

# High Performance Work Systems in the Paper Industry

Empowering production workers with substantial decision-making authority is a tricky deal for managers, who, for the most part, don't want to lose their managing clout.

By Chuck Parsons and Raul Necochea

One of the most visible trends in workforce management is the concept of high performance work systems (HPWS). Though there is not a single definition, HPWS can be described as work systems that maximize the fit between the social (employees and structure) and technology systems. Fit or alignment between employees, technologies, and organizational strategy is seen as a key factor in the competitive advantage of an organization.

Although this definition of HPWS includes the abstract notion of alignment or fit, which are strategic management terms, both practicing professionals and researchers tend to focus on job/organizational design and human resource management practices as components of HPWS. The organizational/job design practices often include elements of networking, decentralized decision-making, and teamwork. The human resource practices include employment security policies, hiring selectivity, extensive training, performance-based compensation, and employee involvement.

During the past several decades, organizations in many industries have transformed work processes and the role of the production worker through the introduction of high performance work systems. The HPWS experience in the paper industry has been varied and there are many questions about the appropriate approach to these innovations. As researchers studying organizational behavior and human resource management, we were interested in how extensively the paper industry was using available practices. With funding from the Center for Paper Business and Industry Studies (CPBIS) at Georgia Tech, we conducted two case studies and developed an industry survey to paper machine operating crews to evaluate the prevalence and efficiency of HPWS.

## IMPLEMENTATION

There is a fundamental difference between introducing HPWS in a new facility (Greenfield) and those introduced in existing facilities with an existing workforce (Brownfield). In the Greenfield situation, management is able to better leverage the "front end" of the HPWS, primarily employee selection and training practices, to increase the alignment of the people, the other HR practices, and the job/organizational design.

In Brownfield sites, organizational change management becomes part of the transitioning activity. In addition, the presence of a labor union means that most, if not all, changes will need to be negotiated—at least informally. A common assertion is that it is much harder to implement HPWS in settings where the workforce is unionized. Adversarial union/management relations may confound management's attempts to adopt new methods. Unions may be afraid to yield any authority in the design and administration of pay systems, performance appraisal systems and grievance procedures, especially if this means changing various "earned" worker perquisites through seniority. However, there are examples of companies in different industries that have successfully implemented high performance work systems in unionized settings.

## CHANGING ROLES FOR MANAGERS

A common challenge is how managers "manage" when they are accountable for results, but are supposed to rely less on management authority and more on mutual trust and collaborative relationships with the workforce. Disagreements occur that need to be resolved, but the route to resolution can be more complex than one of direct authority. Our

observations here come from some field work we have done in the paper industry.

### Case 1 - Forums Replace Unilateral Management Decisions

The first case takes place in a recycled containerboard mill in the Midwest United States. Three years after opening, the status of the technicians changed to the salaried nonexempt category, which meant that they could have both the benefits of salaried employees and still earn overtime pay. In the transition to salaried status, the technicians also lost some vacation time, but gained better retirement benefits.

From the start, the technicians have been organized as self-managing work teams, each working 12-hour shifts. One manager acknowledged that this is a highly trained work force that engages in cross-functional problem solving. For example, if there is a problem with a machine, the teams have authority to take it down for repairs. They also have the authority to make a machine run faster, having only a minimum speed limit at which a machine can run for each grade in order to meet the budgetary expectations of managers. Most managers recognized that running a mill with such an empowered workforce generated greater worker expectations for the performance of managers.

With the amount of power concentrated on the teams, especially on the most experienced and skilled workers, management proposed some changes to the team structure that would curb some tendencies managers disapproved of, like shift-swapping between workers of different teams and the scheduling of too much overtime for some workers by the teams themselves. In the view of one manager, some of the more senior technicians had begun to put their personal and team welfare ahead of the mill's welfare. He suggested that the technicians had come to believe they "owned" the mill and that this was counterproductive to

managing the mill appropriately. Workers developing a sense of ownership over their companies, ironically, is a goal of HPWS. But in this case the manager saw that as counterproductive.

When it was suggested that the mill's production was thriving despite his assessment of the workforce, he retorted that the positive results probably had more to do with modern technology and better training, and not the team structure. No doubt the perception that "workers had too much power," as one manager nakedly admitted, also played a role in the subsequent events. A production manager's apparent inflexibility became the lightning rod for worker anger, especially after he pointed out, with some accuracy,

that some "untouchable" cliques had formed around the oldest technicians who had been there from the beginning of the mill's operations.

Management's solution was to shuffle the composition of teams to deal with the untouchables. Workers expressed their strong dislike for the idea and even threatened to call a union representative. As a Human Resources officer at the company said, "We definitely don't want a union here." Ironically, one of the consequences has been the formation of yet another worker/management committee, which attempts to air out sources of conflict between workers and management before they become dramatically divisive

issues. One of the technicians, a member of the committee, sarcastically calls their meetings the UA meetings, or Union Avoidance meetings.

Thus in this mill, conflict occurred between management and workers over an issue that was strictly a management prerogative in a traditional mill. Under HPWS, the resolution could not be a unilateral management decision (as was attempted), but rather the creation of another forum for worker involvement.



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**Case 2 - Programs Limit Management Authority**

The second case takes place in another mill, this time in the southeast U.S. The mill had been sold from one paper company to another. Up to that point the workforce had been unionized. The initial changes were traumatic. Workers lost approximately 30% of their retirement funds in the buyout. Moreover, the new management was committed to a continuous improvement program based on Total Quality Management principles. The firm decided to impose the new program on the old workforce and let all workers go as soon as the acquisition was complete, promising to reinstate them if they agreed to “get with the program.” As one worker sarcastically commented, the acquiring firm was flexible: if a worker found the arrangement unacceptable, he was welcome to leave.

Yet, even this worker, one of the most senior we encountered, admits the firm’s stance softened considerably after a while. For starters, almost all workers got their jobs back—albeit after signing on with the firm’s continuous improvement program. The only ones who did not come back were those who

did not pass a medical exam for drug use. The union was allowed back in, a gain-sharing program was instituted, and a degree of self-directedness was encouraged for workers, all within the limits imposed by the continuous improvement program. In fact, the pendulum has swung back too far for some production managers. One acknowledged he was not as fond of the liberties of the mill workers, saying they made it very hard for supervisors to discipline them, and also that some workers abuse the liberties they had. This manager credited the monetary incentives like gain-sharing with the successful cooperative culture found within the mill, “everybody stands to gain by acting that way [cooperatively].”

In this case, as in the first one, some managers continue to struggle with their lack of authority. The limited level of employee self-direction here might be part of the problem in that the employees are not managing each other. Ultimately, as in the first case, the problems may need to be resolved through joint consultation.

Both cases point out the different role and expectations of managers in a HPWS setting. It is often stated that the

**Table 1. Human Resources Practices**

PRACTICE	DEFINITION
Self-directed Work Team	Also termed autonomous work groups, semi-autonomous work groups, self-regulating work teams or simply teams. The work group (in some cases operating without a supervisor) is responsible for a whole product or service and makes decisions about task assignments and work methods. The team may be responsible for services such as maintenance, purchasing, quality control, and hiring.
Employee Problem-Solving Groups (Including Quality Circles)	Structured employee participation groups in which individuals from a particular work area meet regularly to identify and suggest improvements to work-related problems. The goals of these groups are improved quality and productivity; there are no direct rewards for group activity; group problem solving training is provided; and the group’s only power is to suggest changes to management.
Job Rotation	A planned rotation of workers among different jobs.
Total Quality Management Programs	Programs that focus on providing customers with error-free products or services through a process of continuous improvement.
Gain Sharing	Gain sharing plans are based on a formula that shares some portion of gains in productivity, quality, cost-effectiveness, or other performance indicators. The gains are shared in the form of bonuses with all employees in an organization (such as a mill). They typically use employee suggestion committees and they differ from profit-sharing and ESOPs in the basis of the formula is some set of local performance measures, not company profits. Examples include Scanlon plan, the Improshare Plan, the Rucker Plan, and various custom-designed plans.
Employment Security Policy	Corporate or Mill Policy designed to prevent layoffs of permanent employees.
Pay for Skill Program	An alternative to traditional job-based pay that sets pay levels based on how many skills employees have or how many jobs they potentially can do, not on the job they are currently holding. Also called pay for skills, pay for knowledge, and competency-based pay.
Profit-Sharing/Bonus Program	A bonus plan that shares some portion of mill or corporation profits with employees. It does not include dividend sharing.
Removal of Shift Supervisors/Delaying	Elimination of a level of management (including shift supervisor)

**Table 2. Prevalence of Practices in Industry**

Practice	Percent Used	Year Began (% before 1996)	Percent Still Used	Effectiveness (1 - Not at all, 5 - A great deal)
Self Directed Work Teams	33%	45%	75%	3.9
Employee Problem-Solving Groups	46%	67%	61%	4.0
Job Rotation	39%	67%	100%	4.0
TQM/CQI	54%	89%	77%	3.7
Gain Sharing	37%	44%	77%	3.1
Employment Security Policy	11%	0%	100%	3.0
Pay for Skills Program	23%	67%	78%	2.3
Profit-Sharing/Bonus Program	40%	27%	92%	3.1
Removal of Shift Supervisors/Delaying	29%	36%	91%	3.6

training needs are high for workers in such settings, but the same would appear to hold true for managers; especially those who have worked in a more traditional setting.

### INDUSTRY SURVEY

To investigate how widespread and effective various human resource practices are in the paper industry, we developed a survey to measure the adoption and use of nine human resource practices (see Table 1). For each of these practices, survey recipients were asked if the practice was ever used, in what year adopted, was the practice still in effect, when was it discontinued (if not in use), what percentage of the workforce was involved, and the overall effectiveness of the practice. We used a random approach to represent different mills types of varying product lines and union presence. Surveys were sent to paper machine operating crews representing 107 mills. We received completed surveys from crews representing a total of 31 mills.

Table 2 lists the results from this survey. The most widely used practices as indicated from survey responses were TQM/CQI (54%) and Employee Problem-Solving Groups (46%). In analyzing the survey results on adoption of these nine practices and their effectiveness, the year 1996 was chosen as a reference year. At the time of data collection (2004), this provided sufficient time for the effectiveness of these practices to be evaluated.

The two most effective processes were Employee Problem-Solving Groups and Job Rotation. It is interesting to note that while Employee Problem-Solving Groups are noted to be quite effective, they are not practiced very often (only 61% still have them in effect—the lowest of all

practices). This may be due to the nature of the specific goals of these teams, but there are undoubtedly problems encountered daily that could be tackled using this practice.

One final result from this survey is to note the number of adoptions prior to 1996 as opposed to 1996 and beyond. From this survey, there are 99 incidents of practice adoption and 60 of these occurred prior to 1996. At the time of this data collection (2004), this indicates that the majority of practices were adopted prior to 1996. This rate of practice adoption is about in line with other industries.

### CONCLUSION

As we have suggested, the practice of HPWS is not as widespread as the evidence on its effectiveness might dictate. There are significant management challenges both within and between companies in the same industry. However, this situation also provides opportunity to those companies who can become better than the competition at the adoption, implementation, and management of these systems. Numerous examples abound of companies that have prospered for years in very competitive industries, in part because of their successful embrace of high performance work systems. ■

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