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KEEPING IT LEAN



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The origins of lean manufacturing date back more than a century, but the techniques, honed in Japan, remain relevant to this day and offer valuable lessons to manufacturers around the world.

INTERVIEW WITH BEN SPARROW

Ben Sparrow is a co-founder and Director of Shinka Management. Members of Walter Scott's Research team joined Shinka Management's Lean Japan Tour and undertook its Kaizen Japan Training.

It was the early 20th century when Sakichi Toyoda, who invented the Toyoda power loom, began thinking seriously about the link between efficiency and productivity. He believed that: “The ideal conditions for making things are created when machines, facilities, and people work together to add value without generating any waste.”

This was the forerunner of lean manufacturing, a philosophy developed before and after the second world war, as Toyoda’s textile machinery business evolved into the Toyota Motor Company. Centred on the belief that manufacturing excellence involves “kaizen” – continuous improvement in quality, continuous improvement in efficiency and continuous reduction in lead times - lean manufacturing is not just a business strategy, it is a long-term mind set, almost a way of life.

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And, although Toyota is most widely associated with the concept, lean manufacturing has been adopted across Japan, contributing to the creation of some of the most effective manufacturers in the world.

Crucially, however, they are still learning, honing techniques and practices that can make them better, more productive and more profitable than before. It is this dedication which sets Japanese businesses apart from their peers and makes them such invaluable teachers in the art of being lean. Walter Scott has long admired the

Japanese approach to manufacturing. The opportunity recently arose to see lean manufacturing in action today. Client Investment Manager Murdo MacLean and Investment Analyst Matthew Gerlach undertook an intensive week-long trip, including factory tours and classroom learning across Japan’s industrial heartland.

“There are companies in Japan with decades of experience and know-how. Overseas companies are not quite at that level yet, not least because these concepts cannot be learned overnight. They take time to understand and to embed,” says Shinka co-founder Ben Sparrow.

“And Japanese companies have learned by making mistakes. So, there are also lots of lessons to be taken away from what has happened over the years in Japan: why lean manufacturing has taken a particular direction. It is because of their experience of what has worked and what hasn’t.”

In many cases, too, lean manufacturing on its home territory confounds expectations, because, even though the effects can be far-reaching, day-to-day implementation is often quite prosaic.

“A lot of people come to Japan expecting a shop floor to be like a hospital – pristine, sparkling, very automated, nothing out of place. But what they see, particularly on the final assembly line, is a lot of labour input. It is not necessarily a sparkling environment. And some of the changes that have been implemented are not expensive improvement ideas,” Sparrow explains.

Walter Scott’s visit provided tangible evidence of this.

“The highlight of our trip was a visit to auto components group Suzaki Industries,” says MacLean. “It’s a relatively small enterprise, employing around 25 people, and the factory floor was intense. The presses clattered noisily, the smell of hot metal was

all around, it was extremely warm and the machinery looked ugly and outdated. Importantly, however, everything worked and was highly efficient. This was an important lesson for us. A sparkling factory floor does not equate to efficiency: capital should be productive, not pretty.”

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In recent years, there have been suggestions that lean manufacturing has run its course, overtaken by Industry 4.0 – the Fourth Industrial Revolution, where smart technology is integrated into manufacturing processes – and the increasing use of artificial intelligence (AI). However, evidence on the ground would suggest otherwise.

“Companies cannot jump straight to Industry 4.0 and expect everything to work beautifully. You need a strong foundation and real know-how around lean manufacturing – then you can look at Industry 4.0, AI or robotics as a way to enhance what you are already doing,” says Sparrow.

In some regards, AI can enhance the lean approach. Lean manufacturing is, essentially, focused on problem-solving - how to become more profitable by identifying obstacles to efficiency and overcoming them. And an important aspect of this involves finding the root cause of a problem in order to solve it more effectively.

“The tools of Industry 4.0, and particularly the Internet of Things and AI, should help companies to identify when there is a problem more quickly, but also help them get down to the root cause and take action at that level more quickly,” says Sparrow.

Intriguingly, too, some Japanese companies have found that automation has limitations, particularly when viewed through a lean manufacturing lens.

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“A few years ago, Mazda began to introduce more and more robots into a traditionally operator-centric process in its final assembly line. It thought it was reducing costs, but found that the approach really affected its flexibility. If the market moves, for instance, and a company needs to produce half the vehicles it needed to 12 months previously, the robots will sit there as a large, fixed cost. With humans, you can adjust the number of operators that are put into a line to make a car, depending on the volume,” Sparrow explains.

Taking the concept of kaizen to its logical conclusion, therefore, Mazda reversed that strategy and reverted to its old ways. Meanwhile, Toyota, the grandfather of lean,

has never introduced automation into the final assembly line. For Walter Scott, this has important ramifications.

“Our Japanese tour highlighted that there is no end to kaizen – you can always bring it to bear, whether with people or robots,” says Gerlach.

During the week-long trip, Gerlach and MacLean witnessed the full extent of lean manufacturing in action, from highly conceptual to deeply physical. Isuzu Corporation, for example, manufactures 1.1 million tonnes of steel annually and produces 90,000 products.

“We joined the management of Isuzu Tokai for their Monday morning meeting. In between reviewing their targets and touring the plant, we joined in the factory workers’ exercises – another form of kaizen,” says MacLean.

In some quarters, lean manufacturing has been afforded almost mythical status. At its root, however, the concept of kaizen is quite simple. It is its application that is more challenging – and more fundamental.

As Gerlach explains: “Japanese manufacturers operate on the basis

that if there is no annual cost reduction, then there is no gain. This creates constant pressure to find efficiencies throughout the supply chain.”

As such, improvement is continuous: companies can never say they are good enough. That is the essence of lean manufacturing, both in Japan and overseas. And that is why there is always room for growth and change – always more to learn.

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