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Huco's Lean Transformation Yields Improvements



An Altra Industrial Motion Company

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As the speed of change accelerates, more companies are looking to lean principles to transform the productivity, quality and responsiveness of their operations. To achieve its full potential, however, the approach requires changes to every aspect of an organization and its culture, from sales processes to maintenance.

In the decades since Toyota emerged as one of the world's leading manufacturing organizations, there has been growing interest in the approach it pioneered. Lean principles, the basis of the Toyota production system, are sometimes – incorrectly – seen as a way of organizing manufacturing operations. In fact, lean is much more fundamental, applicable to any process within a business, from the back office to the factory floor.

At its heart, lean is about applying standards to business processes, to ensure the customers receive what they want, consistently, first time, every time. By continually examining, experimenting and improving those standard processes, lean companies eliminate waste, reduce errors and increase their ability to respond to customer demand. Organizations don't develop those capabilities overnight, however. Lean is a journey, involving deep and far-reaching culture change.

At Huco, a leading manufacturer of precision couplings, the journey to lean began in earnest a decade ago when it became part of Altra Industrial Motion, a leading global supplier of power transmission components. Over many years, Altra has developed and refined its own approach – the Altra Business System – adapting proven lean principles to the specific needs of the two dozen companies in its portfolio.

The first steps of that journey were taken in Huco's manufacturing operations, explains Operations Director Liam Noone. "Changing long-established processes and culture isn't easy, and it isn't something you can do sitting behind a desk. It is essential that everyone involved can see, feel and experience the benefits of the lean approach first hand," he says. "We had to take a 'go and see' approach, spending time talking to our operators, asking them about the problems and challenges they faced every day. Then we looked at how lean principles could address those issues."

Some of the most important activities in lean are deceptively simple. Take the 5S approach for example: sort, set, shine, standardize, sustain. 5S is much more than workplace housekeeping. A properly organized workplace enables operators to do their jobs effectively, without wasting time searching for tools or materials, or working around obstructions. Even more importantly, organization brings clarity, allowing everyone to see problems and improvement opportunities.

At Huco, acceptance of the potential of lean came early, says Noone. "We set up a model of good practice in one area of our Hertford plant, establishing a cellular approach to manufacturing,



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removing excess inventory and streamlining operations. The advantages of the new approach were so obvious to everyone in the plant that there was an immediate appetite to adopt it elsewhere.”

Today, the company’s manufacturing operations have been transformed. It has established dedicated production cells for each product group. The majority of products flow through manufacturing processes one by one, rather than in batches. Production teams run those operations using standardized processes with team leaders trained in problem solving and improvement techniques. Management boards at each cell record problems and improvement opportunities, and the company uses Pareto analysis to focus its on-going improvement efforts on the most important issues first.

“These changes have produced significant productivity improvements,” says Noone, “allowing operators from some lines to be reallocated to other activities and easing the challenge of finding new, skilled production personnel as older members of staff retire.”

For Huco’s customers, the impact of the change has been highly significant too. Lead times have fallen from more than four weeks to less than two days. Quality levels have risen dramatically and on-time, in-full delivery performance is now higher than 97 percent. In some product lines, customers can now order in any quantity they want with guaranteed delivery within three days.

This kind of performance matters. If customers have the confidence they can get the products they need, when they need them and at the right quality, they can hold smaller inventories without fear of downtime due to missing parts. That means less cost, less risk and greater responsiveness in their operations.

Customers have seized that opportunity, says Noone, changing their purchasing habits to order smaller quantities more regularly. But that change in purchasing behavior makes operational flexibility even more important. “We have done a lot of work to reduce changeover times between product lines,” he explains. “On our bellows coupling line, for example, it used to take 30 minutes to switch between product types. We reduced that to 15 minutes, then to 10. Now a changeover takes 58 seconds, which means we can manufacture in any batch size we want.”

The new flexibility and responsiveness has called for changes right across the organization, as sales and order management processes have had to adapt to cope with “a far higher number of transactions.”

The company has changed its relationships with suppliers, too, in order to streamline upstream processes as well as internal ones. Take heat treatment for example. In the past, parts might have spent a week or more at an external supplier receiving heat treatment. Now, says Noone, the supplier will collect a batch of parts at 8:30am and return them 24 hours later.



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Despite the huge strides Huco has already made, there is still more to do. “An outsider looking at our operations might assume we are 99 percent of the way there,” says Noone, “but we think we’re only 30 or 40 percent into the journey.”

Among the company’s on-going efforts to further improve its performance is increased attention to maintenance activities. “A large number of our activities involve highly automated ‘lights out’ machining, which means the performance and reliability of our machines is of paramount importance,” says Noone. “As machines age, their performance changes and so does their ability to hold the required tolerances. We realized that we need to know our machines better than their own manufacturers do.”

To gain that knowledge, the company is introducing a Total Productive Maintenance (TPM) approach across its operations. From the start, this has been a highly informative process.

“We ran a TPM event on a single machine, and the amount we were able to take away from that session was mind blowing,” says Noone. “Changes to the machine included removal of redundant parts, the installation of new inspection panels and a number of measures to reduce the ingress of swarf and improve coolant and lubricant integrity.

“Combined with new operating and maintenance practices, the overall effectiveness of the machine has risen from 62 percent to more than 95 percent. By changing our maintenance approach, we’ve also been able to add years to the life of a machine that might otherwise have been scrapped and replaced. Huco is now rolling out the same techniques across its full range of production equipment.”

Part of the company’s TPM approach is aimed at relieving operators of the need to disrupt their work to attend to machine breakdowns or maintenance activities. “The responsibility for routine maintenance should fall to the team leader,” Noone explains. “We want a situation where the operator can concentrate on standard work and, if something goes wrong, they use an andon cord to alert the team leader to the problem.”

Elsewhere, the company continues to adopt practices developed and refined by its parent group. The latest of these is a certification system created as part of the Altra Business System. “There are two levels of certification – silver and gold – and they can be applied to individual manufacturing cells or entire value streams,” explains Noone.

To achieve certification, the cell or line must demonstrate that it has achieved 12 specific objectives, including proven problem-solving skills, a suitably qualified and experienced team leader and a support network of maintenance and other personnel. Huco’s first cell-level certifications are now taking place, and the company is moving toward certification of full value streams for key products in the near future.

“Certification is another important step,” concludes Noone. “But in the lean culture of never-ending continuous improvement, there is always much that can be done. Everyone in the Altra group knows the ‘True North’, the direction the company is headed. We are travelling day and night, but the journey is never done.”