



People, Productivity, and Profit: Why Workforce Management is the Next Strategic Performance Advantage for Manufacturers

By David Caruso, David Caruso & Associates, Inc.

MANUFACTURING PRODUCTIVITY IS HIGH, SO WHAT'S THE PROBLEM?

Very few industries operate at the velocity of manufacturing. Given opportunities for explosive growth and high margins, the competition is ferocious and the rules of the game change overnight. As generations of products eclipse previous generations, and even entire product categories, the incredible pace of innovation triggers continual shifts in power and value creation across the entire industry.

When it comes to workforce issues, perhaps no industry is under more pressure than manufacturing. The challenges manufacturing managers must face every day include front page topics such as massive outsourcing to low cost countries, unions, an aging workforce, as well as health and family care issues. Most importantly, however, is the shift in thinking about the value of the workforce and how it is being changed by two big issues brought on by globalization:

- Tremendous price competition from developing countries, and
- Globally networked supply chains.

In a world where products can be replicated globally with relative ease and cranked out by low-cost manufacturing operations in far flung parts of the world, manufacturers are looking at every aspect of their operations for productivity improvements and competitive advantage.

GLOBAL PRICE COMPETITION AND THE SHRINKING U.S. MANUFACTURING WORKFORCE

We read about it every day; the dramatic shrinking of the U.S. manufacturing base and the race to offshore low-cost labor countries. For many manufacturing executives, accepting some degree of offshore manufacturing is a factor of corporate survival, a point driven home by startling productivity statistics. For example, there is a very limited amount of published data, but based upon what is available for estimated compensation ratios and work hours, China's manufacturing employees averaged about US\$57

cents compensation per hour and averaged almost 45 hours per week in 2002 versus approximately US\$22.00 per hour in the U.S. (U.S. Bureau of Labor Statistics).

During the past several years, as executives drove down cost by buying parts or products offshore or outsourcing their own production operations, the manufacturing sector of the U.S. economy experienced a substantial loss of jobs. In January 2004, the number of manufacturing jobs stood at 14.3 million, down by 3.0 million jobs, or 17.5 percent, from 17.3 million in July 2000 and about 5.2 million since the historical peak of 19.5 million in 1979.

Despite the loss of U.S. manufacturing jobs, we can see that U.S. output is rising each year. For the past decade productivity has risen continuously and in the 2004/05 timeframe it rose another 5.1 percent. More importantly, the expectations and forecasts continue to soar. How will managers continue to get the productivity increases they need to compete?

One of the keys to gaining productivity in recent years was the use of technology, in operations especially, to optimize manufacturing output and manage a global supply chain. Over recent decades, U.S. manufacturers have continually invested in more and better capital equipment and manufacturing techniques. That investment has enabled them to raise their own output and keep pace while managing the various constituents of their global supply chains.

GLOBAL SUPPLY CHAINS AND THE GROWING HUMAN RESOURCE CHALLENGES

In the recent past, a manufacturer could deliver a new product from within its own walls. But given the globalization of manufacturing, the industry has restructured to take advantage of the attractive low cost labor available in emerging countries and specialist firms. As a result of shrinking opportunity windows and aggressive new competitors, manufacturers must leverage design, manufacture, channel and distribution partners – all creating more complex, networked supply chains.

Today, managers must develop the expertise and decision-making prowess in employees that participate in a networked supply chain and communicate with third-party partners and suppliers and seize new market opportunities in emerging markets such as China, India and the Pacific Rim. This puts pressure on managers to attract, develop, and retain employees that can manage internal operations and nurture good relations with their subcontracted third-party manufacturing partners.

Many of yesterday's manufacturing jobs are gone but ones that remain are often more complex, since often real-time decision-making has been delegated to employees most familiar with the situation and its consequences. Often, manufacturing employees are compelled to be more computer literate, have better overview of how their work influences other internal and external groups, and have strong customer and interpersonal skills. It's not unheard of to have a line manufacturing employee speak directly to a customer about how a product works or how to make it work better.

There are new jobs too, ones that demand different skills and require new performance goals and measurements. A company may not have any more material expeditors on staff, but some of the material expeditors may have been promoted to the international trade desk.

EXECS MUST ATTACK THE STRATEGIC HUMAN CAPITAL MANAGEMENT ISSUES.

Manufacturers' first line of defense in the arena of global competition was to apply technology to the supply chain. We are now at a juncture where there are diminishing returns from the low hanging fruit of inventory and cycle time reductions and executives now recognize labor is a potential constraint and critical next-stage opportunity.

While human resource systems have languished in the back office, performing essential tasks like generating reports for government agencies, manufacturers haven't seen, or had the time to see, their strategic potential. There is a need for a better educated and trained workforce. Federal Reserve chairman, Ben Bernanke said it best: "For example, taking full advantage of new information and communication technologies may require extensive reorganization of work practices, the reassignment and retraining of workers. But, new technologies will translate into higher productivity only to the extent that workers have the skills needed to apply them effectively." (Ben Bernanke speech to Leadership South Carolina, Greenville, South Carolina, August 2006.)

Profitability and value are moving to new sectors of the manufacturing industry – away from firms that can't move quickly enough to maintain price and product innovation barriers. Given the massive restructuring of the manufacturing landscape, executives must rethink their high-level human resource strategies. Incremental improvement isn't enough. What is the strategy for ramping up a business team and supply chain should a new product take the market by storm? What's the optimal mix of outsourced manufacturing and permanent and temporary workers? What's an acceptable balance of responsiveness to customer

demand and employee work life standards? Should customer-facing manufacturing employees qualify for customer satisfaction compensation? Manufacturers must manage global, virtual, collaborative teams and on-demand employment models that recognize market demand and balance it all with flexible work schedules that fit the modern family.

THE CHALLENGES

Given the backdrop of global competition that can easily undercut prices often by as much as 30 percent, manufacturers must consider the impact of workforce improvements through the four key stages of employee engagement: acquire, track, develop and assess. To strategically manage and align the workforce with business goals on an individual level, companies then have to answer four basic, personnel-related questions:

1. Where do we find and acquire the right people?
2. How do we effectively deploy and track these individuals?
3. How do we continue to improve skills and develop these resources?
4. How do we motivate and measure employees for better performance?

Having had great success with technology-based productivity improvements across the physical supply chain – what are the right tools for achieving similar impact from the workforce?

WORKFORCE MANAGEMENT TECHNOLOGIES THAT BOOST MANUFACTURING LABOR PRODUCTIVITY

Having already automated many aspects of production and supply chain operations, many manufacturers are now recognizing that the next frontier for high performance may be their workforce. Unfortunately, most organizations, even the largest ones, are just in the initial stages of strategic workforce management investment. While most companies have automated their core HR functions, many are just beginning to invest in strategic applications in areas such as talent acquisition, scheduling, absence management, and workforce analytics that will become must-have technologies to deal with the challenge of zero-tolerance market demands.

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these technologies requires attention to proper job descriptions, employee evaluation and compensation strategies, commitment to education budgets, and continuous measurement of results at the executive level. These technologies also often require corporate soul searching to determine how to balance the critical and delicate relationship between humans as valuable corporate resources and resources who are human beings working for the corporation.

Talent Acquisition – Hiring the wrong candidate wastes a company's time and money and it is even more harmful to the unfortunate candidate. Effective talent acquisition programs supplemented by automated sourcing, screening, assessment, and selection tools can result in a reduced time to hire of 50 percent to 80 percent, freeing up supervisory and human resource staff for employee development and other tasks. Hiring "better fit" candidates decreases employee turnover from 10 percent to 60 percent, thereby reducing the cost of hiring, but also significantly reducing the time and cost of employee hire-to-productivity. And, of course, when employees are well suited to jobs they like, they often produce better results and they can positively influence co-workers, suppliers and customers.

Time and Attendance – A mainstay in manufacturing, time and attendance management tools and systems provide the ability to set up and track adherence to policies for attendance and related elements like tardiness, discipline, and overtime, and, in many instances, calculate the related rates of payment and benefit accruals. Large, dynamic manufacturing environments face challenges in adhering to work and pay practices mandated by statutory legislation such as the U.S. Fair Labor Standards Act (FLSA), varying state requirements, as well as contractual work and pay requirements specified in bargaining unit agreements. Various studies have shown that use of automated timekeeping and attendance systems leads to a significant decrease in employee absenteeism, thereby increasing productivity. Additionally, sophisticated timekeeping systems that can track labor hours to a granular product or production step level are critical to product line cost accounting and the ability to specifically track cost of goods sold for product pricing purposes.

Absence Management – to track adherence to leave policies for vacation, disability, and regulated benefits like the U.S. Family Medical Leave Act (FMLA). Large manufacturing organizations that fail to effectively track, manage and control individual and group abuses in attendance and leaves of absence pay a huge price in decreased productive capacity and the inability to meet production and customer requirements within specified timelines at the

least cost. The degree of "employee downtime" can also result in a significant increase in the cost of labor if overtime or temporary labor is required to fill shifts for absent employees. Additionally, large manufacturing organizations with a high frequency of FMLA, worker's compensation, and short- and long-term disability, face significant challenges in complying with all aspects of FMLA and the Americans with Disability Act (ADA). Interpreting and properly complying with all of the overlapping eligibility, certification, notification, documentation, and return-to-work requirements is almost impossible without automated tools for supervisors, managers and HR.

Labor Forecasting – uses historical data inputs to predict staffing level requirements. Business factors such as anticipated sales levels or events, tasks required to support sales promotions, equipment maintenance or changeovers, training hours, or other labor-consuming factors are taken into account. More advanced applications can forecast down to very granular intervals, such as 15-minute time increments, or accommodate specific skills required for optimal coverage. This is especially important with dynamic and seasonal products that do not lend themselves to steady state manufacturing.

Training and Certification – A spreadsheet that lists all the training courses employees have completed and the certifications they have earned is just not enough. E-learning applications have progressed from their beginnings as humble remote training packages and are now far more flexible, handling all types of content and communication. Manufacturers are starting to see considerable return on investment from using these platforms for everything from project team collaboration and company meetings to managing merger and acquisition activities – along with traditional instructor-led training. Tracking of certifications and licenses is also critical to maintaining and ensuring adequate inventories of employees who are qualified to perform specific tasks or use specific pieces of equipment.

Scheduling and Optimization – Since markets move so fast, it is rare for manufacturers to have the time to create manual or spreadsheet-driven work schedules. They must be able to create schedules automatically based on business drivers such as sales projections and product availability, and also based on employee constraints such as overtime availability. More advanced automated applications can optimize the allocation of labor resources, based on employee skills, attributes, and preferences, across locations, times and tasks – something very important in a globally deployed workforce. This allows organizations to meet dynamically changing capacity requirements on short notice, with the right number of the right employees at the optimum cost.

The growth of flexible workforces is a factor manufacturers must reckon with: the expansion of temporary employment probably accounted for between 0.5 million and 1 million of the 2.2 million reduction in manufacturing jobs between 1979 and 2000. (U.S. Congressional Budget Office Economic and Budget Issue Brief – February 2004) As manufacturing jobs have changed, more employees are working from home than ever before, and many

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more are working from remote offices, sometimes in other geographic regions. When people with specialized skills work flexible hours in out-of-sight, out-of-mind remote locations, it becomes very important to plan for their work and productivity.

Task Management – In many manufacturing industries such as medical equipment, pharma, chemical and atomic energy, task certification and validation of completion are required for certain activities, making them a must for approved manufacturing processes. Task management applications create the ability to assign specific employees to specific activities with specific completion deadlines for execution. These systems track the details as employees register task accomplishment, help ensure process compliance and on-time completion, and create an audit trail.

Analytics – Understanding how operational excellence contributes to increased customer satisfaction and, ultimately, better top and bottom-line financial performance is a hot button issue for most manufacturing companies. Once they are confident their supply chain improvements have reached the levels expected, executives want to assess, diagnose, and improve the workforce performance. As a result, companies are implementing dashboards that measure individual, group and cross functional performance, and evaluate the organization's performance against corporate achievements. For example, when analytics can automatically correlate a volume shortfall, or perhaps a project delay, with sick time and identification of additional key employees needed, management can concentrate on what to do next instead of spending valuable time trying to determine if and why it will happen.

Following the analysis of operational performance, manufacturers strive for better ways to manage individual performance. By using performance and incentive management tools in conjunction with compensation systems, companies are striving to achieve true pay-for-performance. They are driving business objectives down to the individual employee by aligning individual employee goals with corporate goals and providing achievement incentives. Once the goals are set, managers can measure achievements through performance appraisals.

Analytics also helps manufacturers measure the company's success in meeting its human resource or corporate cultural goals. Do managers keep job descriptions current? Do employees know how they are being measured? And, are thoughtful performance appraisals delivered on time? Is training meted out according to policy? Analytics can force executives to decide which cultural goals are so serious that they *will* be measured and reported on regularly and then provide the results to help them move the organization toward the goals.

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SUMMARY

Today, most manufacturers have the most basic transaction-related HR functions and workforce management processes under control and are moving beyond core issues to address pain points. Some are just beginning to consider a strategic approach to workforce optimization.

With today's market focus on innovation and individual productivity, human capital is one of the most important assets to leverage for sustained business growth.

This does not, however, mean just automating the blocking and tackling of finding, scheduling and retaining workers. It also means optimizing the workforce once you have it in place. The dynamics of global manufacturing demand that companies anticipate and respond to their customers' needs, and to the fluctuations in the greater market, if they are to ensure optimal operating results. To do so suggests that workforce optimization, including use of automated workforce management tools, is very likely the next most important technology frontier for manufacturers.

ABOUT THE AUTHOR



David Caruso (dj.caruso@comcast.net) is the founder and principal of David Caruso & Associates, a consulting firm specializing in manufacturing, supply chain and technology strategies. Caruso brings over 30 years of industry experience to these topics. With a thorough understanding of global trends, current business issues, and best practices, he assists clients in analyzing the business value of IT and helping manufacturers achieve effective use of technology to support the profitable growth of their business. Prior to starting his own firm, he was senior vice president and director of Research at AMR Research where his specialty was ROI and business case development for technology investment. He is a frequent speaker at industry events and maintains a high profile with columns, quotes, and bylined articles in publications such as *Manufacturing Business Technology*, *The Wall Street Journal*, *Fortune* and *Business Week*.