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Malcolm Baldrige National Quality Award 1995 Recipient Armstrong World Industries Building Products Operations

At Armstrong World Industries' Building Products Operations, quality is clearly a thing of the past. But even more clearly, it is the thing in BPO's present and future. Upholding a commitment to quality made more than a century ago by its corporate founder, the manufacturer of acoustical ceilings and wall panels is aligning every facet of its business with the exhaustively researched product and service requirements of its customers.

All quality-focused changes initiated by the Pennsylvania-based company—from redesigning jobs and operations at manufacturing plants to reorganizing its sales force—are driven by thoroughly evaluated expectations of increases in customer value. In turn, BPO's Strategic Management Process completes the chain of cause and effect by translating customer-focused goals into anticipated impacts on market and financial performance and shareholder value.

Across eight market categories in 1994, at least 97 percent of customers gave BPO an overall rating of good or better. As it pursues increasingly ambitious levels of customer satisfaction, BPO also is reducing operating costs. Scrap rates, for example, have been cut by 38 percent since 1991. Manufacturing output per employee has jumped 39 percent over the same span, exceeding company goals.

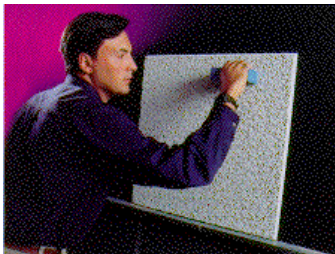
About BPO

Based at Armstrong's corporate headquarters in Lancaster, Pa., BPO employs about 2,400 people, 85 percent of whom work at the operation's seven manufacturing plants in six states.

From the world's largest cork company founded in the late 1800s, Armstrong has evolved into a six-core business, publicly held corporation that makes and markets hundreds of products for both home and commercial interiors and industry. The world's largest manufacturer of acoustical ceilings, BPO accounted for nearly one-fourth of Armstrong's sales in 1994.

Major commercial market customers include wholesale distributors and large subcontractors, as well as architects and others who specify the products to be used in building projects. In the smaller, but rapidly growing residential market, BPO ceilings are marketed through wholesalers, lumberyards, home centers, and corporate retail accounts.

Strategic Management Process



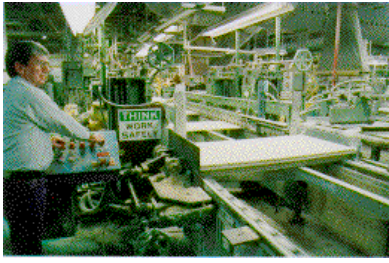
In the early 1980s, with no signs of a business crisis on the horizon, BPO's executives chose not to leave well enough alone. First, they launched plans to increase profitability and market share. Next, they embarked on a quality initiative focused on improving internal processes and operations. But quality plans and business plans did not converge until 1990, when the highest-ranking person at each BPO organization was charged with leading quality improvement efforts. BPO's Strategic Management Process established customer satisfaction and value as both the targets and reference points of all improvement efforts.

Since this crucial integration, organizational change has become a nearly constant feature. The pace of change is quickening as managers and workers become more skilled practitioners of quality methods and set ever more ambitious business improvement goals.

Within BPO, overall responsibility rests with its 10-member Quality Leadership Team, composed of senior executives and headed by BPO President Henry A. Bradshaw, who also serves on Armstrong's Corporate Business Excellence Team. The QLT places its emphasis on leadership and fully shares its responsibility for identifying and realizing improvement opportunities with the entire organization.

In each of the past five years, over half of the BPO workforce has participated on the more than 250 improvement teams operating at any given time. The objectives of teams range from correcting specific operational problems at one plant to improving key business processes that enhance the entire organization. At each plant, the Quality Improvement Team, led by the facility's top manager, monitors the progress of all team efforts and reports on the results to the QLT. All Quality Improvement Teams are required to develop specific action plans and set goals that will have a measurable impact on one or more of BPO's five "key business drivers"—customer satisfaction, sales growth, operating profit, asset management,

and high performance organization (humanresources capabilities).



Change is purposeful, guided by information and evaluations pointing the way to improvements that will make a major difference in customer value, employee value, and shareholder value. Over the past few years, BPO has made substantial investments to optimize its information gathering and analytical capabilities. It also has stepped up its benchmarking studies, conducting 89 in 1994, or more than twice the number performed during the previous year. The principal return on these efforts, according to the company, has been an everimproving understanding of the dynamics of BPO's markets, competitors' performance, and its own business results.

The QLT performs factbased assessments of how well it stacks up against its competitors in each of BPO's eight market segments. Then, the team defines BPO's "full potential" in each segment. Drawing on this and other information, such as the results of customer surveys, the QLT sets goals and devises action plans so that BPO will grow to reach its full potential. Along with organizationwide goals, each of the eight functional units develops and deploys action plans to every BPO employee. Relevant BPO goals and supporting process objectives are incorporated into the various incentive plans that now cover more than 93 percent of hourly and salaried workers.

Committed to promoting a highperformance work environment, BPO is well along in work and job redesign efforts intended to provide workers with the skills, tools, information, flexibility, and authority needed to respond quickly and effectively to customer requirements. For example, pricing of ceiling jobs, once performed by headquarters, now is performed by sales people in the field, eliminating two approval steps and cutting turnaround time in half. The field sales force also can approve claims of up to \$5,000, accounting for about 90 percent of all claims.

At all seven manufacturing plants, employees are organized into natural work teams or business unit teams whose individual members can perform a variety of jobs. As of 1995, six plants pay workers for mastering new skills and knowledge. Six plants also offer gainsharing, which links measures of safety, customer satisfaction, process effectiveness, and other aspects of performance areas to a portion of each employee's compensation.

BPO also has made its suppliers, distributors, and carriers full partners in its quality improvement process. In 1985, the company established a supplier quality management process that has entailed assessing the quality systems of 135 suppliers. Overall, notices of nonconformance sent to suppliers have been declining, falling 32 percent from 1992 to 1994. Over the same span, ontime delivery has improved from 93 percent in 1992, when the arrivaltime window for carriers was four hours, to 97.3 percent in 1994, even though BPO had reduced the window to 30 minutes.

Quality Returns

Twelve years into its Quality Improvement Process, BPO continues to seek, refine, and deploy the best quality strategies and tools that it can identify. Instead of slowing, the pace of improvement efforts appears to be quickening, as the company challenges itself by aiming for ever higher levels of customer value, employee value, and shareholder value.

Since 1991, BPO's "cost of quality"-the company's composite indicator of the price it pays as a result of waste and nonconformance-has dropped by 37 percent, contributing \$16 million in additional operating profit in 1994 alone. In 1994 overall, BPO reduced operating costs by a companyrecord \$40 million, while maintaining or increasing its share in each of its markets. Employees shared in those accomplishments. BPO set industry safety records-employees worked more than 3 million hours without a losttime injury-and the company made its highestever gainsharing and incentive payouts.

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