Workplace Transformation: Lessons for the Paper Industry

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Abstract

During the past several decades, we have seen organizations in many industries transform work processes and the role of the production worker through the introduction of high performance work systems (HPWS). The HPWS experience in the paper industry has been varied and there are many questions about the appropriate approach to these innovations. In this paper, we will describe a framework for understanding the adoption, implementation, and management of these innovations. We will discuss various organizational, managerial, and workforce issues that are relevant to the decisions to implement workplace innovations. Finally, we will review the research literature on the effectiveness of HPWS practices and explore various contingency factors that may influence their impact.

Introduction

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 of HPWS, Nadler (1989) describes them as work systems that maximize the fit between the social (employees and structure) and technology systems. Fit or alignment between employees and technologies is seen as a key factor in the competitive advantage of an organization. This paper will review the extant and emerging research literature on high performance work systems and their adoption, implementation, and management. We will cite relevant case studies and other field work, and end with some general conclusions concerning these systems.

What Are HPWS?

Although the definition of HPWS given above 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 (Whitefield and Poole, 1997).

The historical roots of the HPWS movement in U.S. industry are described by Cappelli and Neumark (2001). They trace the history of the high performance work practices concept and employer use in the U.S. and identify the success of Japanese imports during the 1970's and 1980's as an important factor. Though academic authors had alluded to various progressive management practices under the guise of Human Relations of the 1930's-1950's and the Job Enrichment and Redesign research of the 1960's and 1970's, there were few employers who were adopting such practices. Through the success of Japanese manufacturers in consumer electronics and automobiles, U.S. employers were forced to examine the sources of such competitive advantage.

Early claims of superior Japanese work practices which included Quality Circles and Total Quality Management were often times dismissed as being not relevant for U.S. based manufacturers because of the belief that the success of such practices were dependent on cultural factors present in Japan, but not the U.S. This belief was shattered by the success of the joint venture between Toyota and General Motors in establishing the New United Motor Manufacturing, Inc. (NUMMI). This new company took over the operation of the Fremont, California automobile manufacturing plant of G.M. This plant had had a poor record of productivity, quality, and industrial relations between G.M. management and the local United Autoworkers Union. However, under the NUMMI agreement, Japanese managers would manage the plant and use UAW members as employees once a new, more flexible, collective bargaining agreement was reached. The success of NUMMI has been well documented and appears as a case in the research by Womack, Jones, and Roos (1990) which was published in a book titled, "The Machine that Changed the World".

The 1990's saw a rapid increase in the adoption of higher performance work practices as well as research on their effectiveness. In looking at enterprise level data on large for-profit organizations, Lawler, Mohrman, and Benson (2001) found that in 1987, only 28% of firms reported having *any* employees covered by self-managing work teams, while in 1999, 72% of firms reported having at least some employees covered by such teams. However, the trends on increasing presence of such practices is a bit more complex in that some practices, such as quality circles, showed increasing rates through the middle part of the 1990's but then had decreased by 1999.

What Is The Evidence On The Impact Of HPWS On Organizational Performance?

Research on high performance work systems has progressed under a variety of banners including workplace innovation, transformation, high commitment, high involvement, and so on. Between 1985 and 2004 there have been at least 18 scholarly articles in the HPWS literature that deal with organizational effectiveness. The common theme throughout the studies is that there is a focus on management practices related to an organization's human resources. The research has proceeded using a variety of methods (e.g. single organization case study, comparative case study, cross-sectional survey, longitudinal survey)

The greatest strength of this group of works consists in the variety of industrial and service settings where the research has been performed, ranging from credit unions, bank and insurance companies, to aircraft, automobile supply and steel manufacturing. The general concern of this group of works has been to explicitly link human resources practices to organizational effectiveness, expressed as greater profits, more innovation, labor efficiency, better product quality and better customer service.

Two major reviews were published in 1996. First, in Ichniowski, Kochan, Levine, Olson, and Strauss's (1996) paper, the authors reached three major conclusions. First, they concluded that HR practices can improve productivity by the use of related practices that enhance worker participation, create more flexible job designs, and decentralize decision-making. Second, when implemented as systems of related practices, these innovations have large, economically important effects. Finally, a majority of U.S. businesses had adopted some form of innovative work practice, but only a small percentage had adopted a full system. Also in 1996, a special issue of the *Academy of Management Journal* was published which, in total, also documented the relationship between HR practices and organizational performance, but had a greater emphasis on how different organizational strategies might be better suited by different HR practices.

While many managers and scholars alike now believe that high performance work practices raise productivity and profits, some critics question this belief. This is precisely what Freeman and Kleiner (2000) argue after performing a multi-plant survey. What they found instead was that programs such as self-managed work teams, TQM, worker-management productivity committees, and employee opinion surveys were only positively related to the higher morale of workers and managers, which the authors were unable to translate into dollar figures. Further: when measuring labor efficiency as the output per dollar spent on labor, Cappelli and Neumark (2001) found that high performance work systems had little effect on such efficiency. Instead, work practices that transferred power to employees raised labor costs per employee, suggesting that they can increase employee compensation. Helper, Levine and Bendoly's (2001) work points in the same direction. Their survey and field research data suggested that employee involvement practices among blue-collar workers in the auto supply industry tended to raise wages by 3-5%, but not to affect plant survival or employment growth.

Proponents of the positive link between HPWS and organizational effectiveness have not given up on their claim. Instead, they have attempted to make sense of critics' results. Among the counterclaims are the assertions that managerial support for employee involvement practices has not been strong enough, or that the implementation of employee involvement practices has been carried out without attention to the contextual characteristics of firms that use them (Kalleberg and Moody 1994, Vandenberg, Richardson and Eastman 1999, Perry-Smith and Blum 2000). Similarly, Kling (1995) has argued that benefits of employee involvement, skill training, and other methods are greater when adopted as part of a consistent whole, rather than in isolation. Macduffie (1995) performed an important empirical test of this hypothesis in a survey of 62 auto assembly plants. The author found that flexible production plants with team-based work systems, contingent compensation, extensive training, low inventory and repair buffers consistently outperformed mass production plants. Perhaps the most extensive program along these lines is that of Ichniowski, Shaw, and Prennushi (1997) at the National Bureau of Economic Research. A study of 26 steel mini mills, based on surveys as well as longitudinal data on productivity and production technology found

that the adoption of a coherent system of new work practices including work teams, flexible job assignments, employment security, training in multiple jobs, and extensive reliance on incentive pay, produced substantially higher levels of productivity than did more traditional approaches involving narrow job definitions, strict work rules and hourly pay with close supervision. In contrast, adopting individual work practice innovations had no effect on productivity.

This latter line of argument suggests the importance of complementarities among a firm's work practices. But at the same time it begs the question, what makes work practices complementary? To use some of Macduffie's (1995) own language, what makes a "coherent bundle" of human resource practices? Presumably only those implementing the practices themselves, at a local level, could determine that. Naturally, in the process of determining the coherence of a human resource bundle of practices it would seem misguided to ignore the historical experience of the workers who will be affected by the new initiatives. Scholars in this category of research as much as managers have not been too diligent in tapping these experiences.

How Do HPWS Affect Organizational Performance?

There has continued to be an interest in explaining the mechanisms through which HPWS could influence financial success of an enterprise. The adoption of concepts from competitive strategy suggested that perhaps human resource management and the resulting workforce was an organizational characteristic that was difficult to copy (*inimitable resources*), thus competitors cannot quickly catch-up as they might if they were simply buying a new machine. This resource-based view (Barney, 1991) led some authors to propose that the strategic importance of HPWS might be limited to a core set of employees as opposed to all employees in an organization (Lepak and Snell, 2002).

Bowen and Ostroff (2004) suggest that HR practices influence organizational outcomes through *organizational climate*. The *climate* concept focuses on the shared perception and interpretation of organizational practices, policies, etc. Climate reflects perceptions of situations and the appropriate and valued behaviors. When employees interpret a situation similarly, we can speak of a strong climate. Systems of HRM practices that send consistent signals about organizational goals and valued employee behaviors increase the likelihood that goals and behaviors are realized.

Gant, Ichniowski, and Shaw (2002) studied communication networks in steel finishing mills. It is suspected that both coordination of work and spontaneous problem-solving are more likely to occur if most individuals have extensive communication networks, both lateral and vertical. Four of the mills in their study operated under a "control-oriented" (CO) human resource system that was run with little employee involvement and more managerial control. Three of the mills had an "involvement-oriented" (IO) human resource system that had greater employee involvement. They found that the communication networks in the IO mills are much more extensive with more workers communicating vertically and laterally. This communication is a natural outcome of job changes and assumed problem-solving responsibilities. In the CO mills, the communication networks were not as dense for all workers. Rather, there seemed to be a few workers in each crew that acted as a central node for communication. Some of the CO mills were attempting to adopt more worker involvement, yet the rank and file saw little reason to participate in off-line problem solving teams because they don't get paid for it, can't find back-ups, feel the teams are not run well, and feel their opinions don't matter to management.

Thus, the linkage between the strategic resource suggested by Barney (1991) and competitive advantage may run through the value of the established communication networks that workers in HPWS had created. These *are* probably much more difficult to imitate than simply designing a new pay-for-performance plan or worker-management committees.

What Affects The Decision To Adopt HPWS?

Past research suggests a strong link between HWPS and associated HR practice and organizational performance. This fact is widely known and well publicized. Based on this fact alone, it would suggest that there would be quick move to adopt such practices both within and across firms. However, there is significant variation

both within and between organizations in HPWS adoption, suggesting that there are other, organization-specific factors that affect the adoption choice as well as how extensive HR innovation becomes. One commonly used explanation is that HPWS are more effective for executing certain organizational strategies. A second explanation comes from Institutional Theory of organizations and suggests that this variation is the degree to which an organization is imbedded in a network of organizations that provide both new ideas and advice on implementation.

In examining the *strategic* explanation, Arthur (1992) looked at data from a sample of steel mini-mills in order to understand the relationship between business strategy and industrial relations systems. The business strategy variables were a combination of low-cost producer, differentiating features, market focus, production variability, and customer type (either market or contract customers). Industrial relations variables included decentralized decision-making, employee participation in problem-solving groups, training, skill level, wage, bonus, and benefit level, due process, and supervision. Using a combination of cluster analysis and inductive reasoning the mills were identified as either high commitment or cost reducing (later labeled "control" in Arthur, 1994) and either low cost producer or differentiation strategy. There was a significant association between industrial relations system and business strategy. The main interpretation is that business strategy has influence over industrial relations system. However, Arthur (1992) also points out that a union may be able to block a cost-minimizing labor relations move and force management to consider a different business strategy.

In examining the *Institutional* perspective, Erickson and Jacoby (2003) use the concepts of social networks and organizational learning to explain the adoption of HR innovation. They argue that there is a distinction between knowledge that something exists (e.g. an HR practice that shows promise in other organizations) and the tacit knowledge about how to implement, troubleshoot, and customize an HR practice to a specific organization. This implicit knowledge can be gained through both formal and informal contacts with others. External networks are built around industry trade associations, other employer associations, and professional associations. Internal networks can exist within a single, multi-site organization. In one sense, consultants also provide a link to a network although the information is filtered through the consultant. Participation in multiple networks provides opportunities to gain new information, potentially not available to competitors. In a study of diverse establishments in California (stratified on size), Erickson and Jacoby gathered information on network affiliations and HR practice adoption and intensity (percent of workers covered). They found that having multiple network affiliations was positively associated with the number of HR practice innovations as well as the number of employees who were in teams, covered by TQM, and involved in group meetings, and provided with job-skills training.

In addition to the effects of the network affiliations, Erickson and Jacoby also found that firms that had career employment practices (such as pension plans and internal promotion plans) and employee support policies (such as family leave and employee assistance programs) were also likely to have more high performance work practices. Because these programs are intended to help retention, it is seen as an important part of the HPWS bundle because they help the organization recoup their investment in employee skill development. Finally, there was no effect for union representation of employees on the adoption or extensiveness of the HR practices. We will further discuss the role of unions on adoption and implementation below.

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. We will next present relevant research on these various implementation categories.

Greenfield Site. A case study by Manz and Newstrom (1990) is illustrative of coordinating self-managing work teams with the opening of a new paper mill (1987) which made groundwood products. The planning for the development of self-managing teams in the technical context of a new mill was sensitive to the needs of the technical system and may have contributed to the early success.

The managers of the new start-up wanted to avoid a productivity decline when the teams were introduced. Therefore, they hired many technically trained workers from other mills. This influx of experienced talent allowed the mill to avoid early operational problems and reach satisfactory performance levels early, but the mixing of the highly experienced with the neophytes caused later conflict which had to be addressed. In this mill, there was extensive team training on communication, conflict management, and giving feedback. In addition, there was a planned evolution of the teams from having a "strong" supervisor role early transitioning to a weak role and finally, a disappearing role. This meant that the individuals who were in this job had to be prepared to "wean" the teams off the authority and problem-solving responsibilities of traditional supervisors.

In addition, the supporting Human Resource systems also needed to be flexible. For example, in the original structure of the pay for skill schedule, the highest levels of the pay scale were reserved for those mastering the most complex skills, but added relatively little increase for achievement of the final two steps in the pay schedule. On the other hand, the lower steps were associated with greater rates of increase which provide more incentive for lower skilled workers to achieve multiple skills. However, the experienced technicians hired to proved faster 'ramp-up' of operations were already at the higher levels of the pay scale and protested the meager rate of pay increase they could achieve by obtaining the highest level of skills. This eventually led to a revision of the higher pay grades (by more than tripling the rate of increase).

Another HR policy that was tested by the new work system was the tight restriction on hiring more workers. The workforce felt stretched because of all the operational demands, training demands, and meetings, meetings, meetings. However, the mill management didn't add workers because that would eventually mean laying them off when the initial workforce reached higher levels of efficiency through having multiple skills.

Finally, the implementation appears to have been successful (as reported to the researchers) because in spite of lots of complaints about time requirements, etc. management and workers were both constantly positive about the opportunities in this "new" type of mill than in other, more traditional work settings.

Unionized Brownfield Site. One of the most common assertions about HPWS is that it is more common in Greenfield sites where new operating technology can be implemented along with a new workforce while adopting HPWS. Workers can then be trained in new work methods. Managers can be selected for their experience and skill in working in less hierarchical systems. Human resource management practices can be designed from the ground up with little concern for helping individuals transition from old practices.

A second 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.

Thus, it is interesting to consider case studies where an organization attempts such change. Ichniowski (1992) studied a paper mill that had begun operating in the late 1960's. By the late 1970's the mill had unacceptable rates of return on capital due to falling productivity. Over the years, the mill had increased the size of it production workforce even though it output had not increased markedly. Underlying the inefficient staffing levels was a history of bad management-union relations. The union (UPIU) had called strikes in the early 1970's. The evolution of the labor contract over the decade also took place in a setting where there was high management turnover. Because of the lack of top management continuity, supervisors took on a larger role in making agreements with employees and the union to get the work done. This resulted in a complex history of complicated, inconsistent agreements that the union knew very well, but upper management didn't. This allowed the union to have the upper hand in grievances which became substantial in number (about 80 per month).

In 1983, after careful planning, management proposed sweeping changes to the HR system in place at the mill. This was followed by a 2 ½ month strike in opposition by the union. Finally, the union agreed and the team concept was adopted which included flexible job design, higher pay rates associated with the smaller number of job classifications, training and development, new dispute resolution, and employment security.

As a result of these changes, the mill experienced a $600,000 increase in average monthly labor costs. However, this was more than offset by the increase in monthly revenue by the 2nd year after the change was introduced. Along with increased profitability, the mill experience far fewer grievances (to 1.6 grievances per month by the second year). The number of recordable accidents dropped from 4 per month before the change to 1.4 after the change. By 1990 this mill was the most productive in North America with the highest paid paperworkers (Ichniowski,1992).

Experience in the Automobile Industry (UAW and Chrysler)

Another perplexing problem for larger firms is how to introduce and propagate workplace innovations across multiple worksites. Hunter, Macduffie, and Douget (2002) reported a longitudinal field study of the implementation of work teams, reduced job classifications, and skill-based pay in six manufacturing plants of Chrysler Corporation during the years 1987-1993. Chrysler was the last of the Big 3 auto manufacturers to attempt work reform by the early 1980's. At the national level, Chrysler and the UAW adopted general language, the Modern Operating Agreement (MOA) in early 1986. The local union and plant management agreements containing specific MOA language had to be accepted by majority vote by the members of the local unions in each of the plants. Although this approach would, on the surface, appear to increase worker buy-in to the change, there were differences in the degree to which the plants were at risk for closure due to product changes in the upcoming years. For example, in two of the plants that eventually adopted the MOA, there was an initial rejection by the local workers. It was only after Chrysler management strongly suggested that future corporate investment in modern technology for these plants depended on adopting the MOA did the workers narrowly approve the plan. At the other extreme, managers and union officials at a plant in New Castle, Indiana agreed to proactively pursue the adoption of the MOA and were the first plant to establish its work teams. Thus, at some locations there seemed to be a more forcing approach taken whereas in another there was a fostering approach. Logic would suggest that fostering would create a more receptive workforce than forcing when it comes to employee's discretionary contributions in support of the change.

Another important difference between plants lies in the concurrent level of risk associated with closure. That is, at the same time workplace innovations were being introduced to the plants, the corporation was continuing to streamline operations through plant closures. Several of the plants under study were more likely candidates for closure than others though none were closed during the study period. The authors believed that workers in such mills would work harder, but show poorer attitudes than workers at plants that were not at risk. Their rationale is that the former workers (at-risk) know their jobs are at risk and that this program may be the only way to save them. However, their attitudes towards the MOA were not a positive because of this lingering doubt about their job security. The authors conclude with the following points:

- Workers may not initially embrace workplace reform because it threatens seniority-based gains they achieve through collective bargaining

- However, they will be positively inclined towards change when change:
    - is legitimized and supported by national union agreement
    - enhances their individual economic standing, even modestly
    - improves daily work experiences through traditional enrichment of tasks and providing opportunities for voice
    - improves job security through improving plant's competitiveness
    - achieves effectiveness through mutual gain rather than zero-sum tactics

Experience in the Aircraft Industry

Even the technical aspects of HPWS may take years to unfold. Kleiner, Leonard, and Pilarski (2002) were interested in the effects of labor relations climate and the introduction of a Total Quality Management Program on labor productivity in single, large plane manufacturing plant (referred to as Big Plane or BP plant). The United Auto Workers (UAW) was the union during the time of the study that was 1974-1991. During this time, there were frequent changes in Company Managers (4) and Union Presidents (6). This led to variation to the matching of individual backgrounds and leadership styles in these two important leadership positions. Over the 18 years of the study, the BP plant experienced 3 strikes of 1 to 3 months as well as a 'work to rule' slowdown. Toward the end of

the study period (1989), a TQM program was implemented. This program was modeled after the well publicized success of the New United Motor Manufacturing, Inc. (NUMMI) joint venture between GM and Toyota which included a nontraditional collective bargaining agreement with the UAW. The NUMMI plant in Freemont, California had gone from being one of the worst plants in GM to one of the best on productivity and quality measures as well as labor relations measures. The key issue of interest in this study was the impact of different labor relations climates, created by different leadership styles in the top management and top union positions, and the TQM program on productivity.

Some of the findings are mundane; strikes and slowdowns are associated with lower productivity. However, others are fascinating. For example, the style of the plant president varied from tough, autocrat at the beginning to more collaborative styles in the middle and back to a tough autocrat. The union presidents went from being moderate in the beginning to being militant in the middle to being cooperative to being a traditional adversary. Through all of this, the plant gradually implemented first Quality Circles and then TQM which were then associated with more or less union and management support. Beyond the negative impact of the strikes, the data showed that the TQM program detracted from productivity and the final, autocratic company manager was associated with the highest level of productivity. Within the company, the TQM program was a top-down initiative from corporate. It had the buy-in from local management and support from union leadership for its early stages. They even hired the executive who was in charge of implementing TQM at NUMMI to implement it at BP. However, the demands for production and the reluctance of supervisors to release their crews for TQM training undercut the need to create a workforce skilled in TQM methodologies. Furthermore, the authors suggest that the supervisors felt insecure about their jobs because of the TQM program. The immediate impact of all this was product delays and decreased productivity. The union leader was not re-elected and the company recruited the new, autocratic president who presided over the demise of TQM and instituted a traditional, top-down, autocratic management style. The new union leader ran on a platform of getting rid of TQM and going back to a more adversarial relationship with management.

In summary, this case once again shows the importance of studying union dynamics as part of the HR practice adoption and implementation process. The democratic nature of a union allows it to shift its leadership style to meet the threats that may be evolving from earlier union president actions. From the management side, this means that their union contemporary can change from a "partner" to an "adversary". It also highlights the full spectrum of Transformational HR practices in an organization, from adoption to implementation to removal. The adoption was not a grass roots approach which might have provided more support. Even hiring a person well versed in implementing TQM in a site that had some contentious labor relations could not overcome the initial barriers. Given the negative impacts associated with TQM in this particular location, terminating it would seem to be the rational, not just the politically correct thing to do. One final note; the ending point of data collection is 1991 and the publication of the article is 2002. The authors indicate an interest in re-engaging the company for an update on what happened in the 1990's. It would appear to be a useful venture.

On-Going Management Issues

Our final topic in this paper is that of on-going management challenges in HPWS. 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.

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"[1] the mill and that this was counterproductive to managing the mill appropriately. When one of us 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 lighting 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.

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

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[1] 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!

Conclusions

In this paper, we have described research that addresses the effectiveness, adoption, implementation, and management of High Performance Work Systems. The interest in these areas remains high, with new studies appearing in academic journals on a monthly basis. 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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