problem.

5. *The product relates to an emerging market.* During 2003, inventors introduced many new products to the scrapbook market. Scrapbooking had just started to take off, and products were first sold in small scrapbook stores. As scrapbooking caught on, large chains such as Michaels started adding scrapbook sections to their stores. Individuals and inventors who understood what scrapbookers wanted supplied many of the market's initial products. Sales were relatively easy because stores need products to fill their shelves. This same situation existed when kitchen-organizing shops such as Lechters first opened and when personal digital assistants (PDAs) became popular. The first cell phone accessories, such as belt holders and earphones, also came primarily from inventors.

For businesses, new trends are often the result of new processes, systems, or equipment that becomes popular. Inventors are the ones who typically come up with auxiliary products to make new innovative equipment or to make manufacturing and office systems work better. Supporting tools, such as sliding



keyboard shelves for computers, shelving for office cubicles, and sharpening devices for new cutting tools, are examples of products introduced by inventors to support new technology or products.

6. *The product targets new trends in existing markets.* Stay up-to-date in areas where you have a passion and take advantage of the latest trends. If you love dirt-bike racing, that's where you look for trends. You can also check with your family, friends, and acquaintances. When you talk to people, ask what they are passionate about, what their hobbies are, and what other interests they might have. Ask how that area is changing, what new things are occurring, and in what directions the market is going. I've found that at least 4 out of 10 people have some area that they are passionate about, and about half of those people are involved in an area where major market changes are developing. That means 2 out of 10 people might know a developing trend that you could act on.
7. *The product offers few technical challenges.* Inventors can and do introduce technically difficult products (the Apple computer was invented by two individuals), but this type of invention requires more money and more time than you are likely to have. You don't need to invent a technical product to be successful. Rollerblades, invented by Scott Olson, are not technically complicated at all, but they became an enormous success. Products with few technical challenges take less time and money to introduce, and they present far fewer challenges to the average inventor.
8. *Targeted customers can easily find the product.* Products are easy to find if you can buy them at a specialty store, from a catalog or mass merchandiser, and/or on a variety of Internet web sites. One of the nice features of a scrapbook product is that your target customers frequently go to scrapbook stores and will see your product several times during a six-month period. George Gruber's GeoMask, a tool for quickly applying masking tape to woodwork when painting, is sold in paint stores, in hardware stores, and by mass merchandisers. People painting can see the product every time they look at paint colors to buy. This exposure to target customers, which is not difficult to achieve for the right type of product, helps inventors build sales momentum.

Other products don't fit easily into a buying category. Where do people looking for a Date-Rape Drug Test Kit go if they want to buy it? For that matter, how do they even know it exists unless the inventors can afford a promotional campaign? Bars aren't places in which people will look to buy it, and the

product has a negative connotation for a bar, implying that customers are at risk of receiving a doctored drink. Inventors can run into many problems when there is not a logical place to sell the product to end users. The inventors, Brian Glover and Francisco Guerra, finally found a successful outlet in convenience stores, where young women stopped to buy last-minute supplies. Before that success, their efforts to sell the product to bars, liquor stores, liquor companies, and drugstores all failed.

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### Finding Distribution

*Kelly Greene liked swimming laps for recreation and fitness, but when she moved into an apartment complex the pool was too small to provide a meaningful workout. She decided that the solution was to find a way to swim in place. Greene tried several ways to hold her ankle so would swim in place, but everything she tried caused rubbing and abrasions. Greene found her solution when she saw surfboarders using plastic leashes to attach the board to their ankle. With some minor modifications, Greene had a product that wouldn't rub her ankle, and her product was ready to go. But sporting goods stores, the logical sales location, wouldn't take it. They had never sold a similar product and didn't think there was much demand for a product that allowed people to swim in place.*

*Greene's next step was to generate support for her product. She started talking to swim teams and showing them how her product could increase the number of places swimmers could train. After several years of persistence, the UCLA swim team started using Greene's product, and that started the ball rolling, as other teams adopted her training method. Sporting goods stores still wouldn't handle the product, because Greene's store display took up too much room. Greene finally achieved success when her displays started to sell products in pool supply stores. It was a long road for Greene because her product didn't fit in an established category.*

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9. *The product conveys its major benefits quickly.* Complex packaging and promotion are expensive, and since most inventors can't afford that expense their products need to sell themselves. Conveying benefits quickly means that 50 percent of the prospects can look at your product for about two to five seconds and know what it is and what its benefits are. A paint-can collar that keeps paint from dripping down the side conveys its benefits in one second. You'll know you have a winner when someone sees your product and says, "Hey, I know what that's for." Retail stores and distributors are heavily influenced by how quickly a product's benefits are grasped by customers; only when consumers have

this immediate understanding will products move off the shelf. Most inventors will find that the distribution network won't take a product if its benefits are unclear.

10. *The product avoids competition with category-dominating companies.* Rubbermaid dominates rubber-based housewares products. The company controls shelf space with a broad product line in supermarkets, at mass merchandisers, in hardware stores, and just about everywhere else this type of product line is sold. Breaking in a new product against Rubbermaid is tough, mostly because retailers like the convenience of buying the entire line from one supplier. Inventors have a much easier time selling into a fragmented market, where stores fill their shelves with products from a variety of manufacturers.

The 10 criteria on the product scorecard help you choose the best ideas to pursue. You need to be flexible in choosing an idea to pursue, because a product is rarely an ideal fit with each and every criterion. Selecting an idea calls for the inventor to weigh all the factors and choose the ideas with the best potential. I believe the most important consideration in any idea's potential is how innovative the idea is and the strength of its "wow" factor. The market wants and needs products with a high "wow" factor, and those products can overcome all sorts of obstacles to make it to market.

## **PERFORM QUICK AND EASY MARKET RESEARCH: EMPLOY TACTICS THAT GENERATE QUICK FEEDBACK**

### **Defining Your Idea**

Clarifying the features and benefits of your product will help you communicate your product idea with a brochure or handout, which you will need for initial market testing. Sometimes a product looks much better in your mind than it does on paper. This process helps you flesh out your idea a little more so you can better judge its potential. Start by laying out a simple one- or two-page document labeled "Preliminary Product Specifications—Product Name" and include the following nine points.

1. *Brief product description.* Try to limit this to one or two sentences. If the description takes more than that, your idea is too complicated.
2. *Target customer.* List those you think will buy your product. If several groups of target customers might buy it, list the primary group (those who will want the product most) first.

3. *Why the product is needed.* Explain why you feel a new product is needed in the market.
4. *Main product benefits.* List no more than three benefits. List only the ones that will make a difference in the buyer's purchasing decision.
5. *Product features.* Here you should list every product feature, even ones that you won't promote and those that don't make any difference in the purchasing decision. This list helps prevent you from omitting something during the design process.
6. *Product components.* Include every major piece that goes into the product. Listing the components helps you realize just how simple or complicated a product will be.
7. *How the product works.* A brief description of three to four lines should be sufficient.
8. *Process product assists.* This is needed only for an invention that is an accessory or aid to a process. For example, if you have a new type of dispensing tip for cake frosting that makes it possible to create better cake decorations, your invention is part of the process of decorating a cake. You then want to list which decorating tubes your invention will fit. This is often a key item for industrial inventions or auto repair tools and other service-related items that facilitate an already existing process.
9. *Preliminary drawing.* A drawing, even a simple line drawing of your product, is essential to show placement of the features and how they will look on the product. If you are unable to produce a rough drawing yourself, ask at art stores or art schools for the names of people who would do a drawing inexpensively.

## **Conducting an Early Screening with Friends, Family, and Acquaintances**

Family and friends can help you determine whether you have a great idea and whether they'd be users of the product. But you can't just ask people if they like your idea. You will get the best feedback if you set up a test. Here are a few simple guidelines to prevent overly friendly advice.

- *Have evaluators sign a confidential statement.* Appendix C has a sample Statement of Confidentiality and Nonuse. You receive two benefits from having people sign a statement of confidentiality: (1) It provides a written record that you are keeping your idea secret, which will help provide documentation about the date you first had your idea. (2) It will provide evidence that you

## **Preliminary Product Specification**

### ***Portable Workstation for Bikes***

1. *Brief product description:* A holding device for bicycle repair that can be mounted on a post, tree, or two-by-four. Allows repair in the field or at home.
2. *Target customer:* Serious bike enthusiasts, racers, and mountain bike riders who fine-tune their own bikes between uses and make their own repairs.
3. *Why the product is needed:* Bikes need to be lifted off the ground and held stationary for best results during tune-ups and repairs. Currently, bulky and costly bike repair stations are required, and bikers aren't able to take them to a race for between-heat tune-ups and/or repairs. Bike races and events have several heats, and, especially on mountain bike events, riders would like to make bike adjustments between heats.
4. *Main product benefits:* Field-repair bike station that is easily transported and assembled. Less bulky and less expensive for home repairs.
5. *Product features*
  - a. Strap can be adjusted to mount on poles or on a tree up to 12 inches in circumference.
  - b. Clamping mechanism holds up to 125 pounds.
  - c. System folds up into a 6- by 6- by 18-inch package.
  - d. Bike holding system will adjust to handle most bikes on the market.
6. *Product components*
  - a. Adjustable strap
  - b. Clamping mechanism to attach to tree or pole
  - c. Holder (positioned on strap) for frame, front- and rear-wheel stabilizing bars
  - d. Adjusting mechanism in holder to accommodate different bike sizes
  - e. Locking device to hold bars stationary in the holding device
  - f. Front- and rear-wheel clamping device
  - g. Frame clamping device
  - h. Bar from holder on strap to frame holder
7. *How product works:* The bike stand is quickly mounted on a pole or tree, and the strapping mechanism has built-in ribs to hold the strap firmly. Three rods, which can be rotated, attach to the front and back wheel and center frame. Once locked in place the bars hold the bike rigid.

haven't publicly disclosed your idea in case of a patent dispute. Signing a confidentiality statement will also help put your participants in a more serious frame of mind; they will realize that you are about to spend money to introduce your idea, and as a result they will be more careful in their evaluations.

- *Collect a range of products.* People are buying your product for a reason: Maybe they need a good party favor or a tool for surfacing a driveway. You want to find other products that people buy for the same reason they will buy yours. The products do not have to mirror existing products; they need only to serve a similar purpose.

In some cases, especially for a brand-new product type, find similarly priced products in the same category, even though they may not be used for the same purpose. For example, once I was doing a test on Dishnet, a net that keeps plastic glasses and baby products from flying around the dishwasher. There was only one product for the same use on the market and it was more of a rack than a net. Therefore I couldn't test five or six other products that keep plastic glasses and baby products in the dishwasher rack. Instead I found other plastic kitchen-related devices, including one that prevents milk from spilling when a container is full, a different style of Tupperware-type container, an apple-coring device, a banana holder, and similar items (see Figure 1.2).

- *Make a sales flyer for your product idea.* If you have a prototype, show that along with the other products; if you don't, create a brochure or an Internet page that shows a picture of the product and list its features and benefits clearly and concisely. Then do the same for the other products you plan to have people evaluate at the same time. If your flyer is just a rough draft, cut out pictures of similarly priced products and make a rough flyer for each of them.

Your goal is to have people evaluate all products with similar information. Pasting Internet photos on a sheet of paper with a little bit of copy about features and benefits works just fine. You don't want people comparing a nice product they can feel and touch to just a sales flyer for your product. The ideal situation is when people don't even know which product idea is yours.

- *Ask people to rate the products they are most likely to buy.* Have the people rank each product based on how likely they are to buy it, with 1 being the product they are most likely to buy. You don't need to have every customer rate your product as a 1 or 2. However, you do want at least 25 percent of the people to rate your product highly. Otherwise, the product just doesn't have enough appeal to sell well.

**Figure 1.2** New Product Scorecard for Dishnet and Similar Products

<b>Product</b>	<i>Likely to Buy</i> *	<i>Value</i> <sup>†</sup>	<i>Reason for “Likely to Buy” Rating</i>	<i>Reason for “Value” Rating</i>
Dishnet				
Easy-pour milk spout				
New style of Tupperware-type container				
Apple-coring device				
Banana holder				
Sponge Glove				
<p>* Rate the products from 1 to 6, with 1 being the product you are most likely to buy.</p> <p>† Rate the products from 1 to 6, with 1 being the product perceived to have the most value.</p>				

- *Ask people to rate products by value, with the highest value first.* The actual perceived value of a product is one of the toughest points for inventors to determine. This step helps clarify perceived value because every product you use for testing has a known price. If people consistently place your product between those costing \$8 to \$12 you will know your product has a perceived value of \$9 to \$11.
- *Ask people why they rated products highly or poorly.* Asking people this question helps you in two ways. First it helps you understand features people want or don't want in their product. This helps you decide on your own final feature mix. More important, I like to use lots of follow-up questions to better understand what potential buyers want in a product. For example, on a stationary bike rack some might say they rated the product poorly because they didn't like the way the front wheel was locked. You can then ask why they didn't like that feature. A respondent may state that the stand will make one or more repairs difficult. You can finish by asking what design might work better for that person.

## Evaluating How Others Score Your Product

After the initial screening, adjust your product to include the features people want and exclude the features that bothered people. After

incorporating your test group's input you should be able to answer yes to the following questions. (If you can't, you may want to make some additional adjustments to your idea).

- Did at least 25 to 35 percent of the people rate your product among the top three products they would most likely buy?
- Did people grasp your product's benefit quickly?
- Was the product perceived to be clearly different?
- Was your benefit perceived to be significantly better?
- Does your product have a strong perceived value?

If your idea didn't do well in the test, don't immediately drop your idea. If you asked your participants lots of follow-up questions you may have gathered information needed to move forward. Look over your responses from your survey and consider these three points.

1. *Did people have a strong positive or negative reaction to the products?*  
Strong reactions about a product indicate either that the product is important to prospects or that people find current products inadequate. You should work a little harder on the idea if people

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### Hit Cost Targets for Success

Ross Youngs first invented the Safety-sleeve, a sleeve using a clear plastic that allowed CDs to be stored in three-ring, fabric, and clear plastic binders. The Safety-sleeve was a big success, and 1.5 billion sleeves are sold per year. One thing Youngs learned from his first product was that the right manufacturing costs are key in determining profitability. Youngs was looking for another idea to introduce when he noticed that three-ring binders didn't stack well and looked old-fashioned for sales presentations. He decided to use his knowledge of plastics to create the UniKeep, a stackable, flat three-ring binder that provides a great-looking presentation tool for salespeople. To be sure he would make money, Youngs started by figuring out what the product could sell for in the stores. His binder was more deluxe than the traditional three-ring binder but still had to compete with it. After doing market research, Youngs set his retail target price at \$3.00. He then set his manufacturing target cost at 60 cents and his packaging costs at 10 percent of the manufacturing costs, or 6 cents. To meet those cost targets, Youngs had to figure out a way to make the binder, including the plastic rings in the plastic mold, in one step and how to put product information inside the UniKeep to keep packaging costs down. At the right price, the UniKeep was a good value. Shortly after its introduction, sales exceeded \$2.5 million per year.

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are looking for something better. If people are satisfied or ambivalent toward most products, you should pursue another product area that people feel passionate about.

2. *Was there a consistency about an unmet need in the product category that you may have overlooked in your product?* If so, could you meet this need with new product features or some modifications to your idea? Just because people don't see your premise as being true or important doesn't mean that another need or premise won't work for them.
3. *Did the people understand and appreciate the benefits of your idea?* Inventors see and understand the benefit of an idea clearly, and often they just assume that other people see their idea as clearly as they do. That is almost never the case. You might have the benefit that will really sell, but on your first pass people don't see it. You may need to rework your idea or brochure so people grasp its benefit. If people don't see your benefit, ask them what would help them see it better. You may be able to make some simple changes to clarify your benefits for customers.

## **KNOW WHETHER YOUR PRODUCT WILL MAKE MONEY: DETERMINING PERCEIVED VALUE VERSUS MANUFACTURING COST**

### **Determining the Price/Value Relationship**

You had some indication of the price you can charge in your earlier research with family and friends. Your next best step is to do a similar focus group survey with people you *don't* know to determine what they might be willing to pay for your product. You might find, though, that it is difficult to get people to spend that much time with you. In that case, you can use a product questionnaire as a substitute to determine the price point people feel comfortable with. Figure 1.3 is a product comparison for a new style of window awning (to keep out the sun on hot days) that can be easily taken down in the winter to prevent winter damage. The inventor thinks the easily detachable awning will create a buzz in northern climes and wants to know whether the market will support the product and its price despite its shorter life compared to competitive awnings. Be sure to notice the questions at the end of the questionnaire comparing this purchase to other potential home purchases. What you do to gauge the price/value relationship is vary the pricing of your product in several different versions of your questionnaire. For example, for the knockdown awning you might show a price range in one questionnaire of \$400 to \$550 and in another of \$1,000 to \$1,200. The questionnaires should show a

**Figure 1.3** Knockdown Awning System Product Questionnaire

*Product description:* A new, less expensive, lightweight canvas awning alternative. The product has permanently attached top and side holding bars, but the rest of the awning can be quickly detached and stored. The awning would have a life of 5 to 6 years versus a life of 7 to 10 years for a standard heavy-canvas awning and 10 to 15 years for an aluminum or metal awning. This lightweight awning requires less maintenance, especially in the colder climates, where it could be removed in the winter.

Yes \_\_\_\_ No \_\_\_\_ Do you have windows in your home that receive too much sun on hot days?

Yes \_\_\_\_ No \_\_\_\_ Do you have any awnings on your home now, or have you had them in the past?

Consider the following options for the next questions:

- A. Vertical, insulating window blinds; cost for a double window, \$650.00
- B. Standard heavy canvas awning; price for a double window, \$850 to \$1,200
- C. Knockdown lightweight awning; price for a double window, \$600 to \$750
- D. Aluminum or steel permanent awning; price for a double window, \$1,200 to \$1,500

[If possible, attach drawings or pictures for people to review.]

Rate the four options in the order you would buy them, with the product you would buy first rated 1.

\_\_\_\_ A. \_\_\_\_ B. \_\_\_\_ C. \_\_\_\_ D.

List the top reasons for choosing this model.

- \_\_\_\_ Appearance
- \_\_\_\_ Ability to remove in winter
- \_\_\_\_ Ability to open in winter
- \_\_\_\_ Ease of maintenance
- \_\_\_\_ Ease of installations
- \_\_\_\_ Ability to open on cloudy days
- \_\_\_\_ Product life
- \_\_\_\_ Familiarity with product
- \_\_\_\_ Price
- \_\_\_\_ Blocks out the most sun

Rate the models below 1, 2, and 3, with 1 placed next to the option you like best.

1. \_\_\_\_ A. \_\_\_\_ B. \_\_\_\_ C.

- A. Lightweight, easily removed aluminum awnings, \$1,400
- B. Standard canvas awning that snaps onto an aluminum frame; awning can be removed but frame stays on the house, \$1,100
- C. Steel, permanently attached awning, \$1,400

2. \_\_\_\_ A. \_\_\_\_ B. \_\_\_\_ C.

- A. New knockdown lightweight canvas awning, \$650
- B. Heavy canvas awning with removable sidebars so the awning can be rolled up (rather than just folded in half), \$1,000

(Continued)

**Figure 1.3** *Continued*

- C. Heavy canvas awning that stays down all year long, \$800
3. \_\_\_\_ A. \_\_\_\_ B. \_\_\_\_ C.
- A. New knockdown lightweight canvas awning, \$650
- B. Heavy canvas awning on same frame as the knockdown awning, \$875.00
- C. Lightweight, easily removable aluminum awning, \$1,400
4. \_\_\_\_ A. \_\_\_\_ B. \_\_\_\_ C.
- A. Heavy canvas awning that stays up all year long, \$800
- B. Heavy canvas awning that can be easily rolled up on cloudy days, \$1,000
- C. Heavy canvas awning on the same frame as the new knockdown awning, \$875
5. \_\_\_\_ A. \_\_\_\_ B. \_\_\_\_ C.
- A. Knockdown lightweight canvas awning, \$650
- B. Knockdown lightweight canvas awning that can be rolled up on cloudy days, \$800
- C. Knockdown lightweight canvas awning with an extra layer of material underneath to better block out the sun, \$750

Rate the following features 1 through 12 in order of how important they are to you.

- \_\_\_\_ Appearance
- \_\_\_\_ Ability to block out the sun
- \_\_\_\_ Can be rolled up on cloudy days
- \_\_\_\_ Can be removed in winter
- \_\_\_\_ Durability
- \_\_\_\_ Price
- \_\_\_\_ Ease of maintenance
- \_\_\_\_ Ease of installation
- \_\_\_\_ Weight of fabric (preference: \_\_\_\_ heavy \_\_\_\_ light)
- \_\_\_\_ Metal or aluminum versus canvas
- \_\_\_\_ Past performance history
- \_\_\_\_ Recommendation of friends

Rate the following prospective purchases from 1 to 6 based on the possibility of your buying each product. Rate your most likely purchase 1.

- \_\_\_\_ Storage shed for the backyard, \$800–\$1,000
- \_\_\_\_ Insulating, high-security steel front door, \$750–\$850
- \_\_\_\_ Low-maintenance aluminum gutters, one side of the house, \$600
- \_\_\_\_ New knockdown lightweight awnings, one double window, \$650
- \_\_\_\_ New curtains for the living room, \$900
- \_\_\_\_ Storm doors for sliding double doors to patio, \$600

sharp drop in your product's acceptance at some price point—the point at which the market assigns its top dollar value for your product. If it's easy to find people to take the survey, give everyone only one survey. If you have a limited number of people to choose from, you may give them surveys with different price points and still receive valid input.

## Determining Preliminary Manufacturing Costs

The two major cost components are the actual manufacturing costs and the packaging costs. About 7 to 10 percent of a product's total costs are smaller items, including scrap rework, warranty returns, and product liability. For this preliminary stage you need only worry about manufacturing and packaging costs. Unfortunately, there isn't an easy way to estimate manufacturing costs with just the product specification drawings you did earlier in the chapter. You also may have a tough time estimating your manufacturing costs for low-volume production. You can approximate costs by using comparable products when obtaining quotes. Here are seven guidelines that will help.

1. Find a product that is about the same size, is made of the same materials, and has about the same complexity as your product that is already being sold on the market. Anything at all similar to your product helps. For example, if your product holds garden tools such as rakes, is made of high-impact plastic, is 24 inches high by 24 inches wide by 18 inches deep, and has 12 slots for tools, you would look for another product made of similar high-impact plastic parts with similar complexity. That could be a laundry-sorting holder, a basement shelf system, a stereo rack, or an office supply product.
2. Estimate the actual production costs of the similar product. Since most products sell at a retail price that is three to four times their manufacturing costs, you should take the comparable product's retail price and multiply it by 25 percent (or 0.25). For example, if the similar product's retail price is \$19.99, you would estimate its production costs as follows:  $\$19.99 \times 0.25$ , or approximately \$5.00.
3. Find manufacturers who have the equipment to produce products similar to your product and the comparable product. There are several ways you can find these manufacturers:
  - Ask contacts in the industry.
  - Look in the Yellow Pages or in a business-to-business telephone book.
  - Look in your state and surrounding states' industrial directories.
  - Use the *Thomas Register of American Manufacturers* to find local companies that manufacture products made similarly to yours.

- Get assistance from your local Small Business Development Center (SBDC), at [www.sbaonline.gov](http://www.sbaonline.gov), or Service Corps of Retired Executives (SCORE), at [www.sba.gov/gopher/Local-Information/Service-Corps-Of-Retired-Executives/](http://www.sba.gov/gopher/Local-Information/Service-Corps-Of-Retired-Executives/).
  - Check out the web site of *Job Shop Technology* magazine ([www.jobshopotechnology.com](http://www.jobshopotechnology.com)), which lists manufacturers by type of manufacturing capability.
4. Get a quote for producing 1,000 units of your product and the similar product and for producing 5,000 units of each. You can adjust the numbers, but the lower number should be what you expect for a first production run, and the larger number should be for what you might order in a year.
  5. Determine the ratio of your production costs to the established product's production costs. Say the quote to produce 1,000 units of your product is \$6.00 and that for the established product is \$5.50; then the ratio is 1.09, with your product costing more.
  6. Take your estimated cost for the established product (from step 2) and multiply it by your ratio from step 5. Your projected cost would be  $\$5.00 \times 1.09$ , or \$5.45. This is not 100 percent accurate, but it gives you an idea of whether your product will make money.
  7. Understand the cost differences. Sometimes the costs won't make sense. In the preceding example, a \$5.45 price versus \$5.00 price might reflect a slightly larger or more complex product. But if the price difference is \$15.00 versus \$5.00, ask *why*. You may have one or two features that raise the product's price substantially. You might be able to reconfigure those features to cut the cost.

## Estimating Packaging Costs

Packing costs can be critical for some products, especially those in the lower price ranges. Packaging can total 20 to 25 percent of the total costs. A small consumer product in a *blister pack* (a clear-plastic molded piece glued to a cardboard backing) might cost 8 cents per piece at high volume or cost 25 cents per piece at low volume. Estimating costs is much simpler for packaging, as you can typically get quotes from packaging suppliers in your town. Follow these three steps to determine your packaging costs.

1. Decide on a type or types of packaging. Look at the products in the marketplace and see which ones have packaging that you like. Don't select just one type, though, as there could be considerable cost differences in packaging types.
2. Visit packaging suppliers in your town and get quotes for your product, or if your product isn't developed ask for a rough quote for packaging just like one you found on the market. You can also

find packaging suppliers, both local and nationwide, in the *Thomas Register of American Manufacturers* (check your library).

3. Ask for quotes that separate the up-front costs. Packaging requires an up-front investment for plates, tooling, and setup. But those are one-time expenses, so your first 1,000 units (which include up-front costs) will cost more than subsequent units. Get quotes that separate the up-front and setup costs from the per-unit price, and just use the per-unit price for the packaging estimate.

## Comparing Manufacturing Cost Pricing to Perceived Value

Marketers can compute selling prices in two ways: based on (1) costs or (2) the value that customers place on your product. Cost-based pricing typically prices a product four to five times the cost of its manufacture and is used because that's a price point at which the manufacturer can make money. If a product costs \$6.25 to make, the manufacturer knows it must sell the product for \$25.00 or there will be no profit. Value-based pricing is determined by what people are willing to pay for your product. Customers don't care if inventors need to sell a product for \$25.00; they only care about what the product is worth to them. You want to sell your product at its consumer value, but you don't want to sell the product at a price below what's needed to make money. Your last step is to multiply your manufacturing cost by 4 to get a projected cost-based sales price, then compare it to the value given to the product by the focus groups and production questionnaires you did earlier. You have a great chance to make money if the price based on manufacturing cost is lower than the value-based price. If the value-based price is lower than the cost-based price, you probably won't be successful.

Manufacture cost pricing ( $4 \times$ cost estimate)	_____
+ packaging costs	_____
Value from focus group sessions	_____
Value from product questionnaire	_____

## THE EDGE COUNTS

I believe a product that performs 10 percent better might have 100 percent more sales in the market, which might mean that developing a product with just a 10 percent edge might make the difference between your success and failure. Choosing the right idea is the most crucial decision an inventor makes in the entire process. Take your time to choose the best idea, and then dedicate enough energy and time to perfecting that idea. Inventing is a risky business, so you want to do all you can to improve your odds.