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Malcolm Baldrige National Quality Award 1996 Recipient ADAC Laboratories

ADAC Laboratories, a Silicon Valley-based maker of high-technology healthcare products, initiated a management system based on quality management principles as a way to change the culture of the company after successfully coming out of a turnaround in the mid-1980s.

This customer-focused system, based on the Malcolm Baldrige National Quality Award criteria and ADAC's "four revolutions" model has helped transform the company into a world leader in markets for diagnostic imaging and healthcare information systems.

The company's experience teaches that quality does indeed pay. Between 1990 and 1995, overall efficiency improvements resulted in an increase in revenue per employee from \$200,000 to \$330,000, 65 percent better than its competitors. At the same time, ADAC increased its market share in its core business, nuclear medicine, to over four times that of its nearest competitor in the United States and became the market leader in Europe, Asia, and Latin America.

About ADAC

Founded in 1970, ADAC Laboratories designs, manufactures, markets, and supports products for nuclear-medicine imaging, radiation-therapy planning, and managing health care information. Many of the company's products are regulated by the Food and Drug Administration, requiring adherence to strict safety standards. ADAC has installed about 5,000 systems at more than 2,500 hospitals, clinics, and other sites around the world. These systems are extremely complex, comprising several thousand parts, the vast majority purchased from suppliers. Sales of diagnostic imaging cameras and other nuclear medicine products accounted for 85 percent of 1996 revenues totaling \$240 million. Steadily increasing, exports contributed 27 percent to sales.

Most of ADA's 710 employees are based at its corporate headquarters and production facility in Milpitas, Calif., or at offices in Houston, Texas, headquarters of the company's health care information systems business. About 300 ADAC employees work either out of their homes or in small field offices in North America and Europe.

David L. Lowe is chairman of the board and chief executive officer. From 1990, when Lows began managing the nuclear medicine division, through 1996, the company's share of the domestic nuclear medicine market increased from 6 percent to 50 percent and it became the market leader in Europe. ADAC executives credit the application of quality management principles and practices with significantly improving the company's financial health. Now, ADAC is leveraging its continuous-improvement capabilities to compete in new markets that it has targeted to expand its business.

Customers Come First

ADAC's whole-organization approach to increasing customer satisfaction and improving quality may be illustrated best by the 1993 novel decision to eliminate the Quality Council, a body composed of executives and managers and charged with overseeing the company's quality management process. As a result of bench marking a Baldrige-winning company, ADAC replaced the council with two weekly meetings that are open to all employees as well as customers and suppliers. During these meetings, numerous employees present data on key measures of customer satisfaction,

quality, productivity, and operational and financial performance.

The company's corporate planning process known as DASH yields a strategic plan for the next three to five years and an annual business plan. Consistent with ADA's primary core value, "Customers come first," the DASH process begins with a thorough, fact-based analysis of customer requirements today's and tomorrow's. This analysis mines data gathered from a variety of sources, including surveys, lost-order information, interviews conducted by customer-contact employees, logs of service calls, and focus groups. Results are integrated with those from analyses of competitive forces, risks, company capabilities, and supplier capabilities.

Short- and long-term strategies are then distilled into the "vital few," key business drivers that focus and align plans and continuous improvement efforts over the next year. In turn, each department translates the strategic directions and business drivers into specific requirements and action plans. These are the basis for MISS "most important tasks," or top priority improvements set for functional units and for individual employees. Alignment of plans is ensured by cross-functional work sessions at which MISS are presented.

Staying on Course

ADAC management recognizes that good decisions begin with good information. The company has made significant investments in data collection systems targeted to key needs and activities, such as tracking design defects and customer calls for support.

Most workers participate on highly empowered teams and all manufacturing employees are members of self-directed work teams. All employees

receive training on customer and supplier models, problem solving, and basic statistical analysis. In 1995, each received, on average, more than 60 hours of training, or nearly three times the amount received in 1990.

At quarterly "measurement summits," representatives from all departments review the types of data collected according to the company's three criteria: whether the data support key business drivers; address one of the "five evils" waste, defects, delays, accidents, or mistakes; or support objective analysis for improvement. Participants also examine whether new categories of data are needed to guide continuous-improvement efforts. An integral element of ADA's standardized problem-solving process, bench marking is used regularly by all continuous improvement teams to set performance goals and to gauge the effectiveness of its management processes.

Results

ADAC's quality system has yielded highly leveraged improvements, helping the company to compete and to increase market share. ADAC consistently brings products to market faster than its larger competitors. For three recent product releases in its nuclear medicine business, ADAC was at least eight months and as many as 21 months -ahead of its nearest competitor. From 1990 to 1995, company revenues have nearly tripled, and the portion of the revenues accounted for by operating expenses has decreased to less than 30 percent, from almost 40 percent.

Significant gains in supplier performance also have been achieved. In 1992, ADAC instituted a program to certify its suppliers. The company purchases some 5,000 different types of parts. By the end of 1995, 70 percent of the parts received by ADAC came from certified suppliers. Purchased parts rejected during assembly have decreased from about 18 per camera in 1993 to about four last year.

Efficiency gains have lowered the direct labor costs for producing each of its imaging cameras, from an average of almost \$15,000 at the start of 1994 to less than \$9,000 by the end of 1995. Defect rates, as measured at final inspection, have fallen by about 40 percent.

As a result of performance gains and product improvements, the volume of service calls during the first 30 days after the installation of a new imaging system an especially critical period when customers are forming their perceptions of quality has been cut in half. A 1995 independent survey rated the first-month reliability of ADAC cameras as best in the industry. If customers do encounter serious problems, however, they can expect a quick and effective response. For example, if a system breaks down, ADAC technicians will have it back in operation within an average of 17 hours after receiving a customer's call, or less than a third of the time it took in 1990.

As designed, ADAC's business system is delivering increases in customer satisfaction, as ascertained through surveys. Customer-retention rates have increased from 70 percent in 1990 to 93 percent in 1995, and service-contract renewals have risen to 95 percent, from 85 percent. In independent, annual surveys of nearly 2,000 clinics and hospitals, nuclear medicine customers consistently have rated ADAC best at addressing their needs, and the gap between ADAC and its competitors has been widening. In 1994 and 1995, ADAC was the only company to score above five on this particular indicator of customer satisfaction, which is measured on a scale of one to six. On all eight measures of service satisfaction from speed of phone response to preventive maintenance ADAC was the sole leader in five categories and tied for the top spot in the remaining ones.

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Date created: 08/27/2001

Last updated: 11/29/2011
