

Customers As Collaborators

Traditional market research methods for examining customer needs regarding new products don't always work very well anymore relative to technical and industrial products. Customer needs are changing so rapidly that they often can't explain what they really need. This doesn't mean that small and mid-sized manufacturers (SMMs) shouldn't research customer needs— they just have to work harder at working *closer* with the most innovative customers— often called "lead users."

Erik von Hippel, a new product guru from MIT, notes that "lead users— often the trend setters in an industry— are often better sources of new products than the manufacturers themselves." He claims that in the high technology field as many as 80 percent of new product ideas originate with users.

There is a definite shift away from traditional market research methods to customer collaboration. Design becomes something that should be done *with* the customers, rather than for the customers.

Troubleshooting

One problem you might encounter with this approach, however, is that customers continue to change their minds— the customer's customers are changing their needs so fast to compete in the globalized economy that they are not sure what they want or need, making it difficult to develop the right product in such a fast changing environment.

Another potential problem is that a customer may not be able to explain their problems and needs in terms of a new product solution. Oftentimes, they need something that they can see, touch, and analyze, like a model or prototype.

Down To Development

So how do you develop new products in this kind of environment? Here are some suggestions for methods that are practical and proven by innovative manufacturers who have been very successful with new industrial products:

1. Call 10 customers— Begin by developing a premise as to why a customer would want to buy your new product idea and then test the premise on ten innovative customers. It costs very little to make phone calls to customers who are innovative thinkers.

2. As soon as possible, design a model— This could be a computer simulation, a cardboard model, a stereolithography model, or even a real prototype (if the product is low cost and small). Or you can use slides, videos, specifications, and 3-D drawings from engineering programs like Pro E to get customers to really begin to understand the idea and to get explicit feedback.

3. Use lead users as collaborators in the design— As soon as you have a rough design or specifications, test them out on some good customers who you think could buy the new product. One example of success in this endeavor is the Palletizer Division of Columbia Machine, Inc., a mid-size manufacturer of automatic, material handling machines that stack consumer products at the end of a production line. The division developed a high-speed machine for a different industry with a considerable amount of new technologies that could double the speed and output of a production line.

To begin the process, the senior managers of the midsize manufacturer selected one of the biggest and best plants in the customer's division and made a call on the plant armed with engineering drawings and specs. The customer informed them that the machine design would have to be taller, wider, and include a lot of material handling options to work on this specific production line.

4. Encourage lead users to experiment with your design— After you have designed a prototype, the next step is to encourage customers to evaluate the prototype and offer new ideas or make changes. This is the step that allows the customer or prospect to touch, feel, and operate the new product. Since the Palletizer Division had already

built a prototype that was operable, they invited the customer's engineers to come to their plant and witness a test running the customer's products. The customer was very encouraged and decided to invest in having 6 people visit the manufacturer's plant for a week to discuss the machine specifications.

5. Experimenting with the new product in the customer's plant— For the Palletizer Division, once a new prototype was finished and tested (with the customer at the test) it was shipped to a customer's plant and connected to a production line running actual production. The customer was allowed to operate the machine for 6 months of testing. This is a critical phase of new product development for production line machines because, as good as the design is, there is simply no way of finding out design problems until the machine is operating 24 hours a day in production.

6. Hire a marketing person as part of the team— There are simply a lot of communications with customers that cannot be done by the research engineer.

7. Form partnerships— Sometimes developing a partnership with a large customer that can help fund part of the project makes sense.

In the example of the Palletizer Division, the customer invested hundreds of their own engineering and production hours testing and developing the machine. They spent 6 months of production time on making the new product work in their plant. Both the manufacturer and the customer had made heavy financial investments in the new product project. The bugs were all worked out of the new prototype and the customer had enough information to settle on a final design as the standard for all of their production lines. The new machine eventually achieved 99 percent uptime on the product line and the customer purchased new machines for all of their plants.

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