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Managing Human Resources For Business Success

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Tennessee Eastman Chemical Company was a 1993 winner of the Malcolm Baldrige National Quality Award. The company was founded by George Eastman in 1920 to provide chemicals for film. It is the 10th largest U.S. chemical company, with $4 billion in annual sales. It has nearly 18,000 employees and produces 400 products for 7,000 customers. Its products can be divided into three categories: chemicals (e.g., pharmaceutical coatings), plastics (e.g., PET for bottles, toothbrush handles), and fibers (dyes and yarns). The company became independent of Eastman-Kodak in January 1994.

In the late 1970s, human resource management at Tennessee Eastman meant comparative pay, good benefits and fair treatment. This was replaced in the mid-1980s by a quality-based vision that changed the company culture toward a heavy focus on teamwork. Employee involvement in teams increased dramatically so that 100% of employees were in teams by 1988. Many initiatives were taken to remove barriers to teamwork. For example, status differentials between salaried and non-salaried employees were eliminated, e.g., parking spaces, dress codes, time cards. Differentials in lost time and vacation benefits also were eliminated. The suggestion system was eliminated because it encouraged people to keep good ideas to themselves. The new policy is to recognize the entire team for its contributions and hold celebrations for the entire team.

The company first applied for the Baldrige Award in 1988. Although it did not win that year, it learned that it was important to have its HR strategy and quality policies driven by the company's strategic intent, and to have quality activities held accountable for business results. One prerequisite for HR success is employee well-being and employment stability. One of Tennessee Eastman's HR policies is to retrain employees for jobs elsewhere in the company. A recent example concerned the company's exit from the polyester fiber business in 1993. Although 450 jobs were eliminated, the workers who held these jobs were retrained for new jobs and paid at their old pay levels for up to three years. Employment stability was achieved by reducing the level of contract workers. The Kingsport, Tennessee plant is very large and can absorb swings in employment much better than can many of the company's smaller plants. The intent is to hire the very best people in the first place and then retain them, if at all possible.

The old performance rating system required supervisors to develop a forced distribution whereby one third of employees were assessed at above or below normal levels. This system was eliminated because it damaged self-esteem and encouraged competition and lack of information-sharing among employees. The new rating system was developed by a team of managers and employees and is based on assessment of processes rather than on placement in categories. A supervisor and an employee meet every six months to discuss job expectations and reach consensus on a written performance contract. A link is established between an employee's knowledge, skills, and behaviors and his or her expected performance.

The president initiated a Team Effectiveness Survey in January-February 1994. While substantial progress had been made in moving toward team effectiveness, the survey identified several remaining barriers. One of these barriers was the need to improve coaching between supervisors and employees.

As a result, supervisors took training to develop coaching skills that enhance employee empowerment and to identify employees training and development needs. Most supervisors needed such training because they had been picked for technical rather than people skills. The number of supervisors has shrunk by attrition over the past five years by 38%, resulting in an increase in the span of control for the average supervisor of 50%.

The company has given increased attention to the initial selection of the right people, considering that a hiring decision can be a $1 million investment over an employee's career. The company has worked with four local school districts to teach TQM principles in the classroom, and hopes to attract the middle 50% of the student distribution who often avoid math and science, but might be good candidates for employment at Tennessee Eastman. Some current company employees have filled-in as substitute teachers within these school districts to help students improve their math and science skills.

Steve devoted considerable time to discussing how Tennessee Eastman conceptualizes empowerment and tries to assure that an employee's authority, capability, and desire is balanced and aligned with a business unit's purpose. A number of communication, development and training initiatives are undertaken to assure that each element of this equation is developed and balanced.

The company has a Success Sharing Program in which all employees have 5% of their pay at risk, depending on unit performance. Employees also can gain up to a 15% bonus based on return on assets. Employees also contribute 3% of their pay for annual contributions to an ESOP. This will increase to 4% and 5% in 1995 and 1996, respectively. This contribution will occur until employee stock ownership reaches 20-30%. The top 10-15% of senior managers are expected to own stock that is equivalent to one-half their annual salary. The CEO owns four times his annual salary in stock.

Over the last five years, Tennessee Eastman has dramatically improved performance on several important indicators. Employee turnover is less than 1.5%. The lost workday incidence rate has dropped by a factor of five. Claims and returns have dropped 60%. Productivity has been enhanced and profit margins have remained superior to those of its competitors since 1986.

Has Corporate America Forgotten The "F" Word?

Sam Hedrick
Winshare Coordinator
Ericsson-General Electric Company

Ericsson-GE manufactures land mobile radios and cellular telephone systems in Lynchburg, Virginia. The company had sales of $1.4 billion last year and is 80% owned by Ericsson and 20% owned by GE. Ericsson is number one in sales world-wide, but only 12th in the United States. The sales growth potential in the U.S. is very high because only three of every 100 Americans have cellular phones. Ericsson-GE has 2,400 employees; 15% of them are contract workers. The average age of employees at the Lynchburg plant is 47, with average seniority of 23 years. Eighteen percent of the employees are under 30. Eleven hundred and fifty employees belong to the Company's Winshare Program which began in 1987. Sam is the Winshare coordinator and is responsible for sustaining the motivation of members of 54 Winshare teams.

The company suffered $35 million in losses between 1983-85, resulting in a layoff of 1,350 employees in 1986. Around this time, GE sold most of the company to Ericsson. The CEO of the new partnership believed that customers for the company's products were going to shift dramatically over the next decade, primarily from end-users who bought a single or isolated product off-the-shelf to customers who bought systems and expected service, collaboration, and problem-solving from their product manufacturers. This shift in relationship required the company to change its culture and values. The CEO wanted improvement efforts to focus on customer satisfaction and employee satisfaction. Improvement in cash-flow would be a consequence of these efforts.

The change in the company's culture started with a work ethic that was based on trust and trustworthiness, integrity, and dignity. Trust and trustworthiness implies a two-way street which requires that management and employees want and earn trust from each other. Also, every employee in the plant is responsible for the product and can refuse to build or ship the product if it is not judged to meet quality standards. Company values also include professionalism in work, perseverance at tasks, and respect for each other. Employees are judged on their adherence to these values.

All but five Winshare teams are product-based. The non-product-based teams relate to ISO 9001, customers, suppliers, static problems, and human resources. The teams have bulletin boards, which team members can use to indicate what they have done for their customers. Customers and suppliers meet with teams regularly and prospective customers talk to teams also. All employees are encouraged to suggest improvements in productivity or in working conditions. However, all suggestions must be accompanied by solutions. Each Winshare team has a $6,000 budget for implementing its suggestions without higher level approval. Eighty-seven hundred and twenty-five (8,725) process changes were suggested last year. Ninety-one percent were implemented. Winshare teams meet every third Thursday and issue a report once a month that includes data on number of units shipped, projected versus actual units produced, receivables, inventory turns, etc.

Membership in Winshare teams is voluntary, and about 70% of blue-collar employees belong to such teams. Team membership varies between 5 and 44 members, with 15-20 core team members attending a typical meeting. Meetings occur over the lunch hour or before or after work. Employees were permitted to use regular work time for such meetings, but have chosen not to do so because of the possible adverse impact on a very competitive business. The focus of these meetings is reduced cost and higher productivity. A gain-sharing program exists, but there was no pay-out in 1992 and 1993, due to a plant closing Nevertheless, the number of suggestions doubled in 1993. Of the 8,725 suggestions generated through meetings, approximately three-fourths were related to saving money, and one-fourth was related to improved working conditions. Thirty-four percent of gross savings have been put back in the business, primarily for investment in research and development. There has been a 500% percent reduction in warranty claims.

The company spends 4% of employee time in training. Four million dollars was spent to send 2,400 employees to Philip Crosby's Quality Institute for a total of 96,000 hours of training. Every employee is assessed in January of each year and is expected to improve by year-end. Each writes a personal mission statement concerning what he or she would like to be doing 15 years in the future.

Apprenticeship Payoffs: Skill Development And Productivity

Carole Cowling
Specialist in Employment and Training
and
John Golden
Apprenticeship Trainer
Stihl, Inc.

Stihl, Inc. was founded in 1926. The company has seven facilities in Germany, including research and development and warehouses. It also has facilities in Brazil, Australia, Switzerland and Virginia Beach. The company has pioneered in the development of high RPM motors, centrifugal clutches, anti-vibration engine mounts, auto-ignitions, and chain brake safety. It has state-of-the-art automation, and recently received ISO 9001 certification. The Virginia Beach facility has 612 employees; 149 are salaried and 463 are hourly. The facility is nonunion.

Carole is responsible for recruiting. She found it easy to recruit assembly, machine, and materials handling operators. However, skilled tool and die makers were very difficult to recruit. She traveled to the Mid-west to find workers, but could not convince skilled workers to re-locate. Thus, Stihl decided that they had to train and develop their own skilled workers. The company developed an apprenticeship program that was modeled after that developed by their German parent. In Germany, high school students are tracked by the age of 16 into either technical or academic programs. The U.S. has never developed a technical track for non-college-bound students, yet it is estimated that by the year 2000, 70% of jobs in the United States will not require a bachelor's degree. In fact, experienced tool and die makers at Stihl currently earn more than incoming graduate engineers.

Stihl was transformed in the 1980s from a company that primarily made chain saws into a company that made a wide variety of power tools. Sales have grown by 50% in the last three years, reaching $240 million in 1993. Seventy percent of sales are from products that did not exist four years ago. The plant exports products to seventy countries. One hundred and twenty-seven employees were hired since January 1994. A second assembly shift was recently added. The plant operates two shifts seven days a week from 7 to 7. Employees can work three days, then take two days off. The increased need to use advanced manufacturing technology in the plant is raising required skill levels. The company policy is to promote from within and to rely on internal posting of openings.

Thirty-six employees have gone through the apprenticeship program. The five currently enrolled employees will graduate this June. All 36 employees worked for the company previously. The program takes four years to complete, and includes 8,000 hours of on-the-job training on machine tools and 600 hours of college courses. Tidewater Community College offers courses in math, science, and machine tool design. The employees also are required to take state-mandated courses, e.g., safety. The courses are taken at night on the employees' own time. Stihl pays for books and tuition. It is estimated that the program costs the company $50,000 per employee. No state funding is involved. Applicants for the apprenticeship program must work for the company at least one year, have a high school diploma or equivalent, and pass an aptitude test for drafting and mechanical skills. The average age of an enrollee is late twenties. All 36 enrollees have been men. Two women applied, but did not pass the required tests. No employee has been accepted into the program in the past four years. However, two new ones are expected soon.

Enrollees are called tool and die apprentices. After graduation, they are called general journeyman. Apprentices attend class two or three nights a week. Their wages are raised biannually. They must maintain a B average in their courses, and are allowed to fail a course only once. The courses include manual and CAD drafting, blueprint reading, quality assurance, etc. They are expected to master hand tools first, then move on to machine tools. The final exam is the same as apprentices take in Germany. There is no contract requiring apprentice graduates to stay with Stihl. However, the company pays high wages for the area. The Virginia Beach plant has consistently outperformed Stihl's other plants, including the German plants. The plant has won a company-wide quality award for twelve of the last thirteen years. The plant's engineers, with the help of skilled workers, design and build machines that are customized for the plant's products.

The Role Of Mutual Trust In Effective Downsizing Strategies

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Aneil reported on downsizing research that has been underway since 1987. The initial research involved interviews with 60 senior executives in 100 automotive supplier organizations. Thirty executives who were downsizing their organizations were interviewed at six month intervals for two years. They were asked what changes were undertaken and whether the outcomes were positive or negative. Three downsizing strategies were identified. The first was a work force reduction strategy, e.g., early retirements, lay-offs, transfers. All of the thirty companies implemented this strategy. The second was an organization redesign strategy, e.g., eliminate redundant, non-essential work. Half the companies implemented this strategy. The third was a systemic strategy, which focused on continuous change of the organization's culture and values over an extended period of time, and involved all internal and external stakeholders in the company's value chain. One-third of the companies implemented this strategy. These three strategies were not mutually exclusive. In fact, the four or five companies that implemented all three strategies were the most successful in reducing cost, improving performance and improving quality.

The interviews in organizations that were least successful with downsizing revealed a set of dysfunctional consequences of organizational decline. These included increased centralization of decision-making, shortened planning horizons, reduced innovation, scapegoating, resistance to change, low morale, fights over scarce resources, non-prioritized cuts, etc. Aneil's dissertation research was aimed at understanding the reasons why such negative dynamics develop and become self-reinforcing. In 1990 and 1991, he conducted 35 interviews with executives in automotive supply companies that were faced with downsizing pressure. He asked them what led to failure to respond effectively to downsizing pressure and what was needed for an effective crisis response.

The failures were related primarily to decision-making by a few and not sharing information. The central theme behind success was trust, which effective managers fostered. Trust enhances decentralization of decision-making, greater sharing of information, and collaboration within and across organizational boundaries. Aneil offered four definitions of trust. The first is belief in the responsible manager's competence. The second is openness to sharing information. The third is belief that each party cares about the other. The fourth is reliability, i.e., consistency between words and deeds.

A mail survey was sent to 91 units from 43 firms in the North American automobile industry. These firms represented all major segments of the industry, e.g., glass, steel, engineering services. The business units ranged in sales from $100 million to $1 billion. The survey was completed by the top management team of each business unit. Surveys were completed by 511 respondents, for a response rate of 65%. The results indicated that the work force reduction strategy (#1) was negatively related to improved machine efficiency, and improved labor productivity. This strategy was also negatively related to all six quality improvement measures. The organization redesign strategy (#2) was positively related to reduced material expenses, improved machine efficiency, and improved labor efficiency. This strategy was related positively to five of the six quality improvement measures. Finally, the systemic change strategy (#3) was related to improved machine efficiency and improved labor productivity. This strategy was related positively to three of the six quality improvement measures.

The results further showed that mutual trust within the top management team was negatively related to the work force reduction strategy and positively related to the organization redesign strategy. Mutual trust between the top management team and employees was positively related to the work force reduction strategy. Mutual trust between business units and its customers and suppliers was negatively related to the work force reduction strategy, and positively related to the systemic change strategy.

Aneil's research suggests that an isolated work force reduction strategy is unlikely to be successful. Its likelihood of success increases significantly when used in conjunction with the organization redesign and systemic change strategies. Also, mutual trust is positively related to effective downsizing strategies and negatively related to ineffective strategies. The previously cited relationship of mutual trust between the top management team and employees only holds when the work force reduction strategy involves attrition and transfers, but not when it includes layoffs, early retirements, and buy-outs. Mutual trust is fragile. It can take years to build-up, yet can be undermined very quickly.

Developing A Computerized System For Tracking Job Skills

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AMP, Inc.

AMP was founded in 1941 and initially served the aircraft and marine industry. The company now has 25,000 employees, has plants in 160 countries, and overall sales in 1993 were $3.3 billion. It has spent over $2 billion on research, development and engineering in the last 10 years, and 15-20% of its current sales are derived from new products. AMP's customers have products with very short lives, thus putting pressure on AMP to reduce its product development cycles. The company tracks 50,000 part numbers and produces 300 product families. With so many products being produced in so many countries, it is important that common skill sets exist between plants to maximum inter-plant flexibility.

AMP is a very decentralized company, with many independent businesses with their own profit and loss responsibility. In 1989, senior operations management considered it important to develop a company-wide strategy for developing manufacturing employees, and established the Manufacturing Skills Steering Committee that included key managers. The MSSC issued a report in 1990 that outlined a partnership between management and employees to assure training of AMP manufacturing employees.

The report focused on employee awareness of AMP's culture, values and work environment, identification of job skills, and employee development.

An early initiative on identification of job skills was the Job Skills Matrix, in which the skills required for each job were listed. The total set of skills for 91 job classifications was compiled from this data into a Job Skills Catalog for each plant. An employee and supervisor could use the Job Skills Catalog to determine what skills the employee needed for a current job or a desired future job, and to determine what training was needed to achieve skill proficiency. Compensation is not related to skill proficiency, but to performance on the job, e.g., scrap, cycle time, product returns. Indirectly, enhanced skills lead to promotion and higher pay. The Job Skill Catalogs are updated quarterly by a team of employees and supervisors. Currently, the program only involves manufacturing employees and their supervisors. No data is being complied at present for managerial or professional personnel.

Training is done by any employee who is considered to be an in-plant process expert. On the day shift, these persons often are design, product, or mechanical engineers, but on the second and third shift, the process expert can be any employee who is proficient with a particular skill set, and can assess an employees' skill level. The employee also is requested to self-diagnose existing deficiencies. The process expert develops a training plan to improve skills in conjunction with the employee and his or her supervisor. Employees are encouraged to think in terms of developing their value-added contributions to AMP. Recertification of the same skill set is sometimes necessary for jobs that vary by work area, e.g., assembly versus molding.

The entire skill assessment process started out to be very paper driven, but AMP's information systems people developed a data base and automated it. The company wanted to track human resource data in this manner as part of its Plan for Excellence, which was modeled on Malcolm Baldrige Quality Award criteria. It also has proven useful for ISO 9001 certification. Initially, the data base was accessible only by human resource personnel, but now it is available to first-level supervisors. A supervisor can use the data base for assessment of ISO 9001 and MRPII needs. Data can be organized by individual skills and training needs, by the average time required to train for a skill set, by the number of people who need training for a particular skill set, etc. In the future, the data base will be global, and a plant's skill set profile may influence where a product is produced.