



# Developing the Perfect Vacuum

By Dawn Shoemaker

↑ There are many examples of companies that have learned early the importance of listening to their customers. Says consultant Robert Waterman Jr., the author with Tom Peters of *In Search of Excellence*, “Companies that do [listen to their customers] are always going to know more quickly what the market needs and the product the customer wants.”

Twenty-five years ago, Japanese companies, especially Japan’s automakers, became famous for this process of listening to the customer. They would ask customers their likes and dislikes about a current model and—by evaluating their responses—develop new automobiles that addressed these concerns. Soon American companies (in particular, car companies) once again followed suit, often to great success.

For instance, in the mid-1980s, General Motors realized it would have to downsize the full-sized Cadillac in order to appeal to buyer trends and meet new federal fuel guidelines. GM planners met for more than three years with five different groups of people, each composed of 500 Cadillac owners, to discuss design ideas.

GM placed these people behind the wheels of several Cadillac prototypes and let them drive the cars and fiddle with door handles, seat belts, and switches, controls, and knobs on the instrument panel while engineers sat back, listened, and took notes.

The result: when GM introduced the new, smaller-designed cars—as much as a foot shorter

and much more compact than the “rolling living rooms” of the 60s and 70s. They sold 36 percent more Cadillacs than they had the previous year, and their overall sales volume began growing for the first time in five years.

It should come as no surprise that some of the leading manufacturers in the janitor industry have also listened to their customers and asked what they like and dislike about current product offerings. A perfect example of this is the relationship formed in 2003 between Marriott International Hotels and two leading vacuum cleaner manufacturers, Tornado Industries in the U.S. and Karcher of Germany, which collaborated to produce the new machine.

The three organizations worked together for more than two years to develop a vacuum cleaner that could best meet the needs of the hotel chain’s thousands of housekeepers worldwide. The process was divided into three major categories: 1) discussing the problems the hotel chain has encountered with vacuum cleaners used in the past, 2) determining what they would like to see developed, and 3) testing a new vacuum cleaner prototype. In the process, the three groups examined every part and feature of a variety of vacuum cleaner models to determine what should be removed, retained, or reengineered in order to develop the perfect vacuum cleaner.

## Phase One: Discussing the Problems

Jenny Botero is the Resident Manager of the Crystal Gateway

Marriott, Arlington, VA. After 26 years with the company, she is in charge of housekeeping operations for the global hotel chain and has written Marriott’s cleaning, maintenance, and housekeeping standards. She is also directly involved with product selection and refers to herself as the company’s “gatekeeper,” because no product for housekeeping is selected without her input or approval.

“A vacuum cleaner is a very significant tool for housekeepers,” says Botero. “It’s like the carpenter’s hammer or the surgeon’s scalpel. We really can’t do our job without it.”

Botero says that when she and her staff first met with the vacuum cleaner manufacturers, they talked about a variety of vacuum cleaner-related issues, starting first with the problems. “There were things we did not like about the filter bags in our present machines, and some of our vacuum cleaners marred walls and furniture much more than others,” she says. “With some vacuum cleaners, the cords become frayed very quickly, and with other machines, our housekeepers complained of fatigue, noise, and even injury.”

She mentioned that some vacuum cleaners the hotel had purchased were hard to service, broke down frequently, or lasted less than two years—the minimum number of years the hotel demands of a vacuum cleaner. “We’ve even had some machines where the top portion of the vacuum cleaner separated from the shoe after just

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a few months," she says. "We just can't have equipment fall apart on us like that."

### Phase Two: Determining What Users Would Like to See

The second stage in the process was defining what Botero and her staff would like to see in the new vacuum cleaner. "She was as specific about what she wants as she was about what she did not like about some older vacuum cleaners," says Martha Ward, Corporate Accounts for Tornado Industries. "For most of us, it was like being in a college classroom. All we did was listen and take notes."

According to Ward, Botero discussed the following features she would like to see incorporated in a new vacuum cleaner:

\* **Filter bags:** Machines should have disposable filter bags rather than cloth bags, which can release impurities into the air and are messy to empty. Filter bags should be easily removed and replaced, for example by having a "lever system" to insert, secure, and remove the bags.

\* **Cords:** Because housekeepers vacuum from the far end of the guest room to the door, a cord system should be conveniently located on the back of the machine to keep excess cord out of the way and prevent fraying.

\* **Casing:** The shell of the machine must be able to withstand the rigors of hotel housekeeping and remain airtight so that contaminants do not escape the machine.

\* **Handle height:** Housekeepers come in all shapes and sizes. The handle should be adjustable to accommodate short and tall users.

\* **Air filtration:** To help improve indoor air quality, the perfect vacuum cleaner should have advanced, multistage vacuum systems, including HEPA filters.

\* **Serviceability:** A machine should be easy to service and require no special tools to remove the plate bottom to remove clogs or foreign objects.

\* **Large wheels:** Because most hotel room entries have a marble or hard-rubber plate separating the hallway and the guest room carpet, wheels should be large and exceedingly tough so as not to crack or leave marks on the plate.

### Phase Three: Testing the Prototype

After several months, Ward delivered five different vacuum cleaner prototypes that the engineers developed based on the two years of meetings with Botero and her staff. The machines were put into use at the Chicago Downtown Marriott, one of the busiest in the chain. "We put them right to work and were impressed from the start," Botero says. "Virtually all the issues we discussed were addressed, plus they incorporated several new features we had not discussed as well."

For instance, the handles on the new vacuum cleaners could fold all the way down so that housekeepers could vacuum under bed frames and some furniture. Also, a "forward thrust" feature helped pull the vacuum cleaner over the carpet, making the machine easier to use.

"They did their homework, and we were very impressed with the vacuum cleaner they developed," said Botero. "From my perspective, it was really forward thinking for these manufacturers to meet with me and my staff and discuss our concerns about vacuum cleaners. This is the way product development should be."

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*Dawn Shoemaker is a researcher and writer for the jansan and buildings industries. She may be reached by calling 773-525-3021.*

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hours.

\* They want the personal interaction they cannot get outside the job.

\* They want company benefits.

It's important to use people who have already proven themselves and know all of the job parameters. Across America in large cities and small towns, our citizens are becoming more and more diverse. According to experts who are paid to follow these types of changes, this is a trend that will continue for both the short and long term. Diversity brings its challenges with language and cultural differences, but it also brings a fresh perspective to the work force, hard work and new ideas. The differences affect the bottom line. You hire employees, retain them and you do not have to keep training new people. Most companies, mine included, have hired diversity managers, whose sole job is to focus on diversity. I was just asked this week to give a 12- to 18-month commitment to serve on a newly established diversity council. This council will have 12 to 15 members from various segments of the healthcare corporation.

We are in the midst of a great change with the way we do business in our industry. Will we fight the change or prepare our company and departments to use the change that is at our doorstep to make improvements in the way we do business? Our Association is ready to assist us through training and partnerships to help us continue to reinvent ourselves to be ready for the changes ahead.

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*Terry Frazier can be reached at Terry.Frazier@piedmont.org.*