

# Confusing Job Shops with Mass Production

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**Speed to Market readers know** that a constant theme in our books, workshops, articles, and the STM Newsletter are the differences between lean manufacturing in job shops vs. mass production businesses. The differences between these two environments are so numerous, and the gap so wide that it was necessary for us to create a special type of lean for job shops. We call this *Speed to Market™*, and it's based on the theory of delays where cutting lead time is used as a strategy for performance and profit improvement.

We don't go our of our way to comment on other articles or writers who don't understand the differences between mass production and job shops. But when something comes across our desks that is so off the mark when it comes to lean in job shops that it cannot be ignored, we have to speak out. A case in point is the article, *Lean in the Job Shop: Building a Lean World-Class Enterprise—A Question of Leadership* by David Dixon published in the March issue of *Fabricating and Metalworking Magazine*.

Mr. Dixon begins with a definition of a "world class company" as "globally competitive, capable of defending their markets against foreign competition, while successfully penetrating foreign markets."

Does this sound like a job shop to you? Sounds more like a company with products to sell. This definition of a world class company is based on the stereotypical idea of a manufacturing company with products, not a job shop which is a service business.

While many shops are finding they are ill-equipped to compete successfully in a global market as their customers chase price across the globe, this does not mean they should be thinking like a multi-national company. Rather, they should be thinking in terms of their competitive advantages. They must plan strategically; develop their organizational capabilities; improve their processes; market, service and price properly; hire, train, and retain the best talent; keep up with technology; commit to continuous improvement; and aggressively partner with both customers and suppliers so they become the supplier of choice among their competitors.<sup>1</sup>

The author goes on to identify nine performance metrics that define a world class company.

- 95+percent on-time delivery to promised date
- Total order throughput time 50% less than the industry average
- Superb quality at a cost of 50 percent below the industry average
- Productivity in dollars per employee per year 30-50 percent above industry average
- Inventory turnover 20-50 times a year
- Operating profits 50-100 percent above industry average
- Employee turnover rates less than 10 percent
- An accident-free workplace
- Engaging every employee in cost improvement activities every day.

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<sup>1</sup> Thanks to Bob Savitzky, President, R.S. Precision Industries, Inc. for this succinct guidance.

## Let's take a look at these in turn...

- **95+percent on-time delivery to promised date** We can't argue with this. It's extremely important for a job shop to be reliable and to ship on time. In fact, a primary emphasis of Speed to Market is eliminating delays in the entire quotes to cash process to reduce missed ship dates and reduce longer than necessary lead times.
- **Total order throughput time 50% less than the industry average** Again, a primary objective in Speed to Market is to cut lead time. This should be an ongoing focus in any make-to-order business. If you compare your performance to your competitors, can you beat them by half? Perhaps, but it's important to recognize there are a number of factors that come into play, including demand and capacity management, that will shorten or extend lead times under different conditions. It's doubtful there is any industry average to which to compare your performance.
- **Superb quality at a cost of 50 percent below the industry average** This statement is meaningless. There is no absolute standard of quality, so it's not possible to have a metric that would show 50 percent less than an industry average. In fact, the level of quality is often specified in the RFQ, and many shops find it difficult not to go beyond what a customer is willing to pay because pride of craftsmanship takes over. For example, visible tool marks may be perfectly acceptable, or chamfering edges that don't need to be chamfered only increases the cost without any appreciable quality benefit.
- **Productivity in dollars per employee per year 30-50 percent above industry average** This level of performance improvement assumes a shop has done nothing to improve in the past which is not likely. I think the author would be hard pressed to find a shop in today's competitive environment that has this much room for improvement.

**Note:** We like to use dollars shipped per hour worked which is a more accurate measure of productivity, and one that can be monitored weekly for changes and trends.

- **Inventory turnover 20-50 times a year** This is ridiculous. Everybody knows that job shops carry no finished goods inventories and raw materials are generally ordered on a job-by-job basis. This so-called metric is another pronouncement with no basis in reality.
- **Operating profits 50-100 percent above industry average** After all the belt tightening that has been going on in the job shop world, to even suggest that operating profits could be doubled with lean techniques is pretentious and insulting.
- **Employee turnover rates less than 10 percent** Where does 10 percent come from? Who sets this standard? The feast and famine nature of demand in a job shop can make it very difficult to maintain a stable work force. Sometimes, during low demand periods, it's necessary to lay off employees. Generally, the objective is to keep the most skilled and experienced people while laying off apprentices and those less experienced.
- **An accident-free workplace** An admirable goal.
- **Engaging every employee in cost improvement activities every day.** Great idea. The problem is that work demands generally take precedence over additional activities.

It's clear that most of these so-called metrics are either meaningless clichés, hollow abstractions, or have nothing to do with job shops. This is the kind of misinformation that is bandied about by so-called "lean experts" who have learned the tools and techniques, but have little or no understanding of the manufacturing context within which they are applied. It's the old story of having a hammer so everything looks like a nail. We will continue to fight against this mindless application of lean manufacturing as we have from the beginning.

**Implementation Failures:** In the final section of this article, "Causes of Failure," the author identifies three reasons for the failure of a lean implementation.

The first is lack of persistence (we would have to agree). This is a common problem in large organizations that go through "fad of the month" programs where short-term-thinking managers are always on the lookout for the next big thing that will deliver huge results in no time making them look like heroes, and providing fodder for their resumes. Dream on.

The next is "the absence of a reasonably stable, educable work force." Again, the author fails to recognize differences in the workforce in a mass production environment with its repetitive tasks and semi-skilled labor compared to a job shop. People who work in job shops are generally multi-skilled because the work requires it. They know how to read prints, and gauges. They may have certification in tool making, or machining, or welding, or some other trade from a community college or specialized program. They likely have done an apprenticeship. They have to use their heads to figure things out, and are far from being uneducable.

And the "third threat to successful implementation is the phenomenon we call resistance to change." In our opinion, resistance to change is often used as a red herring. The idea that people will refuse to change their work practices even when a better, easier, less expensive way is discovered is not true in our experience. What is true, is that too little time is spent working with people to get their ideas for improvement and then building on these as a foundation. Often people are treated as if they don't know anything, and are marginalized in the change process. When this happens, of course there will be resistance to change.

On a recent tour of a Mazak plant in Florence, Kentucky where they make CNC machine tools, I asked a supervisor what was the difference between working for an American company and Mazak, a Japanese company. His simple statement: "They listen to me here." If you are not listening to your employees and involving them in a meaningful way in a change and improvement process, of course you will have resistance. Don't blame the employees. Blame your lack of change leadership skills.

We might add another reason for implementation failures Mr. Dixon seems to have missed. An inappropriate application of lean techniques.

**End Note:** We are often asked if we are anti-lean, or if we believe that lean is not applicable to job shops. This is certainly not the case given Vincent Bozzone's book, *Speed to Market: Lean Manufacturing for Job Shops*, so we find these types of comments more than curious. Lean thinking and some lean techniques can be useful in a job shop. What we object to is the application of these principles without understanding the context within which they are being applied. The "one size fits all" mentality of many lean advocates can create major problems. When we hear people make outrageous claims for improvement and talk about "tact time" and "inventory turns" in a job shop environment, we know immediately they don't know what they are talking about.

When lean or any other performance improvement methodology (Six Sigma, TQM, TOC, etc.) is applied without understanding how the business works, the effectiveness of the methodology is severely compromised, and often does more harm than good. Employees get turned off when they are required to do things that make no sense, and this can poison the well for future performance improvement efforts. When the people in an organization become skeptical of anything that promises to improve performance and profitability, continuous improvement is undermined and this does not bode well for the future of the enterprise.

It seems that when any performance improvement technology becomes popular, it becomes inflexible and dogmatic. There is only “one right way”, and lean disciples scramble to be bathed in the waters of the new religion. Whether it connects with the organization or not is immaterial. Lean exists as a entity unto itself in the minds of its adherents.

Our counter argument is simple. Start by understanding the business and organization; then determine how to use lean technology to improve performance and profitability. When you start with the technology and seek to impose it on a business without the necessary understanding, you put the cart before the horse and do your client a great disservice. This is what we mean by our slogan, *Client Driven Solutions*. The needs of the business drive the solution strategy, not vice versa.