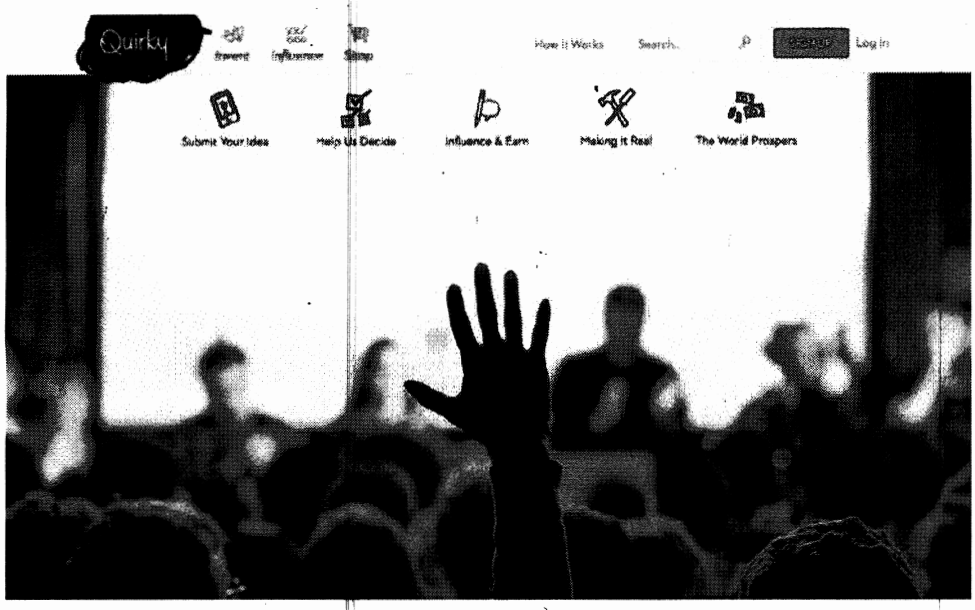
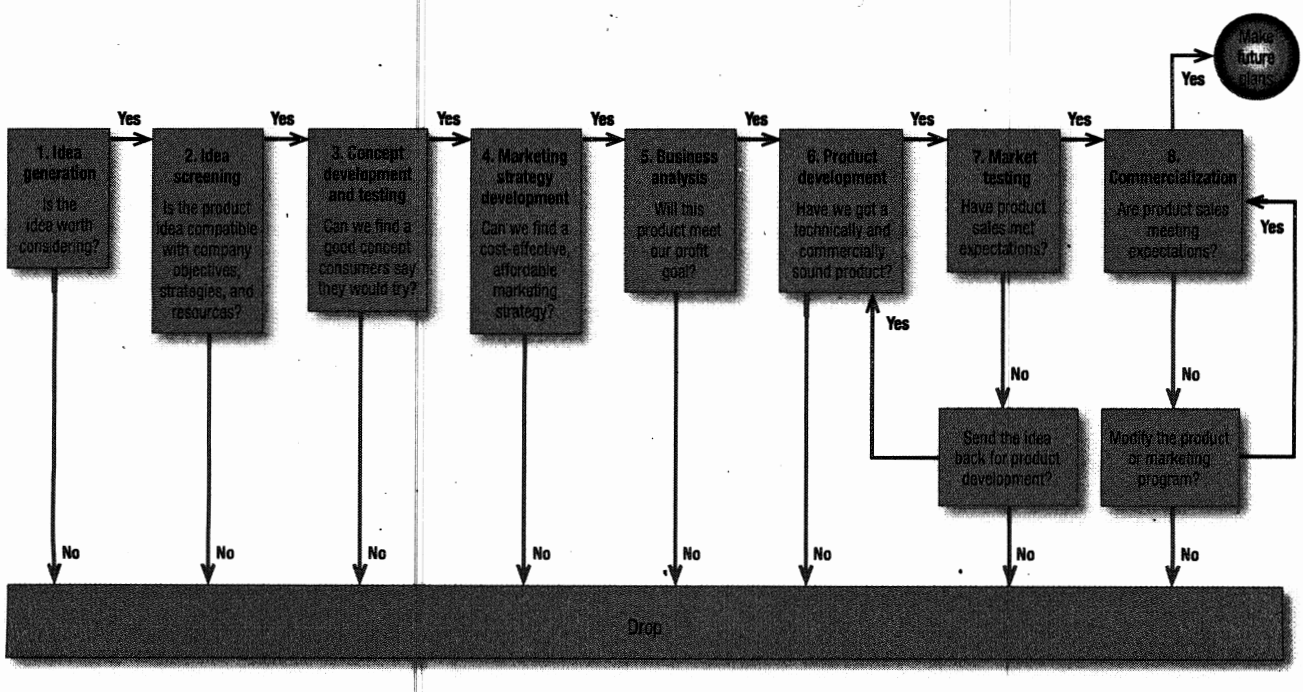


Source: Quirky

Quirky uses crowdsourcing with a large online consumer panel and its own experts to help develop new products.

of initial new-product ideas and concepts are winnowed down to a few high-potential products that are ultimately launched. But the process is not always linear. Many firms use a *spiral development process* that recognizes the value of returning to an earlier stage to make improvements before moving forward.[49]

Stage-gate systems make the innovation process visible to all and clarify the project leader's and team's responsibilities at each stage.[50] The gates or controls should not be so rigid, however, that they inhibit learning and the development of novel products.[51] These systems have evolved over the years as users have made them more flexible, adaptive, and scalable; built in better governance; integrated portfolio management; incorporated accountability and continuous improvement; and adapted the process to include *open innovation* and input from sources outside the company at different stages.[52]



| Fig. 15.1 |

The New-Product Development Decision Process

Managing the Development Process: Ideas

GENERATING IDEAS

The new-product development process starts with the search for ideas. Some marketing experts believe we find the greatest opportunities and highest leverage for new products by uncovering the best possible set of unmet customer needs or technological innovation.[53] New-product ideas can in fact come from interacting with various groups and using creativity-generating techniques.[54] (See "Marketing Memo: Ten Ways to Find Great New-Product Ideas.")

INTERACTING WITH EMPLOYEES Employees can be a source of ideas for improving production, products, and services.[55] Consider what these three firms have done:

- Toyota reports its employees submit 2 million ideas annually (about 35 suggestions per employee), more than 85 percent of which are implemented.[56]
- LinkedIn launched an in-house incubator that allows any employee to organize a team and pitch a project to a group of executives. The company has also created "hackdays"—one Friday a month when employees work on creative projects.57
- Pricewaterhouse Coopers set up an *American Idol*–style innovation competition dubbed "PowerPitch," in which the winning team received $100,000 and the opportunity to implement their proposal for a new line of business that could eventually be worth $100 million in revenue. Live chats and an online platform for discussion and voting led up to a five-team finale televised internally from the company's New York City headquarters.[58]

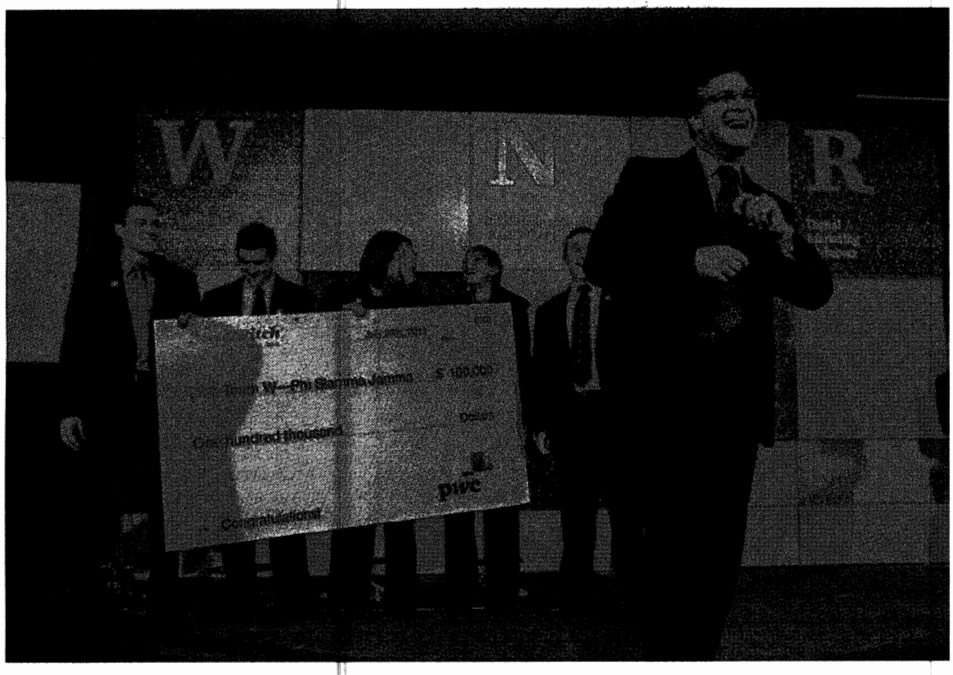
Top management can be another major source of ideas. Some company leaders, such as former CEO Andy Grove of Intel, take personal responsibility for technological innovation in the firm. New-product ideas can come from a variety of outside sources, as discussed below, however, their chances of receiving serious attention often depend on having an employee in the organization take the role of product champion.

INTERACTING WITH OUTSIDERS Encouraged by the open innovation movement, many firms are going outside their bounds to tap external sources of new ideas, including customers, scientists, engineers, patent attorneys, university and commercial laboratories, industrial consultants and publications, channel members, marketing and advertising agencies, and even competitors.[59] "Marketing Insight: P&G's Connect + Develop Approach to Innovation" describes how P&G has made new-product development more externally focused.

marketing memo — Ten Ways to Find Great New-Product Ideas

1. Run informal sessions where groups of customers meet with company engineers and designers to discuss problems and needs and brainstorm potential solutions.
2. Allow time off—scouting time—for technical people to putter on their own pet projects. Google has allowed 20 percent time off; 3M 15 percent; and Rohm & Haas 10 percent.
3. Make a customer brainstorming session a standard feature of plant tours.
4. Survey your customers: Find out what they like and dislike in your and competitors' products.
5. Undertake "fly-on-the-wall" or "camping out" research with customers, as do Fluke and Hewlett-Packard.
6. Use iterative rounds: a group of customers in one room, focusing on identifying problems, and a group of your technical people in the next room, listening and brainstorming solutions. Immediately test proposed solutions with the group of customers.
7. Set up a keyword search that routinely scans trade publications in multiple countries for new-product announcements.
8. Treat trade shows as intelligence missions, where you view all that is new in your industry under one roof.
9. Have your technical and marketing people visit your suppliers' labs and spend time with their technical people—find out what's new.
10. Set up an idea vault, and make it open and easily accessed. Allow employees to review the ideas and add constructively to them.

Source: Adapted from Robert G. Cooper, *Product Leadership: Creating and Launching Superior New Products* (New York: Perseus Books, 1998). Adapted with permission from the author. See also Robert G. Cooper and Scott J. Edgett, "Ideation for Product Innovation: What are the Best Methods?," *PDMA Visions*, March 2008, pp. 12–17.



Source: © Mark Peterson 2011

Pricewaterhouse Coopers has run an *American Idol* style innovation competition.

marketing insight

P&G'S Connect + Develop Approach to Innovation

In the first decade of the 21st century, one of the corporations with the fastest-growing revenue and profit was Procter & Gamble. Fueling its growth were successful new products such as Olay Regenerist, Swiffer, Mr. Clean Magic Eraser, Pulsonic toothbrushes, and Actonel, prescribed for osteoporosis. Many of these reflected innovation in what then-CEO A. G. Lafley called "the core"—core markets, categories, brands, technologies, and capabilities.

To more effectively develop its core, P&G has adopted a "Connect + Develop" model that emphasizes the pursuit of outside innovation. The firm collaborates with organizations and individuals around the world, searching for proven technologies, packages, and products it can improve, scale up, and market on its own or in partnership with other companies. It has strong relationships with external designers, distributing product development around the world to increase what it calls "consumer sensing."

P&G identifies the top 10 customer needs, closely related products that could leverage or benefit from existing brand equity, and "game boards" that map the adoption of technology across different product categories. It may consult government and private labs as well as academic and other research institutions, venture capital firms, individual entrepreneurs, and suppliers, retailers, competitors, and development and trade partners, using online networks to reach thousands of experts worldwide.

P&G's three core requirements for a successful Connect + Develop strategy are:

1. *Never assume that "ready to go" ideas found outside are truly ready to go.* There will always be development work to do, including risky scale-up.
2. *Don't underestimate the internal resources required.* A full-time, senior executive will need to run any connect-and-develop initiative.
3. *Never launch without a mandate from the CEO.* Connect-and-develop cannot succeed if it's cordoned off in R&D. It must be a top-down, company-wide strategy.

P&G vets 4,000 submissions annually and actively solicits innovation ideas from a larger network of individuals and businesses with a past history of working with the company. Through Connect + Develop—and improvements in product cost, design, and marketing—P&G increased R&D productivity nearly 60 percent during the decade. The innovation success rate has more than doubled, and costs have fallen.

Sources: www.pgconnectdevelop.com; Lydia Dishman, "How Outsiders Get Their Products to the Innovation Big League at Proctor & Gamble," *Fast Company*, July 13, 2012; Bruce Brown and Scott D. Anthony, "How P&G Tripled Its Innovation Success Rate," *Harvard Business Review*, June 2011, pp. 64–72; A.G. Lafley and Ram Charan, *The Game Changer: How You Can Drive Revenue and Profit Growth Through Innovation* (New York: Crown Business, 2009); Larry Huston and Nabil Sakkab, "Connect and Develop: Inside Procter & Gamble's New Model for Innovation," *Harvard Business Review*, March 2006, pp. 58–66.

Customer needs and wants are the logical place to start the search.[60] Griffin and Hauser suggest that conducting 10 to 20 in-depth experiential interviews per market segment often uncovers the vast majority of customer needs.[61] But other approaches can be profitable (see "Marketing Memo: Seven Ways to Draw New Ideas from Your Customers"). One marketer-sponsored café in Tokyo tests products of all kinds with affluent, influential young Japanese women.[62]

marketing memo — Seven Ways to Draw New Ideas from Your Customers

1. ***Observe how customers are using your product.*** Medtronic, a medical device company, has salespeople and market researchers regularly observe spine surgeons who use their products and competitive products to learn how theirs can be improved. After living with lower-middle-class families in Mexico City, Procter & Gamble researchers devised Downy Single Rinse, a fabric softener that removed an arduous step from the partly manual laundry process there.
2. ***Ask customers about their problems with your products.*** Komatsu Heavy Equipment sent a group of engineers and designers to the United States for six months to ride with equipment drivers and learn how to make products better. Procter & Gamble, recognizing consumers were frustrated that potato chips break and are difficult to save after opening the bag, designed Pringles to be uniform in size and encased in a protective tennis-ball-type can.
3. ***Ask customers about their dream products.*** Ask your customers what they want your product to do, even if the ideal sounds impossible. One 70-year-old camera user told Minolta he would like the camera to make his subjects look better and not show their wrinkles and aging. In response, Minolta produced a camera with two lenses, one for rendering softer images of the subjects.
4. ***Use a customer advisory board to comment on your company's ideas.*** Levi Strauss uses youth panels to discuss lifestyles, habits, values, and brand engagements; Cisco runs Customer Forums to improve its offerings; and Harley-Davidson solicits product ideas from its one million H.O.G. (Harley Owners Group) members.
5. ***Use Web sites for new ideas.*** Companies can use specialized search engines such as Technorati to find blogs and postings relevant to their businesses. P&G's corporate global Web site has a *Share Your Thoughts* section to gain advice and feedback from customers.
6. ***Form a brand community of enthusiasts who discuss your product.*** Harley-Davidson and Apple have strong brand enthusiasts and advocates; Sony engaged in collaborative dialogues with consumers to codevelop its PlayStation products. LEGO draws on kids and influential adult enthusiasts for feedback on new-product concepts in early stages of development.
7. ***Encourage or challenge your customers to change or improve your product.*** Salesforce.com wants its users to develop and share new software applications using simple programming tools; International Flavors & Fragrances gives a toolkit to its customers to modify specific flavors, which IFF then manufactures; LSI Logic Corporation also provides customers with do-it-yourself toolkits so customers can design their own specialized chips; and BMW posted a toolkit on its Web site to let customers develop ideas using telematics and in-car online services.

Source: From an unpublished paper, Philip Kotler, "Drawing New Ideas from Your Customers," 2013.

The traditional company-centric approach to product innovation is giving way to a world in which companies cocreate products with consumers. At BlankLabel.com, you can design your own unique shirt by specifying the cut, size, collar, buttons, cuffs, and pockets you want.[63]

As noted above, companies are also increasingly turning to crowdsourcing to generate new ideas. One form of crowdsourcing invites the online community to help create content or software, often with prize money or a moment of glory as an incentive.[64] When Baskin-Robbins ran an online contest to pick its next flavor, 40,000 consumers entered. The winning entry—from a 62-year-old grandmother of four—combined chocolate, nuts, and caramel and was launched as Toffee Pecan Crunch.[65] One recent convert to crowdsourcing is Cisco.[66]

CISCO The Cisco Internet of Things (IoT) Grand Challenge (formerly the Cisco I-Prize) is a worldwide initiative, aiming to bring the industry together and accelerate the adoption of breakthrough technologies and products that will contribute to the growth and evolution of the Internet of Things. Awards of U.S. $250,000 in cash prizes are to be shared among three winners, and can be used to jump-start ventures. Cisco also provides winners with mentoring, training, and access to business expertise from Cisco and other supporting organizations. From the inception of I-Prize, Cisco's rationale for these challenges—which drew 2,500 entrepreneurs from 104 countries in its first iteration—was simple: "In many parts of the world, you have incredibly smart people with incredibly great ideas who have absolutely no access to capital to take a great idea and turn it into a business."

In the first year, high-potential technology start-ups aimed to meet five main criteria with their submissions: (1) Does it address a real pain point? (2) Will it appeal to a big enough market? (3) Is the timing right? (4) If we pursue the idea, will we be good at it? and (5) Can we exploit the opportunity for the long term? The public judged the entries online, where Cisco found the detailed comments even more useful than the actual votes. The winning entry in the first competition was a plan for a sensor-enabled smart-electricity grid. The second competition drew 3,000 participants from more than 156 countries. The winning entry was from a team of five university students from Mexico and based on the idea of a "Life Account" that gathered information about users through connected devices in the physical world and online data from the

virtual world. The next two IoT Grand Challenges targeted Russia where Cisco has massive investment plans. One of the winning Russian IoT Grand Challenge teams developed a system that uses a mobile phone as a mediator for transmitting data from sensors to healthcare systems and is compatible with all major mobile phone platforms, as well as more than 40 medical devices.

As the Cisco I-Prize has evolved into the form of the Cisco IoT Grand Challenge, submissions are now entered into one of six categories: Applications and Application Enablement, Analytics, Management, Networking, Security or Things. Each submission must map to one of a variety of industries Education, Energy, Healthcare, Manufacturing, Oil and Gas, Retail, Smart Cities, Sports and Entertainment or Transportation.

Besides producing new and better ideas, cocreation can help customers feel closer to the company and create favorable word of mouth.[67] Getting the right customers engaged in the right way, however, is critical.[68]

Lead users can be a good source of input, even when they innovate products without the consent or knowledge of the companies that produce them. Mountain bikes developed as a result of youngsters taking their bikes to the top of a mountain and riding down. When the bikes broke, the youngsters began building more durable bikes and adding motorcycle brakes, improved suspension, and accessories. They, not bike companies, developed these innovations.

Some companies, particularly those that want to appeal to younger, leading-edge consumers, bring their lead users into their product-design process. Technical companies can learn a great deal by studying customers who make the most advanced use of the company's products and who recognize the need for improvements before other customers do.[69] In a business-to-business market, collecting information from distributors and retailers who are not usually in close contact can provide more diverse insights and information.[70]

Not everyone believes a customer focus helps create better new products.[71] As Henry Ford famously said, "If I'd asked people what they wanted, they would have said a faster horse." Some still caution that being overly focused on consumers who may not really know what they want, or what could be possible, can result in shortsighted product development and miss real potential breakthroughs.[72] Apple and IKEA have reputations for incorporating user input with some caution, and others believe focusing on lead users leads to incremental and not breakthrough innovation.[73]

STUDYING COMPETITORS Companies can find good ideas by researching the products and services of competitors and other companies. They can find out what customers like and dislike about competitors' products. They can buy their competitors' products, take them apart, and build better ones. They can ask their own sales representatives and intermediaries for ideas. These groups have firsthand exposure to customers and are often the first to learn about competitive developments. Electronic retailer Best Buy even checks with venture capitalists to find out what start-ups are working on.

Source: Cisco I-Prize (now referred to IoT Challenge) Moscow Team

Cisco's I-Prize innovation competition, now called IoT, draws entries from around the world, like this winning team from Russia, and has generated numerous new product ideas.

To establish the optimal brand positioning for the new product and the right points-of-parity and points-of-differences, marketers need a thorough understanding of the competition. Consider how the fierce video game console battle among Microsoft, Sony, and Nintendo has spurred innovation as each firm attempts to break loose from the pack.[74]

VIDEO GAME CONSOLES Makers of video game consoles fight tooth-and-nail for the minds and hearts of the 1 billion gamers worldwide, 220 million of whom live in the United States. For the 2013 holiday season, Microsoft's new Xbox One went head to head with Sony's new PS4. Although the two game consoles both added many new features—from motion-detection cameras to allow gamers to play using gestures to technology linking the gaming console to a smart phone or tablet—the Xbox One was priced $100 higher than the PS4's $399 list price. Microsoft also lost the early PR battle when it announced policies that angered customers, such as restrictions on the process of gaming and sharing games. And the company had a tough act to follow. Its earlier model, the Xbox 360, brought significant power and online functionality to gamers, introducing Achievements and the gamer score to facilitate competition. With sales of more than 75 million units, Xbox 360 also drew more than 40 million users into Microsoft's Xbox Live connected gaming service. The third major player, Nintendo, found great success in 2006 with its Wii gaming system. Bucking industry trends, it chose a cheaper, lower-power chip with fewer graphics capabilities, creating a totally different style of play based on physical gestures. A sleek white design and motion-sensitive wireless controller also made Wii much more engaging and interactive, and Nintendo's decision to embrace outside software developers meant new titles quickly became available. Its collaborative nature made Wii a hit with non-gamers drawn by its capabilities and with hard-core players seeking to master its many intriguing games. The 2012 follow-up, the Wii U, did not attract the same interest, putting Nintendo in a tough spot against its two chief competitors.

ADOPTING CREATIVITY TECHNIQUES Internal brainstorming sessions also can be quite effective—if conducted correctly. "Marketing Memo: How to Run a Successful Brainstorming Session" provides some guidelines.

marketing memo — How to Run a Successful Brainstorming Session

If done correctly, group brainstorming sessions can create insights, ideas, and solutions that would have been impossible without everyone's participation. If done incorrectly, they are a painful waste of time that can frustrate and antagonize participants. To ensure success, experts recommend the following:

1. A trained facilitator should guide the session, and the right physical environment must be used.
2. The right participants must be chosen. Sometimes it is useful to have a real mixture with many different points of view.
3. Participants must see themselves as collaborators working toward a common goal.
4. Rules need to be set up and followed so conversations don't get off track. Some structure is needed, though flexibility is desired too.
5. Participants must be given proper background preparation and materials so they can get into the task quickly.
6. Individual sessions before and after the brainstorming can be useful for thinking and learning about the topic ahead of time and for reflecting afterward on what happened.
7. During the session, each participant must be encouraged to participate and think freely and constructively. It may be useful to give participants time to think and gather their thoughts based on what they have heard.
8. To help stimulate thinking, participants may be told to identify and challenge existing assumptions, role-play some aspect of the situation they are analyzing, or consider borrowing ideas from other firms, even outside the industry.
9. Brainstorming sessions must lead to a clear plan of action and implementation so the ideas that materialize can provide tangible value.
10. Brainstorming can do more than just generate ideas—it should help build teams and leave participants better informed and energized.

Sources: Anne Fisher, "Why Most Brainstorming Sessions Fail," *Fortune,* August 23, 2013; "7 Ways to Enliven Your Next Brainstorming Session," *Forbes,* March 18, 2013; Natalie Peace, "Why Most Brainstorming Sessions Are Useless," *Forbes,* April 9, 2012; Linda Tischler, "Be Creative: You Have 30 Seconds," *Fast Company,* May 2007, pp. 47–50; Michael Myser, "When Brainstorming Goes Bad," *Business 2.0,* October 2006, p. 76; Robert I. Sutton, "Eight Rules to Brilliant Brainstorming," *BusinessWeek IN Inside Innovation,* September 2006, pp. 17–21.

Creativity is mostly about making connections in ways that are not obvious. Here is a sampling of techniques for stimulating creativity in individuals and groups.[75]

- ***Attribute listing.*** List the attributes of an object, such as a screwdriver. Then modify each attribute, such as replacing the wooden handle with plastic, providing torque power, adding different screw heads, and so on.
- ***Forced relationships.*** List several ideas and consider each in relationship to each of the others. In designing new office furniture, for example, consider a desk, bookcase, and filing cabinet as separate ideas. Then imagine a desk with a built-in bookcase or a desk with built-in files or a bookcase with built-in files.
- ***Morphological analysis.*** Start with a problem, such as "getting something from one place to another via a powered vehicle." Now think of dimensions, such as the type of platform (cart, chair, sling, bed), the medium (air, water, oil, rails), and the power source (compressed air, electric motor, magnetic fields). By listing every possible combination, you can generate many new solutions.
- ***Reverse-assumption analysis.*** List all the normal assumptions about an entity and then reverse them. Instead of assuming that a restaurant has menus, charges for food, and serves food, reverse each assumption. The new restaurant may decide to serve only what the chef bought that morning, provide some food but charge for the time the person sits at the table, or design an exotic atmosphere and rent the space to people who bring their own food and beverages.
- ***New contexts.*** Take familiar processes, such as people-helping services, and put them into a new context. Imagine helping dogs and cats with day care service, stress reduction, psychotherapy, funerals, and so on. Instead of sending hotel guests to the front desk to check in, greet them at curbside and use a wireless device to register them.
- ***Mind mapping.*** Start with an idea, such as a car, then think of the next idea that comes up (say Mercedes) and link it to car, then think of the next association (Germany), and do this with all associations that come up with each new word. Perhaps a whole new idea will materialize.

New-product ideas can arise from *lateral marketing* that combines two product concepts or ideas to create a new offering.[76] Cereal bars are a successful combination of cereal and snacking. Kinder Surprise combined candy with a toy.

USING IDEA SCREENING

In screening ideas, the company must avoid two types of errors. A *DROP-error* occurs when the company dismisses a good idea. It is extremely easy to find fault with other people's ideas (Figure 15.2). Some companies shudder when they look back at ideas they dismissed or breathe sighs of relief when they realize how close they came to dropping what eventually became a huge success. Consider the hit television show *Friends*.[77]

FRIENDS The NBC situation comedy *Friends* enjoyed a 10-year run from 1994 to 2004 as a perennial ratings powerhouse. But the show almost didn't see the light of the day. According to an internal NBC research report, the pilot episode was described as "not very entertaining, clever, or original" and was given a failing grade, scoring 41 of a possible 100. Ironically, the pilot for an earlier hit sitcom, *Seinfeld*, was also rated "weak," though the pilot for the medical drama *ER* scored a healthy 91. Courteney Cox's Monica was the *Friends* character who scored best with test audiences, while characters portrayed by Lisa Kudrow and Matthew Perry were deemed to have marginal appeal, and the Rachel, Ross, and Joey characters scored even lower. Adults 35 and older in the sample found the characters as a whole "smug, superficial, and self-absorbed."

The purpose of screening is to drop poor ideas as early as possible. The rationale is that product-development costs rise substantially at each successive development stage. Most companies require new-product ideas to be described on a standard form for a committee's review. The description states the product idea, the target market, and the competition and roughly estimates market size, product price, development time and costs, manufacturing costs, and rate of return.

The executive committee then reviews each idea against a set of criteria. Does the product meet a need? Would it offer superior value? Can it be distinctively advertised or promoted? Does the company have the necessary know-how and capital? Will the new product deliver the expected sales volume, sales growth, and profit? Consumer input may be necessary too.[78]

| Fig. 15.2 |
Forces Fighting New Ideas

Source: With permission of Jerold Panas, Young & Partners Inc.

A research study almost killed one of the all-time successful TV sitcoms, *Friends*, reinforcing the fact that research must be interpreted and used carefully.

Source: © Pictorial Press Ltd/Alamy

Management can rate the surviving ideas using a weighted-index method like that in Table 15.2. The first column lists factors required for successful product launches, and the second column assigns importance weights. The third column scores the product idea on a scale from 0 to 1.0, with 1.0 the highest score. The final step multiplies each factor's importance by the product score to obtain an overall rating. In this example, the product idea scores 0.69, which places it in the "good idea" level. The purpose of this basic rating device is to promote systematic evaluation and discussion, not to make the decision for management.

As the idea moves through development, the company will need to constantly revise its estimate of the product's overall probability of success, using the following formula:

$$\text{Overall probability of success} = \text{Probability of technical completion} \times \text{Probability of commercialization given technical completion} \times \text{Probability of economic success given commercialization}$$

TABLE 15.2 Product-Idea Rating Device

Product Success Requirements	Relative Weight (a)	Product Score (b)	Product Rating (c = a × b)
Unique or superior product	.40	.8	.32
High performance-to-cost ratio	.30	.6	.18
High marketing dollar support	.20	.7	.14
Lack of strong competition	.10	.5	.05
Total	1.00		.69

[a] Rating scale: .00–.30 poor; .31–.60 fair; .61–.80 good. Minimum acceptance rate: .61

For example, if the three probabilities are estimated at 0.50, 0.65, and 0.74, respectively, the overall probability of success is 0.24. The company then must judge whether this probability is high enough to warrant continued development.

Managing the Development Process: Concept to Strategy

Attractive ideas must be refined into testable product concepts. A *product idea* is a possible product the company might offer to the market. A *product concept* is an elaborated version of the idea expressed in consumer terms.

CONCEPT DEVELOPMENT AND TESTING

Concept development is a necessary but not sufficient step for new-product success. Marketers must also distinguish winning concepts from losers by testing.

CONCEPT DEVELOPMENT

Imagine a large food-processing company gets the idea of producing a powder to add to milk to increase its nutritional value and taste. This is a product *idea*, but consumers don't buy product ideas; they buy product *concepts*.

A product idea can be turned into several concepts. The first question is: Who will use this product? It can be aimed at infants, children, teenagers, young or middle-aged adults, or older adults. Second, what primary benefit should this product provide—taste, nutrition, refreshment, or energy? Third, when will people consume this drink—at breakfast, midmorning, for lunch, midafternoon, with dinner, late evening? By answering these questions, a company can form several concepts:

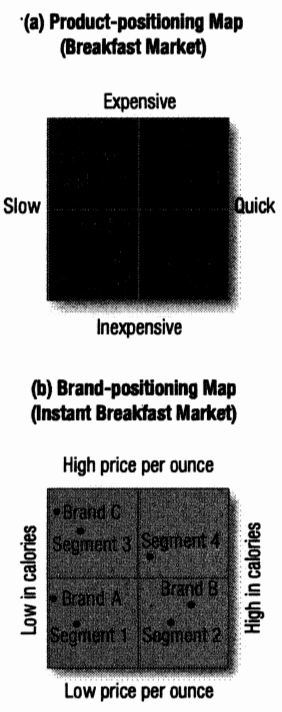
- ***Concept 1.*** An instant drink for adults who want a quick nutritious breakfast without preparation.
- ***Concept 2.*** A tasty snack for children to drink as a midday refreshment.
- ***Concept 3.*** A health supplement for older adults to drink in the late evening before bed.

Each concept represents a *category concept* that defines the product's competition. An instant breakfast drink would compete against bacon and eggs, breakfast cereals, coffee and pastry, and other breakfast alternatives. A snack drink would compete against soft drinks, fruit juices, sports drinks, and other thirst quenchers.

Suppose the instant-breakfast-drink concept looks best. The next task is to show where this powdered product would stand in relationship to other breakfast products via perceptual mapping. Figure 15.3(a) uses the two dimensions of cost and preparation time to create a *product-positioning map* for the breakfast drink, which offers low cost and quick preparation. Its nearest competitors are cold cereal and breakfast bars; its most distant is bacon and eggs. These contrasts can help communicate and promote the concept to the market.

Next, the product concept becomes a *brand concept*. Figure 15.3(b) is a *brand-positioning map*, a perceptual map showing the current positions of three existing brands of instant breakfast drinks (A–C) as seen by consumers. As Chapter 10 described, it can also be useful to overlay current or desired consumer preferences on to the map. Figure 15.3(b) also shows four segments of consumers (1–4) whose preferences are clustered around the points on the map.

The brand-positioning map helps the company decide how much to charge and how calorific to make its drink. Three segments (1–3) are well served by existing brands (A–C). The company would not want to position itself next to one of those existing brands, unless that brand is weak or inferior or market demand was high enough to be shared. As it turns out, the new brand would be distinctive in the medium-price, medium-calorie market or in the high-price, high-calorie market. There is also a segment of consumers (4) clustered fairly near the medium-price, medium-calorie market, suggesting this may offer the greatest opportunity.



| Fig. 15.3 |
Product and Brand Positioning

CONCEPT TESTING

Concept testing means presenting the product concept to target consumers, physically or symbolically, and getting their reactions. The more the tested concepts resemble the final product or experience, the more dependable concept testing is. Concept testing of prototypes can help avoid costly mistakes, but it may be especially challenging with radically different, new-to-the-world products.[79] Visualization techniques can help respondents match their mental state with what might occur when they are actually evaluating or choosing the new product.[80]

In the past, creating physical prototypes was costly and time consuming, but today firms can use *rapid prototyping* to design products on a computer and then produce rough models to show potential consumers for their reactions. Firms developing big-ticket items such as orthopedic devices for knee replacements or electric cars use rapid prototyping in new-product development to save time and money.[81] In response to a short-term oversupply of wine in the marketplace, the makers of Kendall-Jackson developed two new brands by using rapid prototyping to quickly bring their ideas to life, selling 100,000 cases of each brand, 10 times more than expected, in the process.[82]

Companies are also using *virtual reality* to test product concepts. Virtual reality programs use computers and sensory devices (such as gloves or goggles) to simulate reality. Lockheed Martin uses virtual reality to develop its GPS satellites for the U.S. Air Force.[83] Supercomputers allow for elaborate product testing to assess changes in performance and supplement consumer input. Kenworth used to test new truck designs with clay models and wind tunnels. Using supercomputer analysis, it can now make more accurate estimates of how much drag and fuel use it can eliminate with new trimmed and tapered mud flaps (answer: $400 of a typical truck's annual gas bill).[84]

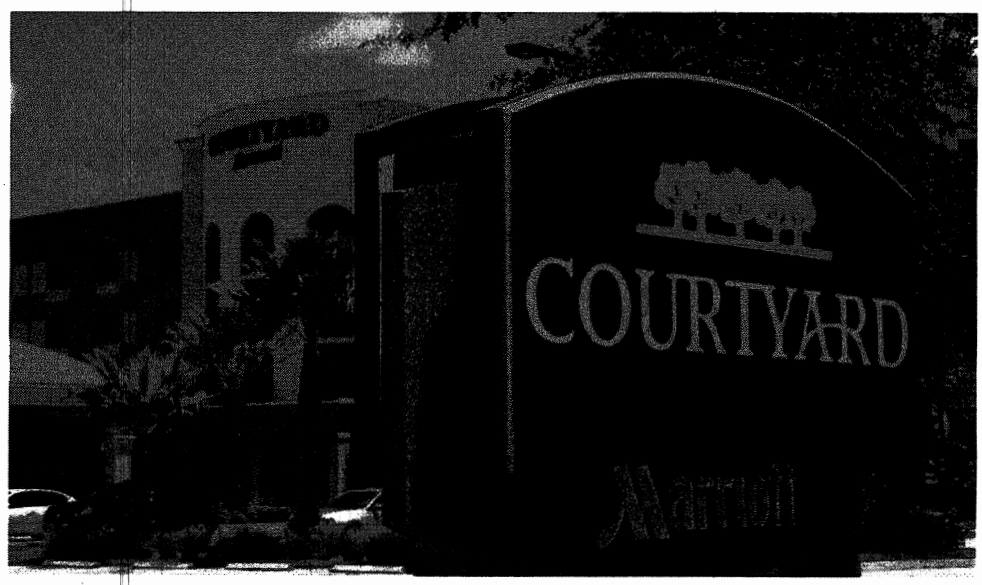
Concept testing presents consumers with an elaborated version of the concept. Here is the elaboration of concept 1 in our milk example:

> Our product is a powdered mixture added to milk to make an instant breakfast that gives all the day's needed nutrition along with good taste and high convenience. The product comes in three flavors (chocolate, vanilla, and strawberry) and individual packets, six to a box, at $2.49 a box.

After receiving this information, researchers measure product dimensions by having consumers respond to questions like these:

1. ***Communicability and believability***—"Are the benefits clear to you and believable?" If the scores are low, the concept must be refined or revised.
2. ***Need level***—"Do you see this product solving a problem or filling a need for you?" The stronger the need, the higher the expected consumer interest.
3. ***Gap level***—"Do other products currently meet this need and satisfy you?" The greater the gap, the higher the expected consumer interest. Marketers can multiply the need level by the gap level to produce a *need-gap score*. A high score means the consumer sees the product as filling a strong need not satisfied by available alternatives.
4. ***Perceived value***—"Is the price reasonable in relationship to value?" The higher the perceived value, the higher is expected consumer interest.
5. ***Purchase intention***—"Would you (definitely, probably, probably not, definitely not) buy the product?" Consumers who answered the first three questions positively should answer "Definitely" here.
6. ***User targets, purchase occasions, purchasing frequency***—"Who would use this product, when, and how often?"

Respondents' answers indicate whether the concept has a broad and strong consumer appeal, what products it competes against, and which consumers are the best targets. The need-gap levels and purchase-intention levels can



A in-depth conjoint analysis helped to design the Courtyard by Marriott hotel chain.

Source: © Jeff Greenberg "0 people images"/Alamy