

Enterprise-Wide Workforce Management: The Next Strategic Initiative for the Manufacturing Industry



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Manufacturing industry leaders have embraced initiatives such as Lean Manufacturing and Six Sigma to streamline, measure and monitor their supply chains and internal processes. However, even industry leaders often overlook labor as a critical area to be optimized. Enterprise-wide Workforce Management (WFM) allows organizations to reduce labor costs, enhance compliance, increase productivity and report more accurately on labor distribution. WFM also helps manufacturing companies face other current challenges such as the management of globally dispersed workforces, a shortage of skilled workers and demands for shorter production timeframes.

Strategic Advantages of WFM in Manufacturing

As depicted in Figure 1, there are a number of key issues that WFM enterprise solutions can help address for any manufacturer. These include.



Figure 1

- **Labor costs.** Overtime is costly and the rules that govern its distribution are complex. WFM applications can ensure the rules are followed and the distribution is fair and equitable.
- **Compliance and risk.** Employment contracts and pay practices must align with state and federal laws. WFM can automate these rules to ensure compliance.
- **Product costing.** Advanced manufacturers use WFM solutions to integrate shop



floor data to determine per piece rates, item counts, downtime, and to allocate employee time across specific work orders.

- **Productivity.** WFM solutions can provide self-service functionality for employees to allocate time to cost centers, process work orders, check work schedules, and request vacation time. This can reduce operational costs and improve productivity.
- **Absenteeism and turnover.** Leave and attendance policies can vary significantly across different sites in the same company. WFM can bring automation and standardization to this area, creating opportunities for cost savings.

How to Approach an Enterprise WFM Initiative

After reviewing the benefits of an enterprise WFM solution, many organizations are unsure of how and where to begin a deployment. To successfully implement a WFM solution, the organization and its systems integrator will need to identify and fully understand the unique challenges faced by the manufacturing industry.

Manufacturers are typically large organizations with multiple sites, hundreds or thousands of unionized employees with complex pay rules and practices. The existence of multiple sites, results in the need to negotiate local labor markets and labor shortages. Many large manufacturing organizations delegate independent decision-making authority to each site, resulting in unique workforce management practices by location. Efforts to standardize these practices can spark a power struggle that can extend through the entire organization.

Independent decision-making authority can result in multiple sites supporting different WFM applications. In this situation, the organization is wasting significant financial resources maintaining several different software licenses and technology infrastructures. If the site relies on manual processes, the organization could be losing millions of dollars each year in erroneous data entry, ineffective time reporting and compliance risk.

Manufacturers are frequently involved in acquisitions of new plants that bring different WFM systems and processes into the fold. If the acquisition involves an offshore plant, the organization may have to negotiate profoundly different processes, laws, languages and employment cultures.

Compliance with state and federal laws, and pay and benefit provisions in collective agreements, will also challenge any organization attempting to standardize defined pay practices. This is particularly relevant for organizations dealing with frequent union disputes or employee grievances. These compliance challenges can be amplified by manual processes and antiquated WFM systems, which have a much greater capacity for inaccuracy.

With multiple plant sites and a patchwork of WFM processes, manufacturers are simply unable to obtain the accurate data on labor allocation needed to drive strategic planning and cost reduction. An effective WFM solution, properly deployed, can address all these challenges and provide the oversight and data needed to take the organization to the next level of competition.

A word of caution — without intensive pre-deployment analysis of enterprise objectives and challenges, an organization may lose sight of the true strategic benefits that come from implementing a WFM solution. Without the appropriate planning, the organization may seek to achieve its return on investment (ROI) simply through headcount reductions. A properly planned WFM deployment can produce a robust ROI that directly impacts a manufacturer's bottom line.

Where to find the ROI

Manufacturing organizations all have unique challenges when it comes to managing technology demands, especially when those demands exceed time and financial resources. Industry leaders that have successfully deployed WFM solutions have found the biggest boosts to ROI typically come from the following areas:

- **Hourly employees.** Annual labor costs savings from more accurate management of hourly employees can be significant. This can be accomplished through standardized grace and rounding rules, more accurate hourly pay calculations, paying to schedule and precise tracking of paid time off.
- **Leave Management.** Moving leave management to a centralized, automated system that can be monitored by employees, supervisors and executives can significantly improve leave liability visibility and management, creating cost savings.
- **Cost avoidance.** A new WFM system will help an organization avoid significant costs from the elimination of maintenance fees for antiquated legacy systems at individual plant sites.
- **Alignment of business processes to corporate policy.** A WFM solution can help a manufacturer manage acquisitions, individual plant contracts and independent decision making authorities at individual sites, and ensure they are all brought into compliance with corporate policy. Efforts to standardize scheduling, pay, leave and attendance management policies prior to the implementation of a WFM solution will add significantly to the effectiveness of the new system through reduced solution complexity, and boost ROI. It will also help the organization manage resistance to change from deeply ingrained systems and processes at the individual plant level.

Taking WFM to the next level

Many manufacturers that have embraced WFM solutions have seen the benefits of modules such as time reporting, or attendance and leave management. However, industry-leading manufacturers have found that other, more

sophisticated modules such as workforce scheduling or task/activity tracking have allowed them to reach a new level of operational efficiency and cost effectiveness. Figure 2 illustrates the various modules available within the WFM industry scope.

Industry Standard WFM Scope			
Time Reporting	Attendance	Leave	Reporting & Analysis
Clock in/out	PTO Requests	Leave policies	Workforce Analytics
Report elapsed time	Absence Reporting	Leave accruals	Trend & Pattern Analyss
Task Activity/project time reporting	Absence Reasons	Holiday management	Productivity and performance analysis
Productivity metrics	Absence pattern analysis	Leave requests	Overtime equalization
Timecard review and approval	Disciplinary actions	Eligibility determination	Training certifications
Overtime approval	Attendance rewards	Manage documentation	Labor costs
Premium pay	Accrual Balances	Track intermittent hours	Attendance/Absenteeism
Incentives	SCHEDULING	Record leave taken	Time off
Exceptions & corrections	Shift definition	Report PTO balances	Schedule reporting
Compliance (FLSA, DOT, SOX, etc.)	Shift assignment	Unpaid LOA's	Ad Hoc reporting
Overtime equalization	Scheduling	Compliance (FMLA)	ADMINISTRATION
Gross pay	Resource Planning	Cash payouts	Employee date
Labor distribution	Staff forecasting	Leave donations	Rules and policies
Work Order Management	Employee skills and preferences	TASK ACTIVITES	Workflow
Prior Period Adjustments	Employee swaps	Task Activity Recording	Work groups
	Minor/Overtime rules	Project/work Recording	Security
	Overtime equalization	Machine Downtime	Access Control
	Job Bids/Transfers	Scrap	Interfaces
	Contingent Help	Quality/Productivity	
		Cost Analysis	

Figure 2

Workforce Scheduling

Scheduling represents a dynamic challenge for everyone in the manufacturing industry from top-level executives to line supervisors on the shop floor. In manufacturing, labour represents the largest operating expense and many variables must be taken into account when setting a schedule and workforce level: Changing customer needs; seasonality; product mix changes; and broader economic conditions. The organization must also somehow overcome the challenge of finding employees with specific skill sets or certifications while balancing complex union rules for hiring, firing, transferring, swapping or changing shifts. And finally, the organization must find a way to ensure it is not depressing productivity by jeopardizing the work-life balance of its employees.

Faced with rapidly changing business and labor market conditions, it's easy to see why many manufacturers constantly walk a fine line between labor shortages and gluts. Figure 3 graphically illustrates the roller coaster experience of many manufacturers as they try to align labor supply with demand. The green line represents fluctuations in work requirement, while the purple line shows the

impact of employing too many, or too few, workers.

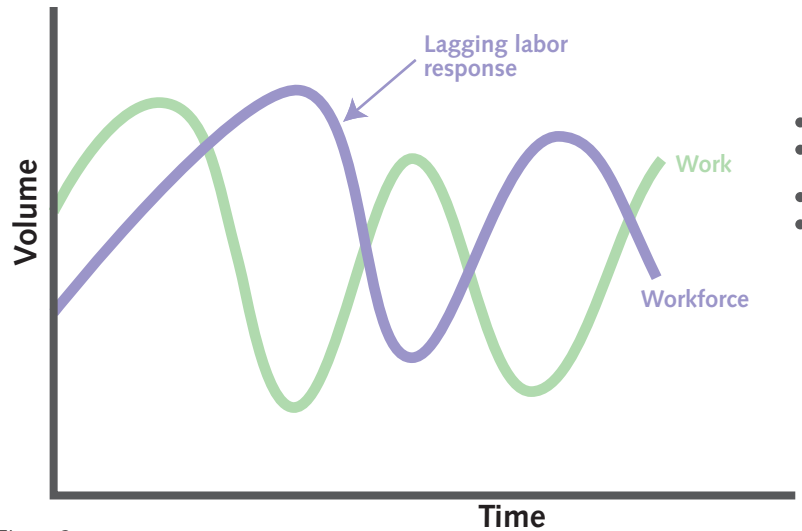


Figure 3

Typically, when labor falls short of demand, the organization experiences lost revenue opportunities, and the quality or timeliness of products or services suffers, resulting in decreased customer satisfaction. To counteract this shortfall, the organization may have to approve overtime or hire contingent labor at a premium, both of which may result in dissatisfied workers. When the organization is overstaffed, productivity, quality, and service goals are met, but profit margins decrease because labor costs have exceeded planned expenditures.

It may seem like an intractable scenario, but a WFM solution can satisfy labor demand at the lowest possible cost by minimizing over and under scheduling, and reducing overtime and other contingent labor costs. This can be accomplished through the use of a closed feedback loop system, which is illustrated in Figure 4.

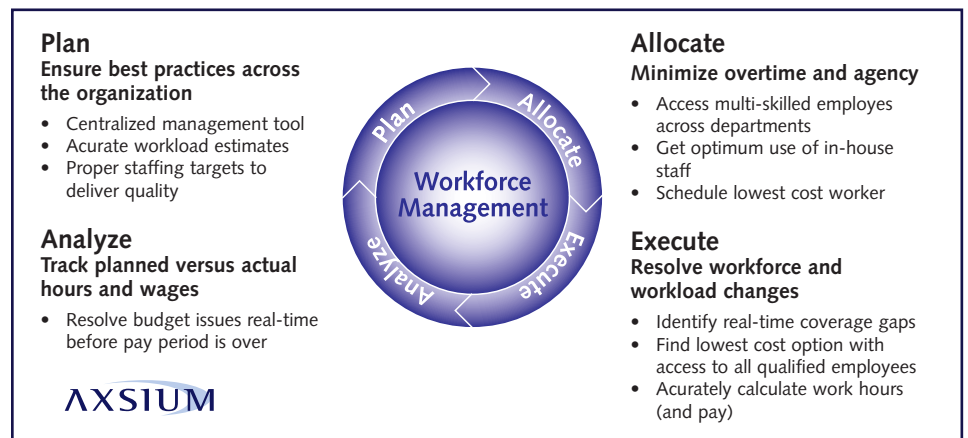


Figure 4

This system has four key components:

- **Plan.** To meet service levels, the organization must accurately estimate the workload and determine the proper staffing targets. This can be done with a centralized management tool.
- **Allocate.** To minimize the use of overtime and contingent labor, the organization must optimize use of the existing workforce, scheduling the lowest cost workers needed to deliver goods and services.
- **Execute.** The organization must identify gaps created by real-time changes in the workload and workforce, and fill those gaps with the lowest-cost option available. It is also important to get employee input on work schedule preferences.
- **Analyze.** Managers must compare planned and actual work hours and resolve outstanding issues in real time rather than at the end of the pay period.

The same task list outlined by the closed-loop feedback system applies to ensuring the highest level of employee satisfaction while satisfying labor demand at the lowest possible cost:

- **Plan.** Avoid last-minute staffing changes by encouraging employee feedback in scheduling and identifying potential conflicts before creating assignments.
- **Allocate.** Match workload and employee preferences with a self-service functionality, which empowers the employee to make work-life balance decisions.
- **Execute.** Incorporating employee input on work schedule will reduce absenteeism/understaffing, and improve job satisfaction.
- **Analyze.** Evaluating real-time attendance and conflicts allows the organization to more effectively monitor overall labor performance.

A study by Circadian, a leading employees relations consultant, found companies that allowed employee input on scheduling preferences using sophisticated WFM systems, including the ability to swap shifts with other qualified co-workers, reduced absenteeism on average by 10 per cent and turnover by 20 per cent. That has an immediate impact on productivity.

To ensure ideal alignment and maximum benefit, the organization must combine sophisticated scheduling tools with the WFM solution's time and attendance functions. This will allow managers to identify where their employees are and when they are working. This will help balance the constraints of cost, compliance and employee satisfaction.

Task and Activity Tracking

Traditional time keeping records basic payroll transactions, such as the time employees arrived at work, when they left and returned from lunch, and when they go home for the day. Those traditional systems cannot, however, tell an

employer what their employees were doing during the workday. Manufacturers need more data on how their employees are spending their time. Sophisticated time-collection devices can collect broader activity data for both employees and machines. Employers can then identify obstacles and bottlenecks such as down time, and scrap which drive down productivity, allowing them to analyze and manage costs more effectively.

The key to task and activity tracking is the collection of detailed data on activities occurring on the shop floor. This data can be mined through sophisticated data transaction terminals employing web applications, personal workgroup computers, and handheld devices such as PDAs and traditional card reader/swipe devices. The information that can be collected with these tools includes:

- **Direct.** Activities, jobs, tasks, projects, part numbers, visit data.
- **Indirect.** Indirect labor costs represents a critical area of expense control. Many organizations have no idea how much time employees spend not working on direct production activities. Capturing this data will create tremendous cost-saving opportunities, especially when combined with Lean or Six Sigma initiatives.
- **Job Status.** Track activity and units completed, yield, scrap production, and reasons for each. Machines can also be assessed as assets that can be scheduled, monitored and effectively managed.
- **Productivity.** A Manufacturing Execution System (MES) or production counters on the machines can compare actual hours against standard hours for both individuals and teams.
- **Reconciliation.** Evaluate the direct and indirect labor costs against payroll hours.

The collection of this information allows an organization to identify the hard costs of delivering goods and services. This can facilitate improved job costing and pricing, margin analysis, and areas where Lean or Six Sigma initiatives can be deployed to control costs and improve efficiency. The result? Improved customer responsiveness.

The Final Step: WFM, ERP, and MES Systems Integration

Typically, Enterprise Resource Planning (ERP) systems do not provide real-time data, as they are primarily focused on work order management, inventory control and output. Moving ERP data to a WFM system and integrating it with scheduling information allows an organization to more accurately match labor resources to the required production volume. The WFM system can also track work in progress (WIP) in real time and transmit it back to the ERP system. Combining ERP work order management with the metrics and scheduling capabilities of a WFM solution will produce a broader, more thorough picture of what is actually happening on the shop floor. That means increased productivity.

The same holds true for Management Execution Systems (MES) that monitor and count production output. MES systems typically focus on the machine data, not labor data, and thus provide only half the picture. An integrated WFM system can draw production data out of the MES to measure and balance labor and productivity data.

Integrating ERP and MES data with an enterprise WFM solution, and adding scheduling and task/activity tracking capabilities can give an organization an important edge over competitors: A complete picture about what is happening on the shop floor.

Conclusion

Despite reaping the benefits of strategic process improvement, many manufacturers have failed to employ some of the same solutions to integrate and optimize labor management. An enterprise-wide WFM system, integrated with EMS and ERP systems, will allow an organization to reduce labor costs and compliance risks, increase productivity and more accurately report on labor distribution. This allows for the effective management of manufacturing challenges such as oversight of dispersed workforces, shortage of skilled workers and the demand for shorter production time frames. Taken together, these benefits will add up to lower overhead, increased productivity and, most importantly, a more robust bottom line.

For More Information

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