

# Lean enterprise in a low volume jobbing environment



BY TIM MCLEAN

It is surprising how few advanced manufacturing companies in Australia have made any progress towards adopting lean principles. This may be because of a mistaken perception that the lean approach (developed by Toyota for building cars) is best suited to mass production and will not work in low volume jobbing manufacture. In our experience at TXM, lean thinking can provide considerable benefits to low volume jobbing operations, however the tools and techniques of lean need to be adapted to suit this environment.

## Understand your product mix

The basic principal of jobbing is that no two jobs are ever the same. However this is very rarely the case. Most 'jobbing' operations will earn a substantial amount of their revenue from "repeat" work or from "families" of jobs where there are substantial similarities between parts. Even in situations where the final products are completely different and very rarely repeated (e.g. injection moulding tooling) the production steps involved to produce each new job are often similar or the same. Rank your products or product families in order of their importance to your business and focus on the most important first.

## Map the key value streams

Once you have selected a key product family, then use value stream mapping to identify the waste in the production of those products. Develop a future state map that to reduce waste and lead time. The future state map then becomes your roadmap for your improvement efforts. It will direct your

In recent years the principles of Lean Enterprise have been adopted across Australia in industries ranging from biscuit manufacture to healthcare. The lean approach is proven to reduce lead time, improve quality, reduce working capital and lower costs.

efforts into the areas that will provide the most rapid returns for your business. The key benefit of the value stream mapping process is reducing lead time. This is vital in a jobbing environment as the less time jobs spend in your shop, the fewer jobs you have to manage in progress, the less cash you have tied up in work in progress and the better service you will offer your customers.

## Consider engineering processes

In advanced manufacturing it is common that engineering and design work will consume as much time and resource as manufacturing. Therefore consider including engineering of the part or tool in the value stream mapping process. If you can get Engineering running like a production process then you may take some pressure off your production area.

## Level the workload

Level production means that each step in the production process produces exactly at the rate of customer demand. This is usually measured in seconds per unit (Takt time). However in jobbing shops the time taken to manufacture a part may differ enormously from one part to another. Therefore it is necessary to level the work content, not necessarily the number of units produced.

## Establish lean foundations

In parallel with starting the implementation of your future state plan we recommend that you start putting in place some the key foundations that will make your lean transformation sustainable. The first of these is usually 5S which is a system for improving organisation and housekeeping in the workplace. 5S will lead to an immediate improvement in the appearance of the workplace,


but it will also improve productivity by reducing "looking time" – time spent looking for tools, parts and materials. Other key lean foundation tools include structured problem solving to identify and solve problems on the shop floor and visual management to track performance and improvement progress at the workplace.

## Key lean techniques

The correct tools and techniques to use in your business will be selected by value stream mapping process, however typical approaches that work in a jobbing environment include:

- Set up time reduction: Set up time is the key driver of batch size.
- Cellular manufacture: Setting up work cells for key products can dramatically reduce lead times.
- First in first out: Where it is not possible to achieve one piece flow, a first in first out lane is a powerful tool to control the flow of work between product steps.

## Getting Started

There is plenty of help to get started on lean enterprise. Jim Womack and Dan Jones' book "Lean Thinking" will introduce you to the principles. Try to get along on a plant visit one of the automotive component manufacturers see lean in action. The federal government's Enterprise Connect program offers generous subsidies for companies to engage external help to implement Lean Enterprise or make other business improvements. State governments also have programs that offer subsidies for this purpose. With increasing customer demands, the time is now to "get lean" in your business. 

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