

# THE ROAD TO HIGH PERFORMANCE

ARE YOU CONFUSED ABOUT WHAT MAKES A HIGH-PERFORMANCE WORKPLACE? IF SO, YOU ARE NOT ALONE. RESEARCH HAS NOT VALIDATED ANY SINGLE, CLEAR SET OF HIGH-PERFORMANCE PRACTICES, BUT SOME GUIDING PRINCIPLES CAN HELP SET YOU ON THE RIGHT ROAD.



BY MARTHA A. GEPHART

**N**ORDSTROM'S IS THRIVING at a time when many department stores have closed their doors. Southwest Airlines is operating in the black and winning customer-satisfaction awards, while other major carriers have sustained huge losses and even declared bankruptcy.

Nordstrom's and Southwest have something in common with other successful companies: They have relied for strategic advantage on their ways of organizing work and managing people.

A new vision of what constitutes an effective workplace has emerged from the experiences of best-practice companies and plants, which are often called high-performance workplaces. But for most companies, the goal of high performance—sustained over time—has proved elusive. If you are confused about what a high-performance workplace is, you are not alone. Despite the growing use of the term, a clear set of components or practices has not yet been validated by research.

The driving forces for change are increasing in the 1990s. Managers and training and development practitioners can learn from past successes and failures about the dynamics of workplaces that have achieved high performance, and about the successful roads they took.

Along with the results of recent studies, the experiences of best-practice companies can help point the way to high performance.

Discussions of high-performance workplaces often focus on self-managing teams, quality circles, flatter organizational structures, new flexible technologies, innovative compensation schemes, increased training, and

continuous improvement. A variety of approaches has been used to achieve high performance. Effectively managing people is a key to all of them.

Companies that exhibit high performance use all their resources—human, material, and technological—to achieve and sustain competitive advantage. A systems approach is key. High performance emerges out of the links among how work is organized, how people are managed, how technology is used, and how all of these are linked to an organization's competitive strategy and culture.

### **The context for high-performance work in organizations**

The early 1990s were a period of unprecedented financial and organizational restructuring in companies. Takeovers and buy-outs transformed the control and ownership of many firms. And restructuring transformed the product focus and the way work is organized in many companies.

Surveys conducted by the Wyatt Company of more than 500 large companies indicate that three-fourths of the responding companies downsized in 1992, and nearly as many reorganized. One-fourth divested, merged, or been acquired.

Restructuring in the 1990s has been driven by demands for greater value for shareholders and by increasing competition in the global marketplace.

Because of increased global competition during the 1980s, customers were already demanding high-quality products and services that were customized, convenient, timely, and delivered with speed at the right price. As the number of competitors continued to increase, producers who wanted to remain competitive had to react ever more quickly to changes in demand. By the early 1990s, companies were rethinking virtually every aspect of their ways of doing work, in an effort to achieve the flexibility they needed if they were to remain competitive.

Meanwhile, as Peter Capelli (co-director of the National Center on the Educational Quality of the Workforce) notes, advances in technology and developments within companies were hastening the pace of change. New management-information systems could track performance results and make them available to frontline workers, reducing the need for direct supervision and making it possible to elimi-



Christian Michaels/FPG International

nate layers of middle management.

Some companies have responded to successful experiences with quality-management programs by promoting employee involvement and teamwork as strategies for problem solving. Those strategies, of course, further reduce the need for management. Advances in information systems have increased the speed of customer feedback, creating pressure for companies to innovate in response to changing customer needs.

Fundamental assumptions about organizational performance have also changed. Assumptions that went unchallenged for decades—that bigger is better, and that growth is natural and desirable—have been turned on their heads. In the 1990s, smaller is better. Downsizing is natural and desirable.

The rapid diffusion of the idea that successful firms have core competencies that differentiate them from their competitors and drive their competitiveness has fueled restructuring. Companies are now outsourcing tasks and functions that they don't view as central to their core competencies.

Companies have responded to pressures for change by cutting fixed costs and by introducing new ways of organizing work and managing people.

Some efforts have focused on rethinking the tasks that organizations need to perform in order to produce goods and services. Companies have reengineered their work processes to eliminate steps that do not add value. They have improved value by improving quality, innovating in response to changing customer preferences, and reducing the lag time between identifying customer needs and getting products out the door.

### **Research reports turn up some common themes**

Through their organization of work and their management of people, high-performance companies are achieving results—including flexibility, innovation, quality, productivity, customer satisfaction, increased market share, and higher profits. New research provides systematic evidence that adopting high-performance practices can dramatically improve an organization's performance.

The findings come from cross-industry surveys and from industry-specific studies that include both surveys and detailed case studies.

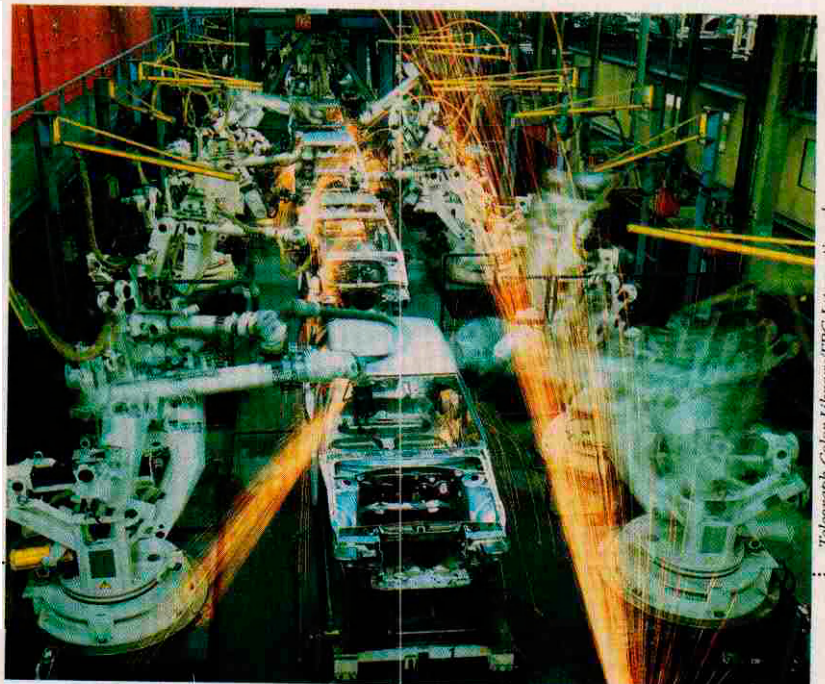
Results from some of these studies were



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presented at a conference on "What Works at Work: Human Resource Policies and Organizational Performance," sponsored early this year by the National Center for the Workplace, the Sloan Human Resources Network, and the Sloan Foundation in Washington, D.C.

Taken together, the findings from the studies suggest the following:

- ▶ New, flexible forms of work organization, combined with HR management systems, can have big effects on productivity and quality.
- ▶ Systems of complementary and reinforcing work practices and human resource practices lead to improved performance.

▶ Marginal changes in individual policies or practices have little or no effect on performance—unless they are accompanied by changes in other practices.

▶ A system of high-performance practices is most effective when it is linked with a competitive strategy and culture.

▶ There is no single set of practices that makes up a high-performance work system.

Let's discuss those findings in more detail.

New, flexible forms of work organization—such as self-managing teams, flexible job design, and job rotation—can have big effects on productivity and quality. That's particularly

## RESEARCH REPORTS: EVIDENCE FROM THE AUTO INDUSTRY

Two business strategies are dominant in the international automobile industry:

- ▶ mass production
- ▶ flexible (or "lean") production.

In *The Machine That Changed the World*, James P. Womack, Daniel T. Jones, and Daniel Roos (New York: Rawson Associates, 1990) concluded that flexible or lean production was the core capability underlying the competitive advantage of Japanese auto companies in the 1970s and 1980s.

Earlier explanations had emphasized factors specific to the Japanese economy and culture. But the high performance achieved by Japanese assembly plants in the United States in the 1980s undermined those assumptions. The "transplant" companies achieved those results with American workers, engineers, and managers; with industry wages and

benefits similar to those in U.S. plants; and with comparable levels of automation.

The International Assembly Plant Study was conducted by the International Motor Vehicle Program at the Massachusetts Institute of Technology, where John Paul MacDuffie was a student. The IMVP research program lasted from 1985 to 1990; virtually every automotive company in the world sponsored it. Today, the IMVP continues as one of the centers for industry studies that is funded by the Sloan Foundation.

**Different approaches to HR management.** MacDuffie—now an assistant professor of management at the Wharton School, University of Pennsylvania—argued that flexible-production systems require a different approach to managing human resources than do mass-production systems.

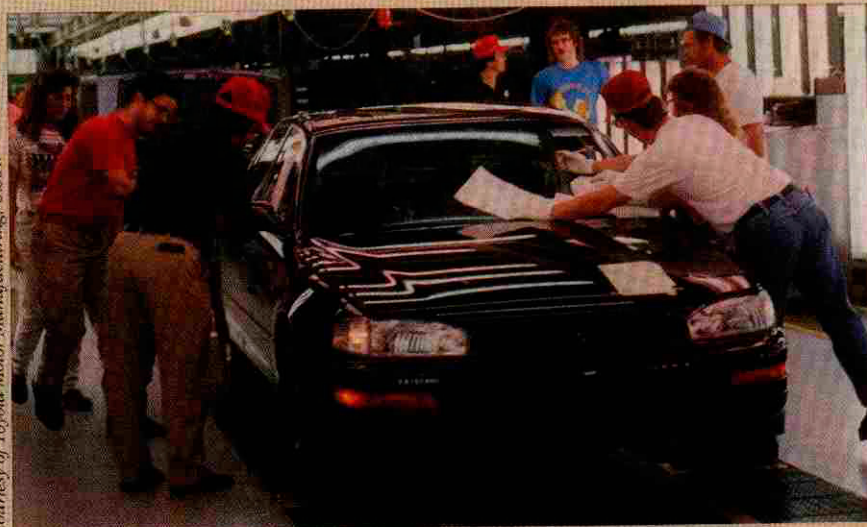
In an article entitled, "Human Resource Bundles and Manufacturing Performance: Flexible Production Systems in the World Auto Industry," to be published in *Industrial and Labor Relations Review*, MacDuffie explains how human resource practices are integrated into the different production systems. He tests the relationship between human resource practices and performance in 62 automotive-assembly plants worldwide.

If human resource practices are to contribute to performance, he argues, companies must motivate skilled and knowledgeable workers—and must integrate their human resource systems with their production strategies. As appropriate units for study, he identifies sets of interrelated and internally consistent human resource practices—not individual practices. Sets of practices create the multiple, mutually reinforcing conditions that support employee motivation and skill acquisition.

**High-performance practices.** In the automobile-assembly study, MacDuffie defines three sets of practices that interact to produce high performance:

- ▶ manufacturing practices
- ▶ work-system practices
- ▶ human resource management practices.

Manufacturing practices relate to the use of "buffers"; in other words, inventories, repair areas, and other kinds of "slack" in the production system. Low use of buffers reflects a lean production philosophy of reducing inventories and other kinds of slack in



courtesy of Toyota Motor Manufacturing, U.S.A.

true when they are combined with innovative systems of human resource management that include extensive recruitment and selection processes, ongoing training in technical and problem-solving skills, cross-training, internal job promotions, and group-based reward structures.

Systems of complementary and reinforcing work practices and human resource practices lead to improved performance in a variety of ways:

- ▶ They integrate human resources more effectively into the production system.
- ▶ They enhance effective teamwork.

the production system. High use of buffers reflects the traditional mass-production system, in which buffers are essential for preventing costly disruptions to the production line.

Work-system practices capture the ways in which work is organized, in terms of formal work structures, the allocation of work responsibilities, and the participation of employees in solving production-related problems. Work-system practices reflect the extent to which jobs are specialized and narrowly defined—or conversely, the extent to which job definition is flexible, with employees frequently participating in teams, rotating jobs, and successfully offering suggestions for improving the production system. Flexible job definitions reflect a “multiskilling” orientation.

Human resource management practices reflect the psychological contract between the employee and the organization; they reflect and influence employee motivation and commitment. In assembly plants with high-commitment policies, hiring criteria emphasize openness to learning and interpersonal skills, compensation is contingent on performance, few status barriers separate managers from workers, and levels of initial and ongoing training are high.

Each plant received scores on the indexes for the three sets of practices. MacDuffie uses those scores to classify the plants as mass production, flexible (lean) production, and transitional. His research results indicate that auto-assembly plants that use flexible (lean) production systems outperform plants that use more traditional mass-production systems—in both productivity and quality.

- ▶ They improve workers' skills.
- ▶ They increase workers' motivation, effort, and effectiveness.

At the same time, marginal changes in individual policies or practices, such as the introduction of work teams or of new compensation systems, have little or no effect on performance—unless they are accompanied by changes in other work and human resource practices.

Similarly, the most effective high-performance systems are those in which an internally congruent system of practices is linked with a competitive strategy and culture.

There is no magic bullet. There is not just one right way. No single set of practices or components makes up a high-performance work system. High-performance work systems include a variety of specific innovations and practices that draw on a common set of principles.

Studies undertaken in automobile-assembly and steel plants have produced the strongest evidence that systems of complementary work and human resource practices can dramatically improve manufacturing performance. (See the boxed research summaries, on pages 32 and 34, for evidence from those industries.)

Several recent cross-industry surveys provide evidence that complements the industry-specific results. Those data show that firms with systems of innovative and interrelated human resource practices in place have higher levels of productivity and better financial performance than those that do not. (See the box, “Research Reports: Evidence from Cross-Industry Studies,” on page 35, for details.)

On balance, the research suggests that interrelated and internally consistent systems of human resource practices pay off—but that modest or partial efforts will not push firms toward high performance. Even more intensive efforts will not result in significant improvements, if they are made up of ineffective practices.

Many questions are still unanswered. More research can help to identify the combinations of practices and policies that are likely to be successful. We also need to know how the sets of practices work—with details about

their implementation in organizations. A checklist approach can be dangerous.

### **Core practices and principles**

What does a high-performance work organization look like? How does it function? For a more textured look at high-performance systems, we can turn to industry examples from the automobile-assembly and apparel industries (pages 36 and 37), and to a case study that shows what high performance means to Southwest Airlines (page 39).

A single set of principles is common to the diverse mixes of practices and strategies in the high-performing systems described in this article. (See the box, "Core Principles of High-Performance Work Systems," on page 38.) These principles help us understand what a high-performance system is and how it functions.

Successful high-performance work systems

must be designed in light of an organization's competitive strategy and business goals. The growing importance of the quick-response system in the apparel industry (page 37) underscores the link to competitive strategy.

Consistent achievement of superior performance requires clear goals and directions that are linked to an organization's mission and strategy. Individual, team, and organizational performance must be aligned. Employees must be committed to the organization's goals. The fragility of the lean-production system and the success of Southwest Airlines both demonstrate the importance of alignment and commitment.

There must be clarity about product requirements, and agreed-upon measures of performance. Often, the clarity is customer driven. High-performance work systems must enable people, working together, to produce and deliver products and services that meet

## **RESEARCH REPORTS: EVIDENCE FROM THE STEEL INDUSTRY**

A study of 30 steel plants found productivity jumps when firms implement systems of complementary and innovative human resource practices. The study, "The Effects of Human Resource Management Practices on Productivity," was by Casey Ichniowski, Columbia University School of Business; Kathryn Shaw, Carnegie Mellon University; and Giovanna Prennushi, Carnegie Mellon University and the World Bank.

The researchers studied a single finishing line in each of 30 steel plants. The sample included major producers and smaller ones, with and without unions, and with a wide range of human resource management environments. The sample included both high-performance and low-performance workplaces.

The study examined the effects of individual human resource practices as well as the effects of systems of practices. Extensive fieldwork allowed the authors to combine the benefits of a case-study approach with the more systematic results of their survey.

Ichniowski, Shaw, and Prennushi examined the effects of human resource practices on productivity and quality. They used delays on the finishing line as their measure of productivity, and prime yield rates as their measure of quality.

When they analyzed the effects of individual human resource practices, they found small, insignificant changes that resulted from incentive pay, work-team arrangements, and positive labor/management communication on performance.

Interviews with workers confirmed their interpretation of the results. When teams were implemented in a human resource environment that was not conducive to teamwork, workers thought problem-solving teams that produced results would eliminate their jobs, and they were not interested in participating. Workers also said they would be willing to sign up for incentive contracts only when trust between workers and managers was high.

To examine the effects of systems of practices, the authors identified four dominant combinations of human resource practices—or "human resource systems"—in the contemporary U.S. steel industry:

- ▶ traditional systems
- ▶ communication systems
- ▶ high-teamwork systems
- ▶ high-performance systems.

They reported that the high-performance system had significantly higher productivity and quality performance than any other system. The high-performance system was

characterized by extensive job-applicant screening, incentive pay, job-assignment flexibility, high worker participation on teams, employee security pledges, regular off-site skills training and information sharing, and regular meetings with workers.

Jeffrey Arthur of Purdue Industry has conducted research on steel "mini-mills" that supports claims about the better performance of high-commitment human resource systems.

His study, "Effects of Human Resource Systems on Manufacturing Performance and Turnover," was reported in a 1994 article in the *Academy of Management Journal* (volume 37, number 3). He defined "commitment" human resource systems as those that emphasize the development of employee commitment to the firm, and "control" systems as those that emphasize efficiency and the reduction of labor costs. He found that firms with commitment systems had lower turnover rates, less scrap, and higher productivity than did firms with "control" systems.

Arthur's research also provides support for links between two business strategies (cost leadership and differentiation) and their corresponding human resource strategies (cost reduction and commitment maximizing) at steel minimills.

customer requirements in the context of environments that change rapidly. The new production systems in the automobile and apparel industries and the success story of Southwest Airlines all exemplify customer-focused measures of performance.

Products and services result from the processes that create them. Process-oriented tracking and management of results is crucial. The emphasis on work processes extends be-

yond the boundaries of the company—to strategic partnerships and networks of linkages between the company, and its customers, suppliers, and shareholders.

In a high-performance system, organizational structures support the management of results. Unlike traditional companies—which tend to be designed around functions—high-performance companies design organizational units around products, services, or processes.

## RESEARCH REPORTS: EVIDENCE FROM CROSS-INDUSTRY STUDIES

Several recent large-sample, cross-industry studies have found that firms that use sets of innovative human resource practices have higher performance than firms that do not use such practices.

Two studies analyzed survey responses that were collected by researchers at Columbia University's graduate business school.

A sample of 495 business-unit executives reported extensive information about their internal human resource policies for the years 1986 and 1987. Analysts matched those responses to financial-performance data from 1983 to 1986.

In "Alternative Pay Systems, Firm Performance, and Productivity," Daniel J.B. Miller, David Lewin, and Edward E. Lawler III describe their analyses of the survey responses. (Their write-up appeared in *Paying for Productivity*, edited by Alan Binder). The analyses indicate that firms with profit-sharing plans and high levels of employee participation had better financial performance and higher productivity levels.

Casey Ichniowski analyzed the same data for a sample of about 200 U.S. manufacturing businesses to investigate the effects of personnel practices on productivity and stock-market measures of business performance. His study is called "Human Resource Management Systems and the Performance of U.S. Manufacturing Businesses" (National Bureau of Economic Research working paper 3449).

Ichniowski classified firms on the basis of combinations of six principal personnel policies:

- ▶ flexible versus narrow job design
- ▶ merit-based promotions versus seniority-based promotions

- ▶ percent of non-entry-level jobs filled from inside
- ▶ the presence of formal employee-training programs
- ▶ the presence of formal grievance procedures
- ▶ other communication and information mechanisms.

The nine HRM systems identified by Ichniowski included prototypical union systems; small-business systems with no formal policies; and high-commitment systems characterized by flexible job design, formal training programs, formal communication systems, and a generally high level of internal promotions.

Ichniowski found that businesses with the highest levels of performance had high-commitment systems.

Systems that had many of the same features but no formal training programs had significantly lower levels of labor productivity and lower stock-market values. That finding suggests that businesses must adopt all of the policies of a high-commitment system, if they are to enjoy its performance advantages—and that training is a critical component.

A 1994 study, "Employee Involvement and Firm Performance," was presented at the January 1995 conference on "What Works at Work." In this study, David I. Levine, Edward Lawler, Susan A. Mohrman, and Gerald E. Ledford, Jr., investigated the effects of employee involvement on measures of

firm productivity and firm financial performance, using data from surveys conducted in 1987 and 1990, of companies that were listed in 1986 in the *Fortune* 1,000.

The study defined employee involvement as a system of management practices that encompasses power-sharing practices (such as self-managed teams and quality circles), rewards for collective performance (such as gain sharing and profit sharing), training in technical and social skills,

and information about performance and the business.

The results of the study were mixed. But overall, they support the conclusion that firms that use employee-involvement practices have higher productivity and financial performance than firms that do not.

In another study,

Mark Huselid of Rutgers University surveyed more than 3,400 firms with more than 100 employees. He identified two sets of human resource practices: one related to employee motivation, and the other related to employee skills and the organizational structures through which employees can use their knowledge and skills to influence performance.

Across a wide range of industries and firm sizes, Huselid found considerable support for his hypothesis: Investments in high-performance work practices are associated with lower employee turnover, greater productivity, and better corporate financial performance.

## FIRMS WITH NO TRAINING PROGRAMS HAD LOWER STOCK-MARKET VALUES

## HIGH PERFORMANCE IN THE AUTO INDUSTRY

In the early 1980s, Japanese companies began to open plants in the United States. Honda opened a plant in Ohio in 1982, and Toyota negotiated a joint venture with GM (called NUMMI) and reopened a GM facility in Fremont, California, that had been closed for more than a year. The superior productivity and quality results of these "transplants" took the auto industry by surprise.

John Krafcik had been an engineer in the NUMMI plant before he became a student at the Massachusetts Institute of Technology. He analyzed the production systems in the transplants and created the label "lean production" to describe their systems of production techniques, human resource policies, and labor-relations policies.

Krafcik worked with John Paul MacDuffie (now of the Wharton School at the University of Pennsylvania) to compare the performance of automobile-assembly plants around the world. The studies provided the evidence for the superior performance of the lean production system. (MacDuffie prefers the term "flexible production," because only the technical part of the production system is lean; the human resources are enriched.)

The key innovations of flexible

production link the use of "buffers"—extra supplies, workers, and space for inventory—with the development and use of human resources.

Traditional, mass-production automobile plants use large buffers to protect the production process from equipment breakdowns, disruptions in supplies, and other potential disasters. Mass-production systems also use standard designs in production whenever they can. For consumers, the result is lower costs but little variety. For workers, the result is tedious, unchallenging work.

In lean production systems, teams of multiskilled workers produce a variety of models of cars—often using flexible, automated machines. Krafcik called the system lean because it uses less of everything than does mass production—fewer engineering hours, less worker time, less inventory space, and fewer supplies—to develop new cars in half the time. Lean production also results in fewer defects.

Lean production systems achieve such breakthroughs by reducing buffers. Such systems see buffers not only as expensive, but also as roadblocks that hide production problems or reduce the pressure to deal with them. As MacDuffie and

reduction of buffers is inextricably linked to work-system and human resource policies.

Lean production environments have few surplus parts and little repair space. So workers must identify and solve problems on the line. To do so, they must have knowledge of the production process, the skills to identify the root causes of problems, and the autonomy to intervene. This requires the decentralization of production responsibilities. It requires the use of work teams, job rotation, and multiskilling. And it requires extensive training.

In a lean production system, workers must be motivated and willing to commit themselves to advancing company goals. But they are likely to do so only if they believe that the company is committed to invest in their future. As a result, these systems are characterized by such "high-commitment" human resource policies as employment security, compensation that is partially contingent on performance, reduced status barriers between managers and workers, and company investment in building workers' skills.

MacDuffie and Krafcik have pointed out that flexible production systems are fragile. When buffers

Krafcik point out, a key innovation of lean production is the view of disruptions to the production process as opportunities for learning.


Lean production is characterized by an incremental problem-solving orientation toward technology. Line workers install and debug

new technology, acquiring important new learning as they do. Later, they can apply that learning when they operate the equipment. In addition, workers continue to modify work procedures and methods in the production system as they do their jobs.

Reducing buffers creates incentives and opportunities for problem solving. But effective problem solving requires the development and use of people. In other words, the

are minimized, a minor disruption can cause an entire plant to shut down. Managers in such systems must keep the skill levels of the workforce high. They must create a culture of reciprocal commitment, in which workers are willing to contribute to process improvement. And they must use technology in a way that complements people's skills. If they neglect those areas, the advantages of flexible production will quickly deteriorate.

Lean production is now widely accepted as the benchmark of best practices in auto-assembly plants around the world. But there are significant differences in how high-performance plants operate. Even among lean production environments, there is no single path to achieving high performance.



**LEAN  
PRODUCTION  
RESULTS IN  
FEWER  
DEFECTS**



Such units tend to be smaller, more autonomous, and more empowered—which can enable a company to achieve greater focus, accountability, speed-to-market, and enhanced customer responsiveness.

“Small” and “decentralized” are not the issues. Focus, accountability, cycle time, and responsiveness are. People and units must have

access to—and must share—information about the environment, the strategic goals, the output, and the work process.

Work units must have the necessary decision-making power, skills, and resources—including time, money, and information. In the most effective units, people are crosstrained in a variety of skills. As individual workers in an

## HIGH PERFORMANCE IN THE APPAREL INDUSTRY

During the past few decades, foreign producers have come to dominate the U.S. apparel market, and many U.S. firms have moved some or all of their production off shore. Some firms that have attempted to maintain domestic production have kept labor costs down by maintaining low wages, simplifying jobs, and increasing automation. Others have pursued a new, quick-response strategy.

Thomas Bailey has described the business strategies and production systems in the apparel industry. (Bailey is director of the Institute on Education and the Economy at Columbia University's Teachers College.)

The classic mass-production approach is called the bundle system. Assembly of each item is broken down into discrete tasks, each performed by a different operator. Material is moved from operator to operator in bundles of pieces. Total labor time is low. Each worker specializes in one or two simple tasks, so wages also remain low.

The bundle system uses large inventories of pieces that are in the process of being assembled, in order to slow the spread of any delay with one operator or machine. But those large “buffers” also complicate quality control and slow production time. Minor changes upset the balance of production lines, making style changes difficult.

The objective of the quick-response or QR strategy is to take advantage of the nearness of U.S. markets by decreasing production time and increasing flexibility—the two areas in which the bundle system is weakest. As U.S. retailers pursue partnerships with apparel manufacturers, the apparel firms that will stay competitive are QR leaders with strong brands



courtesy of Sunbrand

and excellent customer service.

Quick response was conceived as a consulting project for the Crafted With Pride in USA Council. In that project, Kurt Salmon Associates projected that QRs could save the industry more than \$25 billion. In 1985, the council funded four pilot projects to prove QR's viability, and the projected savings were realized.

QR is a simple concept, but it is not simple to implement. It requires changing most activities—from the ordering and receipt of raw materials and other inputs, to the delivery to wholesalers or retailers.

In the mid-1980s, the lack of standards for bar coding and electronic data interchange became the key obstacle to implementing quick response. To reduce the time between ordering and receiving materials, the leading retail, apparel, and textile firms met, developed common terminology, and adopted voluntary standards, which were announced in 1987. The standards will help businesses use electronic data interchange and bar coding to improve inventory control and communications with customers and suppliers.

To decrease the time required to process materials into finished garments, many QR companies adopt a new system called modular produc-

tion. It is the apparel industry's version of the high-performance workplace system.

Modular production employs small teams of operators who work together to assemble a garment. In just a few hours, modules can

produce items of clothing that take several days to assemble by the bundle system. In the modular system, workers are trained to do several tasks; teams take responsibility for improving the quality of the whole product. But if the system is to operate effectively, employers must have skilled, flexible employees who can work in a varied environment and contribute their improvement ideas.

Modular production requires and facilitates the following practices and structural changes:

- ▶ multiskilling of workers
- ▶ job rotation
- ▶ the use of group rather than individual piece-rate incentives and pay based on the acquisition of additional skills
- ▶ much more training than in traditional systems
- ▶ fewer supervisors
- ▶ more worker mobility based on skill acquisition.

Peter Berg and Eileen Appelbaum of the Economic Policy Institute, with Thomas Bailey and Arne Kalleberg of the University of North Carolina, reported on their preliminary research at the January 1995 conference on “What Works at Work.” Their research suggests that modular production results in superior productivity and quality.

organization begin to understand the nature of the work performed by others, they enhance their own ability to participate in the design and management of the entire work process. Learning, as well as performance, becomes an important driver.

Many companies use teams in an effort to enhance problem solving and learning. But effective teams must have clear performance goals, the opportunity to contribute to effective solutions, and the skills and information needed to do so. Moreover, the remaining systems in the organization—including the performance-management and compensation systems—must be aligned with and supportive of a team approach.

Organizational structures in high-performance systems tend to be less hierarchical than in traditional companies. But flatter organizational structures are not an end in themselves. They are better if they improve the flow of information, strengthen accountability, and facilitate the creation and effectiveness of smaller units and teams. Unfortunately, some organizations eliminate layers of management without determining how to achieve those objectives. The result may be an immediate reduction in cost, with no foundation for long-term performance.

Empowerment provides energy and motivation, gives ownership, and fosters responsibility. Workers and managers must collaborate, and trust is critical. Human resource practices need to be consistent and to support trust and empowerment.

An important and frequently overlooked principle of high-performance work systems is strategic change management. As case studies of companies pursuing high performance indicate, the processes of change that create high-performance work systems in an organization may be as important as the practices and innovations themselves.

## The next steps

Research has not yet devised a clear definition of a high-performance workplace system. Researchers vary widely in the practices they have chosen to measure and the measures they have chosen to use, making it difficult to compare findings across studies. Clearer distinctions among different dimensions of performance would make it easier to integrate industry-specific studies by identifying patterns of results in focused, clearly conceptualized categories.

The key to greater clarity about the definition and functioning of a high-performance work system is the development of stronger theories connecting practices with outcomes. It is crucial to identify and measure the intervening processes that may result in higher performance. Those may include skill and knowledge development; employee motivation and commitment; and learning at the individual, team, and organizational levels.

There is very little systematic knowledge about the processes of change through which high-performance workplace systems are created. Case studies of restructuring and transformation show that in some workplaces, the particular practices and innovations that are used are less important than the sequencing and management of the changes.

Most of the existing research on the topic has focused on manufacturing plants. Research is needed that focuses on service-sector establishments and on white-collar and professional workers.

The growing number of companies experimenting with workplace innovations opens up more opportunities for researchers and practitioners to collaborate in exploring the dynamics of high-performance work systems and the processes and management of change that create such systems. ■

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### CORE PRINCIPLES OF HIGH-PERFORMANCE WORK SYSTEMS

- ▶ They are linked to an organization's competitive strategy.
- ▶ Clear goals and outcomes are customer driven; individual, team, and organizational goals and outcomes are aligned.
- ▶ Work is organized around processes that create products and services.
- ▶ They include process-oriented tracking and management of results.
- ▶ Organization is by work units that are linked to processes—which enhances ownership, problem solving, and learning.
- ▶ Workplace structures and systems facilitate focus, accountability, cycle time, and responsiveness.
- ▶ They are characterized by collaboration, trust, and mutual support.
- ▶ Strategic change management is key.

# SOUTHWEST AIRLINES CHARTS A HIGH-PERFORMANCE FLIGHT

**B**Y MOST AIRLINE INDUSTRY standards, Southwest Airlines is a high performer. Figures from the U.S. Department of Labor's Office of the American Workplace make that clear. According to OAW's data base on high-performance companies:

- ▶ In 1991, Southwest flew more passengers per employee (2,318, versus the industry average of 848) than any other airline.
- ▶ In 1991, Southwest had the fewest number of employees per aircraft (79, versus the industry average of 131) in the airline industry.
- ▶ In 1993, Southwest had the second-lowest costs per available seat-mile in the industry.

Southwest was founded in 1971 as a low-cost regional air carrier. From 1972 and 1992, Southwest's stock had the highest percentage return of all stocks (a whopping 21,775 percent). In 1992, Southwest was the only U.S. airline to show an operating profit. For the past three years, it has been the industry leader in net income.

## One of the best

Authors Robert Levering and Milton Moskowitz recognized Southwest Airlines as one of the 10 best companies to work for in America, in their 1993 book, *The 100 Best Companies to Work for in America*.

Southwest employees seem to agree. The airline's annual employee turnover rate is 7 percent, the lowest in the industry.

For the past three years, Southwest Airlines has captured the U.S. Department of Transportation's "triple crown"—as the airline carrier with the most on-time flights, the best baggage handling, and the highest customer-satisfaction ratings.

Southwest is also known for the ability of its six-person ground crews to ready a plane for flight at the gate in just 15 minutes, compared to an average of one hour for other major carriers.

## Culture counts

Unlike models of lean and modular production, Southwest places little emphasis on its formal organizational structure. Employee participation is largely informal. Instead, Southwest is known for its unique culture and its committed workforce. The culture values individual styles, humor, and fun at work.



Marty Katz

Southwest is also known for its cooperative labor/management relations, which have promoted a work environment free of rigid rules.

The high-commitment culture is supported by the fact that Southwest has never had a lay-off. An employee profit-sharing plan, one of the first in the airline industry, provides employees with a stake in Southwest's performance.

## Learning to fly

A key component of Southwest's success is its emphasis on extensive training and continuous learning for its workforce.

Every major work area—mechanics, in-flight activities, customer service, operations, provisioning, and reservations—has its own training department, which provides training in technical skills. Employees also receive specialized courses on customer service, team building, decision making, employee relations, performance appraisal, communications, stress management, safety, and career development.

Through a set of innovative work and human resource practices including training, information sharing, innovative compensation plans and employee involvement, the committed workforce at Southwest has shaped the company around a vision of quality, flexibility, and customer service. As a result, Southwest has achieved the vision of high performance, sustained over time. ■

# TEXAS INSTRUMENTS GETS FROM HERE TO THERE

**B**Y THE END OF THE 1980s, the defense industry's boom years were ending. Firms that had flourished when times were good had to take stock and refit themselves for a tougher competitive environment.

Texas Instruments's Defense Systems and Electronics Groups (DSEG) identified customer focus, employee involvement, and continuous improvement as the cornerstones of its business strategy. Top management championed the use of criteria from the Malcolm Baldrige National Quality Award as self-assessment tools and internal benchmarks.

## The start of the trail

Early successes with self-directed teams at one plant contributed to the decision in 1991 to form a support group called the High-Performing Organizations Development Unit. The unit was championed by the human resource manager and by DSEG's president. Its mandate was to promote the development of empowered teams in other parts of the orga-

at one plant, a design team decided that multifunctional teams could achieve breakthrough performance.

The team was right. Within six months, DSEG realized dramatic results—including a 50 percent reduction in cycle time, a 60 percent reduction in scrap, and a 30 percent improvement in productivity. Success at one plant helped set the stage for similar efforts in other parts of the country.

## How did it work?

The plan included job enrichment and expansion, cross-functional and integrated product-development teams, and extensive crosstraining for employees.

The most important factor influencing the pace of empowered-team development was the level of trust established within business units. Empowerment developed rapidly in units that had open and cooperative relations between managers and employees. Where relations lacked trust, empowerment stalled.

From its earlier failures with teams, DSEG learned that empowered teams require major changes in nearly all the company's systems, policies, and practices. The firm didn't make the same

**WITHIN  
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nization and to create a unified team and empowerment strategy that would guide the company through the 1990s.

Earlier, management had responded to the promises of total-quality management by pushing for the creation of teams. Teams had been created with little understanding of the other changes that would be needed—for example, in job definitions and support systems—before the new teams would have a chance of success. Without supervision, adequate training, clear objectives, or understanding of customer needs, many of the early teams had been ineffectual.

Now, DSEG realized that creating teams was not enough—that the entire organization had to be aligned with the strategy.

After benchmarking similar operations in other companies and analyzing the work flow

mistake twice. It redesigned its performance-appraisal system to reward individual performance in the context of a team environment. Job classifications and functional units nominally remain, but responsibilities are much broader.

In the new, flatter organization, "criteria for success" replace the old career paths.

Total employment is down at Texas Instruments's Defense Systems and Electronics Groups; management layers have shrunk. Managers have new roles as coaches and change agents in the transfer of knowledge and skills to teams. Use of the Baldrige Award criteria has focused management on removing obstacles to team development rather than on tracking day-to-day financial indicators.

## Learning from DSEG's experience

The challenge of implementing high-performance work systems and human resource practices is the challenge of implementing transformational change over a period of years.

The change is dynamic and large scale. But in practice, a firm must implement such change in a series of steps.

There is little systematic knowledge about the processes and sequences of changes needed to move a firm like DSEG down the

road to high performance. Organizations that have experienced successes in their total-quality movements often build on the successful team experiences that they had with TQM. What is clear is that achieving high performance, sustained over time, requires successful change management on a continuing basis. ■

*This case study draws on material reported on by Richard S. Wellins, William C. Byham, and George R. Dixon in Inside Teams (Jossey-Bass, 1994).*

# HIGH-PERFORMANCE QUESTIONS AND ANSWERS

**H**AVE YOU BEEN CHARGED with helping to set your organization on the path to high performance? If so, you'll probably need a lot of information as you chart your firm's way. Here are answers to some of the most common questions.

## **Q** WHAT RESEARCH IS BEING CONDUCTED INTO THE ADOPTION OF HIGH-PERFORMANCE PRACTICES?

Several recent surveys provide evidence concerning the extent and nature of changes in workplace practices. They include the following studies:

- ▶ a U.S. Government Accounting Office survey of 1986 *Fortune* 1,000 companies undertaken by Edward E. Lawler III and his colleagues, which investigated the extent of employee-involvement practices
- ▶ Paul Osterman's 1992 survey of U.S. manufacturing establishments with 50 or more employees, which investigated the extent of workplace transformation
- ▶ a 1991 survey by the American Quality Foundation and Ernst & Young that investigated the adoption of total-quality management practices
- ▶ a 1993 survey by the American Society for Training and Development as part of a project investigating the reorganization of work
- ▶ a survey by Thomas Bailey that investigated the extent to which the apparel industry has adopted innovations related to the quick-response strategy.

## **Q** HOW MANY COMPANIES HAVE ADOPTED HIGH-PERFORMANCE WORK PRACTICES?

The GAO survey of *Fortune* 1,000 companies found that between 20 percent and 30 percent

of the responding firms had a substantial effort in place in 1987. Those efforts used several different employee-involvement practices with a large proportion of the employees. But in 1990, the Commission on the Skills of the American Workforce concluded that those numbers were too high. The commission estimated that only 5 percent of firms were doing anything significant.

In 1992, Osterman, an HRM professor at the Sloan School of Management, conducted a survey of U.S. manufacturing establishments with 50 or more employees, which investigated the extent of workplace transformation that was occurring in those firms.

He asked managers whether they used any of the following flexible work-organization practices with 50 percent or more of their core workers:

- ▶ self-directed work teams
- ▶ job rotation
- ▶ employee problem-solving groups
- ▶ total-quality management, or TQM.

He found that 36 percent of respondents used two or more of those four work practices with 50 percent or more of their core workers. There was neither a dominant cluster of practices nor a single practice that was found most frequently in different establishments.

The view that changes in work organization need to be accompanied by supporting HR practices is widespread. In his survey, Osterman asked managers whether they were using the following human resource practices:

- ▶ innovative compensation systems
- ▶ wage premiums
- ▶ off-the-job training and crosstraining
- ▶ hiring and promoting employees based on seniority

► the use of temporary staff and contingent workers.

He also asked managers about the extent to which they were committed to increasing the skill and commitment of their workers, and the extent to which they were willing to lay off employees.

The results indicated that no single human resource practice was uniformly associated with the presence or absence of flexible work organization. Commitment to improving the skills of employees and to extensive off-the-job and crosstraining were frequently associated with changes in work organization. Innovative pay practices were also common, especially pay for skill.

Moreover, managers in establishments that adopted two or more of the four work practices that Osterman investigated placed a high value on attaining a committed workforce and were less likely to use contingent employees.

Surveys are particularly useful for ascertaining the extent to which certain practices have been adopted. Case studies enable us to spot patterns in the adoption of those practices.

In *The New American Workplace*, their 1994 review of 185 case studies and consultants' reports, Eileen Appelbaum and Rosemary Batt concluded that most often, work-reform efforts are characterized by the piecemeal borrowing of varied practices that are undertaken in an uncoordinated way.

U.S. firms to adopt various innovative work practices.

Firms and establishments that experience international competition—for instance, in the automobile and computer industries—are more likely to adopt innovative practices. In the ASTD survey on the reorganization of work, firms that reported a higher level of international competition also reported a greater use of flexible technologies, collaboration and teamwork, training, and strategic change management.

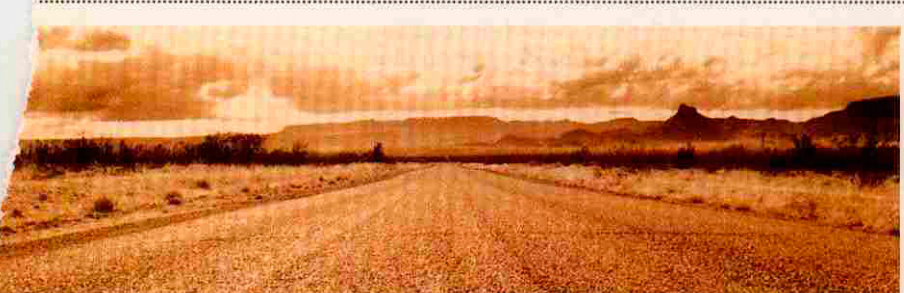
Osterman found that establishments that believe they are responsible for employee welfare are more likely to adopt innovative work practices than those that do not. He also found that, as the skill levels required by an enterprise's technology increase, so does the use of various work organization innovations in the workplace.

Service establishments lag behind manufacturing organizations in their use of innovative practices. Manufacturing establishments are more likely than service-sector firms to adopt TQM practices and changes in work organization. In the ASTD survey, manufacturing companies reported greater use of team-based work structures, multilevel participation, and collaboration with suppliers. The AQF survey revealed low rates in the adoption of quality practices in finance, insurance, and real-estate firms.

TQM concepts are more difficult to apply, and quality is more difficult to control in a service environment. Not surprisingly, high-performance organizations in the service sector—such as American Express, Federal Express, and Shenandoah Life Insurance—tend to be those that have developed exemplary performance-measurement systems.

Apparel-industry press suggests that the adoption of quick-response reforms in that industry has been extensive. But a survey undertaken by Thomas Bailey, of the Institute on Education and the Economy, found that relatively few companies have made major changes. The signs of innovation are growing, and more companies are using production teams (modules). But few organizations have made significant shifts in their human resource policies.

According to Bailey's research results, group incentives in the apparel industry are rare (fewer than 3 percent of firms use them with at least half of their employees). There has not been a significant move within the industry to broader skills and more training. More than half of the enterprises surveyed re-



Changes in human resource practices and policies, in the organization of work, in quality-management practices, and in worker/management relations have typically been undertaken separately and exist side-by-side. In most cases, the extent of change introduced has been modest.

#### **Q WHICH FIRMS AND OTHER ENTERPRISES ARE ADOPTING HIGH-PERFORMANCE PRACTICES?**

The survey by the American Quality Foundation and Ernst & Young found that U.S. firms lag behind Japanese firms in the average use of TQM practices, but that they are ahead of Germany and at about the same level as Canada. Previous studies have found that Japanese and northern Italian firms are more likely than

ported that they provided no training at all to their workers.

### **Q WHY ARE COMPANIES ADOPTING INNOVATIVE PRACTICES?**

ASTD's survey asked managers to indicate the reasons why their organizations restructured. International competition was mentioned most frequently. Also important were poor operational and financial results and the loss of market share.

Indeed, case studies reveal that the impetus for change in many workplaces is a special circumstance—quality problems, dissatisfied customers, the inability to control costs, the loss of market share, or new corporate leadership.

Most often, ASTD's survey revealed, restructuring was undertaken as part of a long-term strategy, with the goals of improving efficiency, quality, and profitability. Improving the skills and empowerment of the workforce was another frequently mentioned goal.

The implementation and diffusion of change in high-performance workplaces is not well understood. Even in best-practice companies, change tends to occur at the level of a single plant or worksite; it is not diffused throughout the organization.

### **Q WHAT BARRIERS PREVENT ORGANIZATIONS FROM ADOPTING INNOVATIVE PRACTICES?**

Barriers that prevent the adoption of innovative practices are considerable. High up-front costs are associated with implementing a set of interrelated work-system and human resource practices.

In their study of the automobile industry, John Paul MacDuffie and John Krafcik note that the switch from mass production to lean production is far from simple. The practices and policies that make up lean production are very closely interrelated, say MacDuffie and Krafcik. So transitional states—those points at which some aspects of both systems are in place—can be treacherous.

Research in the steel industry uncovers considerable skepticism—on the part of managers, production workers, and union representatives—about whether high-performance work practices really work. Implementing such practices requires a great deal of trust and collaboration between management and workers. Often, that level of trust does not exist. Building and maintaining it is time-consuming and difficult.

When piecemeal changes are implemented, their failure discourages more systematic

approaches. Then there's the "program of the month" syndrome. Many workplaces have introduced a string of management fads, creating a great deal of cynicism among their employees—cynicism that can be difficult for change agents to overcome.

### **Q WHAT DO MANAGERS SAY ABOUT HIGH-PERFORMANCE PRACTICES?**

Experts have long wondered whether managers really do "walk the talk." A recent survey from Towers Perrin suggests that they do not.

Nine out of 10 senior executives told the researchers that people are a company's most important resource, and 98 percent said that improved employee performance would enhance the bottom line. But, given the chance to rank the strategies most likely to bring success, they put people issues—performance and investment in the workforce—near the bottom.

Executives ranked customer satisfaction, financial performance, and product and service quality as their top three business priorities. Line managers were the most likely to see the connection between people and profits.

### **Q WHAT DO WORKERS SAY ABOUT HIGH-PERFORMANCE PRACTICES?**

Success in implementing workplace transformation depends on cooperation and trust between workers and managers.

The Worker Representation and Participation Survey was begun in 1994 by Richard Freeman, of the London School of Economics and the National Bureau of Economic Research at Harvard University, and Joel Rogers, of the University of Wisconsin Law School. The purposes of this ongoing project are to investigate the views of American employees about the way employers treat them at their workplaces and to assess employee attitudes toward current work organization and human resource practices and toward different forms of workplace participation and representation.

One part of the study that has been completed was a national telephone survey of nearly 2,500 nonsupervisory employees and low-level and midlevel managers in private-sector establishments with 25 or more employees.

One-third of the respondents rated relations between employees and management at their company as "only fair" or "poor," compared to 18 percent who rated them as "excellent." Most employees reported a lot of loyalty to their companies, but only 35 percent said

that they trust their company to keep its promises to them and other employees.

Fifty-five percent of workers interviewed said it was very important to them to have a lot of influence on decisions about such topics as work organization, scheduling, compensation, training, technology use, safety, and work goals. But only 28 percent report having a lot of direct involvement in those decisions. Workers especially want more influence as a group.

Employees consider management acceptance and cooperation as the key, but they are

not very hopeful about it. Fifty-six percent of the respondents who said they want more say in workplace decisions also said that they would be unlikely to get the influence they want, even if they tried.

**Q WILL WE BE SEEING MORE HIGH-PERFORMANCE WORKPLACES AND PRACTICES IN THE FUTURE?**

Yes, we will see more high-performance workplaces and practices in the future. But the changes will occur slowly.

High start-up costs suggest that the adoption of formal practices will occur mostly among large organizations. New businesses are more likely to use innovative practices than older companies. The continuing failure of piecemeal changes will most likely discourage more systematic changes. And, because implementing work-system and human resource practices requires high levels of trust among workers, managers, and union officials, progress may be slow. ■



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