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Malcolm Baldrige National Quality Award 1997 Recipient 3M Dental Products Division

A customer satisfaction rating "good" is no longer good enough for 3M Dental Products Division, a Minnesota-based supplier of products used around the world. The 700-employee division of 3M has determined that only by striving to earn grades of "excellent" in all product and service areas can it set clear goals for performance improvement, continue to increase sales, and boost productivity at industry-leading rates.

Pursuit of excellence explains why 3M DPD's customer surveys no longer combine "good" and "excellent" responses in a single category, why it has developed a comprehensive network of customer "listening posts," and why it has built an information system that tracks the purchasing decisions of dentists. It also accounts for how 3M DPD sets its priorities -- by concentrating people and resources on opportunities most likely to improve products and services beyond customer expectations.

The division's careful reading of customer requirements drives a finely tuned innovation process that delivers a steady stream of new or improved products. Products introduced within the last five years now account for 45 percent of total annual sales, up from 12 percent in 1992.

The Business

Established in 1964 and competing in a \$4 billion global market, 3M DPD manufactures and markets more than 1,300 dental products, including restorative materials, crown and bridge materials, dental adhesives, and infection control products. Most of its 700 employees are based at its St. Paul, Minn., headquarters and at its manufacturing and distribution facility in Irvine, Calif. Fred Palensky, division vice president, heads 3M DPD.

In the United States, where it has a leading share of the market, 3M DPD competes with more than 100 manufacturers of dental products. Sales and distribution to U.S. dentists are carried out through a network of independent distributors. In foreign markets, the division uses 3M subsidiaries for sales, marketing, and customer support. Sales of 3M DPD products outside of the United States account for 65 percent of the division's total sales.

Supplier of Choice

3M DPD aims "to become THE supplier of choice" of dental professionals worldwide. Setting a clear course to achieve this aim is the objective of the division's systematic strategic planning process, cited as an industry best practice by Fortune magazine. Led by a steering committee of top executives and senior managers, the process is designed to build consensus on what needs to be improved and on how it will be accomplished. Over 20 percent of employees participate, which results in a 10-year vision, a detailed five-year strategic plan, and a one-year operating plan.

For each priority improvement, the steering committee negotiates with the appropriate department or functional unit to establish the anticipated business impact, determine resource allocations, and set metrics and target values for assessing progress.

Setting individual goals in the areas of business results, team effectiveness, and employee development, the Employee Contribution and Development Plan is the division's chief personnel appraisal tool, used to determine performance ratings and guide promotion decisions.

3M DPD's measurement system -- the Business Performance Management Matrix -- provides an easy-to-grasp framework for aggregating performance measures and for directly linking these measures to key business drivers and goals.

Listening and Learning

Most dentists in the United States and Europe -- the division's largest markets -- already use 3M DPD products. Future growth will depend largely on increasing existing customers' preferences -- and spending -- for 3M dental products. To do that, the division must have a thorough knowledge of customer requirements.

It has graded the dentist market, resulting in five groups, reflecting differences in satisfaction, purchasing behavior, referrals, repurchases, and number of 3M DPD products used. In-house and third-party surveys, focus groups, and hands-on evaluations are among the wide variety of methods that the division uses to listen to and learn from dentists in each segment. In addition, virtually all customer contacts -- from visits by field representatives to calls to the Technical Hotline -- provide additional information that also is entered into the division's Customer Information System. The extensive database provides the information necessary to determine whether specific products and services are meeting key customer satisfaction goals and to spot opportunities for new products.

Innovation-Driven

Insights into changing customer requirements -- combined with knowledge of technological, societal, and environmental trends -- are the starting point for product and process innovations. Dentists, distributors, and major suppliers are involved in the division's systematic approach to translating

key customer requirements into design requirements, prototypes, and, ultimately, reliable, quality products.

Introduced in 1979 and refined 37 times since then, the approach has been standardized into a five-phase process. At the end of each phase, the steering committee conducts a review before authorizing the next set of actions.

Examples of customer involvement include simulated operations on "Fletchers," mannequins with human-like mouth features and conditions. Dentists use these mannequins to evaluate variations of prototype material or hardware products. Through this and other methods, customer feedback is received at least three times during the development cycle.

Employees

Employee satisfaction, development, and productivity also constitute a key business driver. 3M DPD management believes that responsibility for cost, quality, service, and development should be assigned to the employees closest to the job. Training is a major element of each worker's plan, which is reviewed at least twice a year to ensure that the workforce is acquiring skills essential to the division's continuous improvement efforts.

In a division survey, 75 percent of employees said that 3M DPD gives them the opportunity to improve their skills – significantly better than the average of 59 percent for a peer group of companies.

Since the early 1990s, the division has strongly emphasized team-based approaches to problem solving and continuous improvement. Management credits the 3M DPD team approach with enabling the division to double sales over the past seven years without increasing the size of the workforce.

The importance of individual initiative also is recognized. All employees, for example, are encouraged to devote 15 percent of their work time to self-directed research.

Results

Continually raising the bar for performance improvement, 3M DPD is realizing benefits in nearly all facets of its business. Over the last 10 years, the division has doubled global sales and market share, and, from 1991 to 1996, it doubled its rate of profit.

Overall satisfaction of the division's U.S. distributors establishes 3M DPD as the industry leader. Since 1993, 40 percent to 45 percent of the division's distributors give it "excellent" ratings in overall satisfaction, with no other competitor consistently achieving more than 20 percent "excellent" ratings. Surveys of dentists also show 3M DPD to be the industry leader in overall satisfaction with products and services. In the 1995 and 1997 surveys, dentists rated 3M DPD as excellent twice as frequently as an aggregate of competitors. These surveys were in the key customer requirement areas of consistently performing, reliable products and product ease of use.

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