

USER-DEVELOPED PRODUCTS

For an internal application, IBM designed and built the first printed circuit card insertion machine of a particular type to be used in commercial production.⁶ After building and testing the design in house, IBM sent engineering drawings of its design to a local machine builder along with an order for eight units. The machine builder completed this and subsequent orders and applied to IBM for permission to build essentially the same machine for sale on the open market. IBM agreed, and as a result, the machine builder became a major force in the component insertion equipment business.

In the early 1970s, store owners and sales personnel in southern California began to notice that youngsters were fixing up their bicycles to look like motorcycles, complete with imitation tailpipes and chopper-type handlebars. Sporting crash helmets and Honda motorcycle T-shirts, the youngsters raced fancy 20-inchers on dirt tracks. Obviously onto a good thing, the manufacturers came out with a whole new line of motorcross models. California users refined this concept into the mountain bike. Manufacturers were guided by the California customers to develop new refinements, including the 21-speed gear shift that doesn't require removing one's hands from the bars. Mountain bike firms are still watching their West Coast customers.

Using Customers to Identify Unmet Needs

Customers are a prime source of unmet needs. The trick is to access them and to get customers to detect and communicate unmet needs. What product-use experience problems have emerged? What is frustrating? How does it compare with other product experiences? Are there problems with the total-use system in which the product is embedded? How can the product be improved? This kind of research helped Dow come up with Spiffits, a line of premoistened, disposable cleaning towels that addressed the need for a towel already moistened with a cleaning compound.

A structured approach, termed *problem research*, develops a list of potential problems with the product or service. The problems are then prioritized by asking a group of 100–200 respondents to rate each problem as to whether (1) the problem is important, (2) the problem occurs frequently, and (3) a solution exists. A problem score is obtained by combining these ratings. A dogfood problem research study found that buyers thought dog food smelled bad, cost too much, and was not available in different sizes for different dogs. Subsequently, products responsive to these criticisms emerged. Another study led an airline to modify its cabins to provide more leg room.

Eric von Hippel, a researcher at MIT who studies customers as sources of service innovations, suggests that lead users provide a particularly fertile ground for discovering unmet needs and new product concepts.⁷ Lead users are users who:

- Face needs that will be general in the marketplace, but face them months or years before the bulk of competitors. A person who is very much into health foods and nutrition would be a lead user with respect to health foods if we assume that there is a trend toward health foods.
- Are positioned to benefit significantly by obtaining a solution to those needs. Lead users of office automation would be firms that would benefit significantly from technological advancement.

An effective and efficient way to access customers is to use the Internet to engage them in a dialogue. Dell, for example, has a website called Ideastorm where customers can post ideas and observe and "vote" on the ideas of others. They also see the reaction of Dell, which can include responses such as "under review" or "partially implemented." Among the suggestions was to have backlit keyboards, to support free software such as Linux, and to design quieter computers. Starbucks with its MyStarbucksIdea site is among many firms that are attempting to do something similar. A risk with customer-driven idea sites is that there can be a surge around an idea that is impractical or unwise, and the company would then be defensive. But it has the potential of leveraging many perspectives to generate ideas that can result in real energy and innovation.

A less direct way is to create communities of customers and let them converse with each other. The conversation will illuminate problems and unmet needs. P&G, for example, has the engagement platform BeingGirl, where preteen and teen girls can discuss coming of age issues with each other. It is an effective forum to spread awareness and knowledge about P&G feminine hygiene products and programs. Intuit's site, developed to allow tax professionals to answer each other's questions, provides insights into the kinds of questions being posed, which in turn informs Intuit's TurboTax refinement efforts.

Qualitative Research

Qualitative research is a powerful tool in understanding customers and potential customers, their unmet needs, and their motivation at a very basic level. It can involve focus-group sessions, in-depth interviews, customer case studies, or ethnographic research. The concept is to search for the real concerns and motivations that do not emerge from structured lists and that customers may not be consciously aware of. For instance, buyers of sports utility vehicles might really be expressing their youth or a youthful attitude rather than a set of functional benefits. Getting inside the customer can provide strategic insights that do not emerge any other way.

Although a representative cross-section of customers is usually sought, special attention to some is often merited. Very loyal customers are often best able to articulate the bonds that the firm is capable of establishing. Lost customers (those who have defected) are often particularly good at graphically communicating problems with the product or service. New customers or customers who have recently increased their usage may suggest new applications. Organizational buyers using multiple vendors may have a good perspective of the firm relative to the competition.

The Internet has changed and enhanced qualitative research.⁸ No longer time and location limited—you don't have to gather people into a conference room or send out interviewers to conduct one-on-one dialogues. Respondents do not have to rely on the memory of an experience weeks or months ago. A research study can now access experiences as they happen, where they happen. Respondents do not have to be from one location, but can be global. Further respondents, even if globally located, can be engaged with each other. Spontaneous interactions and moments of self-discovery can be stimulated. And it is more cost-effective and much faster than focus groups, in-depth interviews, or ethnographies.

- Firms can address research tasks that ask consumers to engage in the following activities:
- **Assume that you are interested in wine experiences.** Respondents can keep a journal and show by video or picture the context of their wine experience and their observations about it. A moderator can ask probing questions.