

Dear Lean Community Member,

## **Is Lean So Hard?**

We recently had a visit from the Managing Director of a small engineering firm seeking help on his lean journey. His first port of call was his local university, one of the most prestigious in the country. They sent two postgraduate students to show him how to draw a Value Stream Map. However they stumbled when it came to deciding what to do next. I see this all the time – firms with Current State maps but no Future State map and no Action Plan to implement it. Yet this is one of the key steps in going lean.

By chance I met these same postgraduate students at the Manufacturer Live event in Telford in September. They struck me as smart students with a good knowledge of the lean tools. Yet they confessed they did not know how to construct a Future State map for this plant, despite having read the right books. This set me thinking. With the plethora of advice on lean and all the workshops on value stream mapping, why is it so hard to make this essential step, even for the smartest people? What is holding you back?

There are of course some obvious reasons. If no one is given responsibility for straightening out the value stream as it crosses departments then no one is really going to bother to draw a Future State map, let alone implement it. If you do not have support from top management then even the best intentioned lean initiatives are going to run into the sand. Also if your first map reveals so much low hanging fruit then it is not surprising if people go after that, rather than do the more heavy lifting in changing the way things work.

Another common reason is that employees recognise the need to move from making large batches to flowing products through the plant. But they are frustrated in doing so by the lack of basic stability in their operations and in their equipment. Which is why so much attention needs to be devoted to creating standard operations, improving machine availability, reducing changeover times, improving bottleneck processes, etc.

But even if this is a long road there is a danger of pursuing this work without a clear plan of march. You can spend a lot of time creating islands of stability that are hard to sustain unless they are tightly linked. A Lean Value Stream Plan from a Future State map is the way to leverage

the synergy between Six Sigma, TPM and Lean and to create flow that lasts.

Another stumbling block seems to be the concepts of takt time and the pacemaker process – how to establish the appropriate rhythm for the value stream and where to trigger it. A really helpful insight is to recognise that you are almost certainly making several different types of products with quite different demand characteristics that require different and not common solutions. People often think lean is about building everything to order – whereas this is not always the case – in many cases it is about rapidly replenishing stock the customer has just purchased.

If you start by analysing your product families by process route and by frequency of demand and you will discover a few high volume products that account for the bulk of your output. These should be made-to-stock with the customer pulling from a pacemaker at the end of the value stream. At the other end of the scale you may well have a tail of low volume products, accounting for a small fraction of your output that have to be made-to-order from a pacemaker at the beginning of the value stream. Map these value streams separately and treat them as two quite separate projects. Over time it may well be possible to combine these two into a mixed-model pull system, but probably not initially.

The final stumbling block is hidden in your information flow. Where stability is the foundation for creating flow, heijunka or levelling is the foundation for creating pull. Without levelling you are fighting an uphill battle against constantly changing schedules and fire-fighting. We have been brainwashed to think that the only way round this problem is by holding stocks and better IT systems that can improve the forecasts on which our schedules are built. In fact there is a lot we can do to smooth the order signal from our customers. However constantly changing schedules are in fact a symptom of a deeper problem – the batch logic in our scheduling systems. I will return to this topic in a future e-letter.

You may well have encountered different obstacles in deciding what your Future State map should look like. Others of you might have created your Future State maps but have struggled to implement them. I would be interested to hear about both problems, and how you think they can be overcome. Difficult questions are rich food for Lean Thinkers to ponder upon. If we can't crack this one then we are not going to make much progress with lean.

Yours sincerely

Professor Daniel T Jones  
Chairman, Lean Enterprise Academy