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Malcolm Baldridge National Quality Award 1993 Recipient Ames Rubber Corporation

Based in Hamburg, N.J., Ames Rubber Corporation's primary products are rubber rollers used to feed paper, transfer toner, and fuse toner to paper in office machines such as copiers, printers, and typewriters. The company is the largest manufacturer in the world of rollers for mid- to large-sized copiers. The company also produces highly specialized parts to protect the transaxle of front-wheel-drive vehicles. Founded in 1949, Ames Rubber employs 445 "Teammates" at four New Jersey sites, with annual sales of \$45 million to \$50 million.

Customers at the Top



The organization chart at Ames Rubber is the tip-off to this company's view of how to do business: "external customers" are on top, then the firm's unit and other managers, and then President Joel Marvil. In fact, the company's entire business strategy is designed to ensure that the customer drives Ames Rubber's operations and goals. All of the company's products are made to order to customer design and specification. Its warranties are among the best in the industry and include a refund of the customer's portion of development costs for prototype parts if specifications are not achieved.

Its principal customers are U.S. and international office equipment manufacturers, with automotive transaxle manufacturers a much smaller but important part of the customer base.

In the early 1980s, senior management realized that the international marketplace was changing dramatically. Even though the firm had reached benchmark status in the copier market and had achieved significant niche penetration of the European copier and U.S. automotive markets, its customers were demanding products that met more exacting quality requirements at lower prices. Offshore competition was emerging, and it became evident that business as usual would not suffice. A new culture was needed.

Ames Rubber upgraded equipment and utilized innovative designs and more efficient manufacturing techniques. It agreed upon goals with a workforce that was more actively involved through training and a "teamwork" philosophy. The company then began searching for an even better way to survive while striving for growth and prosperity. It was expending considerable effort to meet the quality, cost, and delivery requirements of customers. But Ames Rubber knew that its approach was fragmented and that it lacked a coherent strategy, disciplined methods, adequate systems, a full understanding of customer requirements, and a uniform approach to problem-solving and long-term quality improvement. And managers saw clearly that they needed to unleash the full potential of their Teammates.

Excellence Through Total Quality

Joel Marvil knew that Xerox, its prime customer, had instituted a cultural change process called "Leadership Through Quality," and Ames Rubber decided to undertake a similar effort. Xerox trained the executive committee, and the "Excellence Through Total Quality" new work process was announced in 1987.

The process is designed to involve all Teammates in achieving a common goal - the full satisfaction of internal and external customer needs through total quality in every endeavor. A steering team comprised of the executive committee was formed to develop a strategy to achieve the goal of becoming the "World-Class Supplier" of elastomeric products.

By the time a company-wide orientation and training effort was completed in 1988, more than 17,000 training hours had been provided to ensure that the firm's goals and total quality approach were understood and that Teammates were equipped for the challenge.

The steering committee developed a guiding strategy document that has two key components: a nine-step Quality Improvement Process (QIP) that is a disciplined and systematic approach to identifying and satisfying customer requirements, and a six-step Problem-Solving Process (PSP).

A new system of monthly strategy reviews was established. Involving the executive committee and division general managers, these reviews cover both the short- and long-term progress of the company. The company's quality strategy was made a regular item on the agenda.



Involvement Groups were started in all work units, and they became a primary communications and training vehicle. The groups meet at least once a month, and everyone at Ames Rubber is a member. The Involvement Groups are a main conduit for improvement ideas from the floor. Every teammate receives 24 hours of basic training in quality principles, techniques, and tools, and each is able to contribute to quality and performance improvement by using the nine-step QIP or six-step PSP. Each new Teammate is assigned a coach to ensure that he or she is familiar with their job and total quality procedures.

Systems were established to track rejects and cost of quality. Reject tracking immediately led to "Pareto Thinking" and helped to isolate parts that were causing the firm's greatest problems. Yield Improvement Teams were launched to examine rejects by cause and to eliminate them.

The company also reduced its supplier base by selecting companies that share the firm's quality values and are responsive to its "continuous improvement" goals. Down from 42 suppliers in 1989, Ames Rubber now relies on 19 suppliers whose quality performance is about 99 percent. Ames Rubber enjoys close communications with its customers and suppliers through a system called "CS/CI," for Continuous Supplier/Customer Involvement.

Quality Results: The Payoff

Ames Rubber has undergone its own culture change, and its managers have the data to show that change pays. The percentage of defective parts reaching customers is among the lowest in the industry. For Ames' largest customer, Xerox, the defect rate has been reduced since 1989 from over 30,000 parts per million to just 11. Ames now is the "benchmark" producer of fuser rollers for the very highest speed copiers. Delivery performance for its top customers is well above the industry average, improving dramatically since 1989. Productivity, measured by sales per Teammate, increased by 48 percent from 1989 to 1992. Teammate involvement in suggesting improvements is yielding some hefty returns: over the past five years, Teammate ideas have saved the company and its customers more than \$3 million and will average more than \$2,700 per Teammate in 1993. For Ames Rubber, total quality is not only good, it is profitable. On approximately level sales, every financial and operational metric has shown dramatic improvement, with 1992 being the best financial year the company has ever experienced.

Beyond the Bottom Line

No manufacturing enterprise can avoid having to deal with environmental safety and health issues: they are part of doing business. Over the past few years, Ames Rubber's environmental efforts have evolved from pollution control to pollution prevention—a policy supported by top management and mandated by corporate policy. The company has made substantial progress in reducing or eliminating toxic ingredients, improving the efficiency of production processes to reduce waste, increasing waste recycling, and managing all materials more soundly. Its approach to environmental management is now part and parcel of Ames Rubber's quality management process.

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