Reducing Cycle Times in a Union Environment: Is The News All Bad?

by

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Executive Summary

Prior research on cycle time management has emphasized the types of processes that organizations should employ to eliminate non-value-adding activities. Unfortunately, many of these approaches assume a willing and flexible workforce that is prepared to adapt readily to such changes. Consider an organization faced with an entrenched unionized workforce, governed by a stringent set of regulations regarding job demarcation, reduced flexibility, job seniority, and defined limits on outsourcing. Is the organization destined to remain less competitive due to the union? Based on a comparison of organizations in union and nonunion environments, there is evidence indicating that unionized organizations are indeed faced with longer cycle times as a result of these limitations. However, a set of interviews with managers at a number of unionized manufacturing organizations reveals that by either working with unions to establish better relationships or by simplifying existing job tasks, organizations can overcome some of the barriers to cycle time reduction imposed by unionized workforces.

Introduction

Prior research suggests that one of the most critical enablers of cycle time reduction strategies is the willingness of people in an organization to adapt to new situations and accept change. To reduce cycle time, the people who carry out value-added processes on a daily basis must be willing to adapt to the simplification and realignment of these processes or risk being replaced by others who will. Wetherbe (1995) notes that one of the key strategies to achieving cycle time reductions is a focus on human resources. The types of general changes to existing processes that require workers' acceptance include the following:

- Empowering,
- Self-directed teaming,
- Cross-functioning,
- Co-locating,
- Measuring to improve motivation, and
- Rewarding.

While such innovative human resource policies can indeed help a company achieve cycle time reductions, they are often in direct conflict with many of the policies that characterize a typical union environment. Union environments often mandate constrained work rules, promotion based on seniority, and restrictions on outsourcing of activities. Faced with the options of relocating to a different locale or slowly succumbing to the competitive inroads of nonunion competitors, what are managers at such a facility to do? This paper addresses the dilemma of organizations faced with a unionized workforce that limits managerial ability to reduce cycle times due to inflexible work practices. First, we provide empirical evidence which establishes that the presence of a union indeed hinders efforts to reduce cycle times. Next, we provide specific industry examples that illustrate an interesting proposition: although union firms generally appear to have longer cycle times...
times, there is no reason to assume that all union firms are destined to be incapable of competing on time. This proposal is further developed in the latter section of the paper where a number of case studies are used to illustrate how organizations with unionized workforces have adapted to their work environments. Through these examples, we show that two different avenues exist for reducing cycle times in union environments. Companies with a positive industrial relations history should focus on the development of an ongoing trusting relationship through improved communications with their workforce. On the other hand, organizations which have a historically adversarial relationship with their workforce should attempt to simplify and de-skill their processes.

A key tenet of unions is the notion that all employees are equal, and the primary criterion for compensation is one’s tenure with the company.

Union environments are often characterized by lower-skilled, narrowly defined jobs. Since managers typically seek to limit the union’s influence over what happens on the shop floor, jobs are kept simple and easy to monitor and control. In turn, unions have a vested interest in maintaining their membership; it is therefore easy to understand why unions want many narrow jobs rather than a few broad jobs. Unfortunately, simple jobs limit employee flexibility. Employee flexibility may also be limited by job descriptions. Formal work rules or informal peer group pressures often prohibit union employees from doing work that is not specifically assigned to their job. This problem is compounded by the presence of multiple unions on a site (Guest, 1987). In many locations, skilled trades employees are responsible for maintenance. An operator may know what is wrong and have the ability to fix the process, but is unable to do so since this involves “stealing” work from other union employees.

**Typical Union Environments (The Bad News)**

The 1990 contract between the United Auto Workers (UAW) and General Motors (GM) is over 600 pages long. This document provides information about employee compensation, who gets promoted, how to hire and fire, procedures for closing a plant, procedures for outsourcing work, as well as rules on a number of other issues. The contract is a rulebook that management must follow if they want their employees to work. In addition to the national contract between GM and the UAW, most plants also have a local agreement that provides additional rules for specific local conditions. This complicated situation is compounded by the fact that a strike at any single facility can disable GM’s entire network of plants, as a 1995 strike at a GM brake component plant in Dayton, Ohio proved. Unions can limit managerial flexibility through work rules, seniority systems, and provisions on outsourcing.

Good examples of the problems that occur with multiple unions and strict job demarcations can be found in the commercial construction industry. For instance, union concrete contractors require representatives from at least three unions to pour concrete. The forms for the concrete must be set by carpenters. The movement of concrete (raking, using wheel barrows, or managing a pump) is carried out by laborers’ unions. The actual finishing of the concrete is done by a finishers’ union. If a single board of the form is out of place, it must be fixed by a carpenter. If a finisher needs more concrete in a specific spot, they cannot pick up a rake and move the concrete; a laborer must perform this job. Each union has a specific task. In order to protect their jobs, workers become very territorial about the scope of activities performed by their trade. As a result, well-planned project management sites suddenly become hopelessly behind schedule as cycle times for
simple processes expand to meet each trade’s unique schedules.

Specific job demarcations are one way that unions can limit organizational flexibility. Another involves the formal rules of promotion. Seniority systems (which also occur with great frequency in nonindustrial settings) allow unions to exert control over promotions. In a static environment, a seniority system ensures that the employees with the most experience (theoretically the ones with the largest bank of stored knowledge) are the ones who are promoted. However, many of the techniques to reduce cycle times require a new range of skills which many senior employees may not possess. These new skills may be especially important as processes are changed and improved to eliminate non-value-added activities. The end result may be that the employees who are most able to help reduce cycle times are those with the least seniority, while the least qualified senior employees dominate high-impact positions.

Seniority systems also eliminate management’s ability to promote based on performance. In a union environment, seniority systems may eliminate managerial control over which employee performs a given job. This problem is compounded in union environments because of the composition of union firms. In general, union firms have older employees working in older plants than nonunion employers (Kochan, McKersie, and Cappelli, 1984). Older employees are less likely to want to change even if they have the ability required to learn new skills. In general, the time between major changes in a factory is negatively related to the ease of change (Schroeder, Congden, and Gopinath, 1995). Older employees in older plants who are promoted on the basis of seniority can pose a significant problem for management. The employees with the “best” or most important jobs are also those least likely, or able, to learn the new skills they will need. As a result, managers in many older plants find themselves doing the same things they have always done because change is simply too difficult to initiate.

These problems will be especially acute when managers seek to alter human resource policies affecting operational employees. For instance, managers seeking to empower workers to reduce cycle times must overcome two sets of obstacles. First, empowerment involves management placing greater authority in the hands of employees, which in turn requires a degree of trust that is absent in many union environments. Second, empowerment assumes that employees are willing to take on additional responsibilities. The traditional employee at a union plant is older, has had the same simple job for many years, and does not believe that “managing” is part of their job. Can you blame the employee with this attitude: “Management has never trusted us in the past, why should we take on any extra responsibilities now?”

Self-directed teaming encounters even more problems. Team leaders often will be the most senior employees—those least likely to want the responsibility of leading a team. Additionally, there is a low probability that the employee has the leadership skills required to manage the team. In many cases, union employees are unlikely to view the formation of teams as anything other than an attempt by management to increase operational employees’ workloads.

Cross-functional teams encounter all of the problems of self-directed teams, with an additional problem—mixing union members and managers. In a traditional adversarial relationship, it is unlikely that a team could be formed among people from both management and the union.

Finally, new measurement and reward systems are often met with a stubborn refusal by unions who then threaten a strike. A key tenet of unions is the notion that all employees are equal, and the primary criterion for compensation is one’s tenure with the company. Attempts at changing employee behavior through measurement systems will have limited success in an environment where promotion is based on the length of employment rather than performance and/or ability. Any attempts to alter this criterion in an effort to improve productivity and reward exceptional performance may lead to union grievances, walkouts, and longer cycle times. A proposition that emerges from this scenario is that
the presence of a union significantly reduces managerial flexibility to reengineer processes and reduce cycle time.

The Evidence (More Bad News)

Based on traditional views of how unions limit managerial flexibility, it is easy to see how reducing cycle times in unionized plants will be more difficult than in a nonunion setting. In a prior study, this proposition was tested using a sample of “Make-to-Order” manufacturing firms in union and nonunion environments (Pagell and Handfield, 1996). This sample was selected because Make-to-Order firms with the shortest cycle times, all other things being equal, generally enjoy a competitive advantage in terms of customer satisfaction. Cycle times for the firms in the sample were measured in a number of different ways (Handfield, 1995). Customer delivery time was measured as the time from customer’s order placement to actual delivery (including the time required for order entry, procurement, fabrication, manufacture, and assembly of the product). Manufacturing cycle time was calculated as the total number of working days required to manufacture a typical product configuration once it was released to the shopfloor (i.e., once the existing backlog of orders prior to the customer order had been completed). The final measure of cycle time assessed intraindustry cycle time variation, defined as the ratio of the firm’s average customer cycle time to the industry average customer cycle time.

In order to control for the possible mediating effect of process complexity on cycle time, a comparison of the number of operations performed in union and nonunion firms was conducted. No significant differences in the number of operations performed in the process between union and nonunion plants existed. Thus, differences in lead time cannot be attributed to the degree of complexity in the union and nonunion shops. In addition, the distribution of industries in union and nonunion groups was fairly similar (Handfield, 1995).

The statistical analysis (see Table 1) confirmed that unionized firms had significantly longer cycle times than their counterparts (Pagell and Handfield, 1996). The average customer cycle time for union firms was almost three times as long as that of nonunion firms.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Union Mean</th>
<th>Non-Union Mean</th>
<th>t-statistic</th>
<th>Probability</th>
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</thead>
<tbody>
<tr>
<td>Customer Lead-Time (Days)</td>
<td>118.41</td>
<td>39.5</td>
<td>-3.22</td>
<td>.004*</td>
</tr>
<tr>
<td>Manufacturing Lead-Time (Days)</td>
<td>23.57</td>
<td>12.61</td>
<td>-2.2</td>
<td>.035*</td>
</tr>
<tr>
<td>Customer Lead-Time Compared to Industry Average (percent)</td>
<td>92.027</td>
<td>42.77</td>
<td>-2.00</td>
<td>.056*</td>
</tr>
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* = Statistically significant at p=.05
firms. Unionized manufacturing cycle times were twice as long as nonunion firms. Finally, compared to the industry customer cycle time average, union firms had a ratio of one (close to the average), while nonunion firms enjoyed a significantly lower customer cycle time compared to the industry (a ratio of .43, indicating that cycle times were roughly 57 percent lower than the industry average). The latter result illustrates that the nonunion firms in the sample enjoyed a significant competitive advantage in cycle time over their unionized competitors.

These results support the proposition that union plants require more time to process customer orders. While some of the findings may be attributable to industry capacity conditions, other variables in the study suggest that union firms are at a significant disadvantage compared to nonunion firms in terms of reducing cycle times (Pagell and Handfield, 1996). Since reduced cycle times are associated with lower inventories, lower capital expenses, and reduced costs (Handfield, 1995), it is very possible that nonunion firms are also enjoying a significant financial advantage over their unionized competitors in the same industry.

**Improving Union Relationships (Some Good News)**

Despite the bad news described in the prior section, there is some evidence to suggest that the union/management relationship is becoming more collaborative (Thomas, 1991). For instance, Jackson et al. (1989) found that flexible work practices not previously associated with unions were prevalent in union environments. Wood and Albanese (1995) also found that union status was not a predictor of the types of human resource programs employed by a firm. Both studies suggest that, in general, unionized firms have adopted the policies associated with cycle time reduction at a rate similar to that of nonunion firms.

Moreover, unions and management are no longer as threatening to one another as in the past (Thomas, 1991). Recent economic history provides clues as to why this may be the case. In many industrial settings, American companies who for years enjoyed large profits suddenly found themselves under attack. Negotiations between companies and unions used to involve distribution of the proverbial “pie.” Suddenly there was a chance that there would be no pie. Some of the most contentious relationships greatly improved under the threat of job losses on both sides of the bargaining table (e.g., the UAW president served on the board of Chrysler).

In many industries, global competition has forced unions to reexamine their role. As shown in Figure 1, there is now a convergence of management and union interests with both focusing on joint survival of the organization. In the past, unions viewed their primary purposes as protecting jobs and trying to get as much as possible for their membership in the form of wages and benefits. However, the current global economy is not nearly as benevolent as the postwar economy which determined the nature of many union/management relationships. The end result of economic pressure created by global competition is that unions have been forced to choose between collaborating with management or facing the risk of job loss when companies decide to move to nonunion environments. In the worst case, companies may simply choose to go out of business. Unions that collaborate with management in order to ensure their survival are willing to do many things not generally associated with union environments. Fortunately, this also applies to many of the activities involved in reducing cycle times.

Based on a set of focused case studies, a few large firms were identified with previously adversarial relationships that embarked on a mission to improve their cycle times. Within these organizations, some unique approaches to cycle time reduction strategies were discovered that required a fundamental shift in thinking on the part of both management and union employees. For the first time, management in these organizations allowed employees who were traditionally viewed as adversaries to make real decisions. Union employees began to accept responsibility for decisions that were previously “blamed” on management. In all of the following
cases, changes in the workplace were not made in a piecemeal fashion, but through training, team building, and alternative compensation systems. In one case, the company not only increased training and teamwork but also simultaneously changed the reward system. All of these organizations came to realize that the term “empowerment” actually represents a series of processes, not simply a decision.

Training
An important part of empowerment is training. Employees who have never made decisions for themselves cannot suddenly be expected to function as managers. The most successful companies investigated in this study began by instituting training centers that were jointly developed with their unions. In order to train employees to function in teams, a manufacturer of diesel engines shared the financing of their training program with their union. The company established a large, on site union-operated training center that is used to train all new employees—management and labor. All employees, regardless of rank or union membership, participate in an intensive 16-week training program that teaches them how the company competes, how to build the company’s products, how to work together, how to solve problems, and how to continuously improve processes. The training does not end here; as part of the company’s continuous improvement philosophy, all employees are required to periodically “upgrade” their skills at the training center.

Figure 1: Convergence of Interests Between Management and Unions

- Quality
- Cycle time reduction
- Customer satisfaction
- Stakeholder satisfaction
- Cost reduction
- Wages & benefits
- Job security
- Avoiding headcount reductions
- Equity
- Seniority systems

Survival of The Enterprise
Team Building

Another important set of skills required to promote empowerment in a unionized workforce is team building. One company instituted teams by first training all employees in a number of skills such as teamwork, decision making, quality, and control. This was accomplished with the help and encouragement of the union. Once union members understood that these skills would help preserve jobs, they readily participated in the change. The result was a more competitive workforce with a deeper understanding of their company, now able to make decisions and work in teams.

In another case, a major automotive company, whose administrators have a long history of poor relations with its union, has made even larger strides in its attempt to institute teams at one of its plants. In an unprecedented series of events, union and management collaborated to not only establish teams in all assembly areas, but also to move away gradually from the practice of promotion based solely on seniority. A major change involved having team members “self-select” themselves as team leaders, thereby creating an incentive for employees who were motivated to learn all of the team jobs. This was a significant change from the company’s seniority-based system which had dictated that the most senior person was always team leader, regardless of their motivation to learn new skills.

Alternative Compensation Systems

The automotive plant mentioned has also started using skill-based pay. A new policy at the plant states that employees who learn a greater variety of skills will be rewarded accordingly, regardless of seniority. Not surprisingly, those employees who are motivated to learn are being handsomely rewarded. The company has improved its production flexibility, as well as the knowledge base of its employees—a win-win situation for both the company and the unionized employees.

Other companies investigated have also had some success in changing the way employees are promoted by using a number of novel seniority systems that were negotiated with the unions. One company has negotiated a separate seniority system for each product line. Now, when there are “slow-downs” on certain lines, employees from one area do not interact with one another. This helps to limit major oppositions to displacements when such downturns occur. The segregation of employees into different product lines is especially important in preserving team environments. If people move from one area to another, they in effect go from team to team—destroying the team cohesion within that may have taken years to build.

A machine tool builder uses a similar system to ensure that they retain the people they need in downturns or when demand changes. The company uses a seniority system based on classification and product line, which allows keeping less senior people for a product that is selling well while laying off people who may be more senior but are working on a product line that is not selling well. While such innovations may seem trivial to someone who has never worked in a union environment, the increased flexibility is a major benefit to these organizations.

A Process Map for Building Relationships and Reducing Cycle Time

All of the companies discussed in the prior section have managed to institute some or all of the human resource policies associated with cycle time reduction discussed by Wetherbe (1995): empowering, self-directed teaming, cross-functioning, co-locating, measuring, and rewarding. Although not easy, in every case the organization has instituted these changes in an environment that would have been characterized as adversarial only ten years ago. These examples illustrate that the existence of a union does not necessarily dictate that the workforce cannot be flexible and cannot effectively reduce cycle times. In reviewing the processes used by a number of other companies to achieve cycle time
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objectives, the authors were able to identify different sets of activities used to implement change. In comparing the two sets of approaches (see Figure 2), we found that two potential avenues exist to reduce cycle times in a union environment. The first method involves building a trusting partnership with the union and working towards a common set of goals. The second method was employed by organizations faced with a hostile union where collaboration was not possible. This group of organizations has managed to reduce cycle times in a different manner—by developing processes which do not require an empowered workforce.

Option 1: Developing Trust

The unionized companies discussed earlier had one thing in common: they were able to institute policies that were radically different from those found in a traditional union environment. Clearly, it is impossible to institute such changes without a good relationship between management and the union. The true nature of this “relationship” is often deceiving. It seems that every year companies and their unions appear in the media and brag about the new “partnership” they are forming. For a few days, the front pages of the local paper decree that strikes are a thing of the past. Union leaders and managers

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<th>Initiate Trust Development</th>
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<tr>
<td>Justify positions</td>
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<tr>
<td>Build consensus</td>
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<tr>
<td>Be willing to make sacrifices</td>
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<td>Problem solve jointly</td>
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<tr>
<td>Focus on total process, not individual units</td>
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<tr>
<td>Be truthful</td>
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<tr>
<td>Explore new compensation systems</td>
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<tr>
<td>Build teams</td>
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<tr>
<td>Train employees</td>
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<td>Develop leadership skills</td>
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<tr>
<th>Standardize, Simplify, Automate</th>
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<tr>
<td>Limit workers’ control over processes</td>
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<tr>
<td>Work with local union exclusively whenever possible</td>
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<tr>
<td>Begin to initiate trust with small projects</td>
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<td>Isolate “problem” employees in non-critical processes</td>
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<tr>
<td>Ensure good preventative measures</td>
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<td>Develop non-union systems operators</td>
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Figure 2: Approaches for Reducing Cycle Time in a Union Environment
play golf together. Then the first grievance is filed. Management representatives complain that the union just does not understand the competitive environment, while the union replies that they have a responsibility to their people. Instead of finding common ground, each party quickly retreats to the familiar “us versus them” position.

To move beyond this familiar routine, companies must build and then maintain the trust of their workforce over a period of years. This is not accomplished by saying all the “right things” about “working toward common goals.” Rather, a commitment to “walk the talk” and actually communicate and develop a consensus on difficult issues is required.

Trust building takes communication and time. Both sides must communicate what they expect, and why. Without a rational justification supported by unbiased and reliable data, attempts at consensus building will deteriorate into a poker game, where bluffs and even outright deception may lead to the winning of the next hand. A good example is a situation where changes to a process may eliminate union jobs. Clearly, this proposal is not going to thrill a political body whose main purpose is to protect jobs. However, if the union is presented with reliable data that clearly shows that (a) the competition enjoys lower costs, (b) management has worked at cutting all other costs first, and (c) the process change can help resolve the issue, then the proposal may be accepted without a strike, slowdown, or grievance blizzard.

Not only must management communicate on major issues, they must establish an ongoing dialogue on future strategies, opportunities, looming problems, and potential weaknesses. In so doing, it is possible that union representatives may be able to present alternative solutions to problems and new ways to exploit opportunities. Managers who do not take advantage of the intellectual capital residing in their unionized workforce are failing to utilize a huge stored bank of knowledge. In this regard, Western managers may take a page from the book of Japanese management that allows union representatives to participate in strategic planning with the understanding that the workforce would profit in good times and endure pay cuts when times were lean.

It is important to note that trust takes a long time to develop but can be destroyed quickly. It is easy to “open the books” when profits are not forthcoming. However, sharing financial information when managers are receiving large bonus checks and stockholders are reaping the benefits of a profitable investment is harder because the union employees who sacrificed in poor economic times will want to share in the prosperity as well. Management cannot become reflexive and stop communicating after a crisis has passed, nor can they allow union leadership to revert to its traditional role. Trust is fragile and needs to be continuously maintained.

An example of how trust can be destroyed occurred after a machine tool builder instituted a partnership with its union. For two years management and union employees slowly developed a degree of trust and learned to work together. The effort initially focused on small problems and had eventually reached the point where the two groups were beginning to develop consensus on fairly contentious issues such as reducing job classifications, outsourcing, and reductions in health benefits. One day management decided that a technological change was required on the shop floor. Union employees suggested a number of alternatives, but the owner was adamant, insisting that “this is my company, and I will do what I want.” Management was surprised when after the equipment was installed, the union threatened a walkout over a plan to have one person operate two of the new machines when in the past the same person was responsible for a single machine. The perplexed manager did not achieve the expected cost savings from the new equipment and concluded that the entire union partnership policy was a waste of time since the union did whatever they wanted in any case.

The lesson in this case is that although technological change may have been needed to improve competitiveness, the owner, by reverting to a traditional adversarial stance, destroyed in one week a fragile trust that had taken years to build. The union now knew that when it was convenient for management
to work together, partnering was “in.” If something was “important” but contentious, however, management would revert to “business as usual.” The union’s response to management was a rational reaction to a “partner” who did not understand the meaning of the word.

The machine tool builder illustrates the importance of trust in building and maintaining a long-term partnership. Unions who do not trust management will not work with management. The required trust cannot be achieved overnight, although destruction of trust can occur quickly. Management will have to share sensitive information with the union about costs and profits and continue to do so even when it is obvious that the company can afford to return some concessions to its union employees.

Information sharing is the first step toward building a good relationship. A union convinced that changes are needed in work rules in order to protect their jobs is a union likely to try to find a way to save those jobs. However, this relationship only works if management and the union are not opportunistic. Management cannot expect concessions from the union without being willing to give something back. In dire economic times, keeping a job may be seen by the union as a fair trade for concessions on work rules. However, when times improve, managers who do not reward their union with increased wages and benefits or perhaps by hiring more union members will be perceived as having taken advantage of the union. A partnership requires sharing the pain of economic downturns and the profits of economic booms. Companies that expect their unions to share only in the pain should not be surprised when the flexible work practices they needed to reduce cycle times do not materialize.

Option 2: Working with a Hostile Union

Although building a long-term trusting relationship may be the best way to enable a union company to pursue cycle time reduction, there are many firms that, for whatever reason, cannot develop such a relationship. These organizations do not necessarily have to remain less competitive or move their facility to a union-free environment; less extreme measures can be taken (see Figure 2).

In some cases, management must recognize that an investment of time and effort can eventually lead to a closer relationship. For instance, divisions within a large company may wish to pursue initiatives with their local union, especially when top management has an adversarial relationship with the union at the national level. In other cases, union leaders may not be willing to accept management as anything other than an adversary who sits across the bargaining table and must be convinced otherwise. Finally, union leaders may see the value of a closer relationship but its membership may not desire to be “close” to management.

In such cases, small joint projects with the union should be initiated at the plant level. If union members or their representatives completely distrust management, managers should begin by sharing information even if the act is not reciprocated. However, none of these activities will reduce cycle time, and it may take many years to build the trust required for initiating changes in human resource policies that are required to reduce cycle times.

The alternative in such cases is to map out processes in such a manner that knowledge of the system is located somewhere besides the shop floor (union) employees. Employees who can program and maintain their own machines are often the ones who discover novel ways to make the equipment and processes faster. However, in an environment where
each of these functions is performed by a separate individual who is not willing or able to learn different techniques, other alternatives for reducing cycle times must be explored.

**Standardization, Simplification, and Automation**

Wetherbe (1995) suggests that cycle times also can be reduced through standardization, simplification, and automation. Organizations implementing these changes in their production processes will be much less dependent on shop floor employees. In cases where a contentious union is present, the absence of a flexible workforce does not have to handicap efforts to reduce cycle times. (One should note, however, that if the relationship improves in the future, employees will have a limited knowledge base to help improve processes).

Automated processes that are simple to operate allow job standardization. The organization can store knowledge in equipment and managerial employees rather than in union employees. Computer controlled automation such as Computer Numerically Controlled (CNC) machines allow extremely fast, simple setups. If the machine has a large enough tool capacity, setups involve simply loading a new program, which may be as easy as entering a part number. In a system where the programming is done off line, the operator may only need to be able to enter the part number and mount the part correctly on the fixture.

A large manufacturer of construction equipment deployed such an automation strategy and subsequently reduced product cycle times, increased inventory turns, and lowered the break-even point on the equipment, even with a very contentious union. This firm essentially designed a system that exploited existing process technology to mitigate the constraints imposed by their union.

The company started by automating many of their labor intensive processes, replacing them with flexible manufacturing systems (FMS) that linked a number of programmable machines together automatically. The FMSs were designed so that a process requiring a large number of machines could be operated by only one or two people. This limited the number of union employees needed and reduced the opportunities for the union to use work rules to interrupt managerial improvement efforts.

Instead of a large pool of knowledge workers, each FMS requires only one or two union operators to load and unload parts. These operators do not have the knowledge or motivation needed to improve the system because they have jobs that have been designed to limit their interaction with the system. Nevertheless, continuous quality improvement and reductions in cycle time are an integral component of the system design. Each FMS has a nonunion managerial systems operator who is responsible for performing a variety of tasks such as quality audits, cycle time audits, review of programs, and review of incoming material quality. This systems operator ensures that opportunities for improvement are identified and acted upon.

This system works very well in the union environment because there are few opportunities for union employees to disrupt processes. Narrow jobs do not limit flexibility because the operators are only responsible for loading and unloading the system. Changes made to operational procedures do not affect the operator’s job, only the automated process. In addition, the simplicity of the jobs guarantees that even if the seniority system promotes a totally unskilled or unmotivated individual to an operator’s position, their impact on overall system performance will be minimal. Finally, changes in the work flow prevent employees from being asked to do tasks not specifically part of their job description, thus managerial time is not taken up with resolving grievances.

This system has resulted in major improvements over the labor intensive processes it replaced. The company has reduced cycle times considerably and is now able to make major product overhauls every two years. In addition, they have increased inventory turns from two to twelve per year. The break-
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seniority systems, and limitations on team building. However, we have encountered a number of companies that have overcome these obstacles through a variety of different strategies. Organizations faced with an adversarial union should remember that there is often a good reason for union development, as well as union distrust of management. In some cases, a firm’s prior history of union conflict may be responsible for on-going distrust between management and labor. Managers can seek to change this perception through greater information sharing, compromise, joint problem solving, consensus building, team building, training, and rational, fact-based justification of new initiatives. Over time, this strategy can help foster an improved organizational culture in which management and labor work jointly to solve problems, improve processes, and reduce cycle times.

In some situations, the environment between management and union may be less hopeful. In situations where hardened union leaders are not willing to consider change, management must seek to simplify and standardize processes through automation. To accomplish this strategy, however, a fundamental shift in the knowledge base must occur, and managers must be prepared to take on a new role as process owners responsible for brainstorming, monitoring, and continuously improving processes. In either case, cycle time reductions can occur through application of the common strategies developed in prior research.

References


Handfield, R., Reengineering for Time-Based Competition, Greenwood Publishing Group, Westwood, CT, 1995.


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