

Now we are Lean - why have ERP systems?

While many of the promised benefits of ERP systems have not materialised, they are still useful tools to enable lean manufacturers to make longer range decisions about their operations. Tim Mclean reports.*

AS a former plant manager and manufacturing and supply chain consultant, one issue I find that troubles a lot of manufacturers is deciding the best way to plan their production to meet their customers' needs.

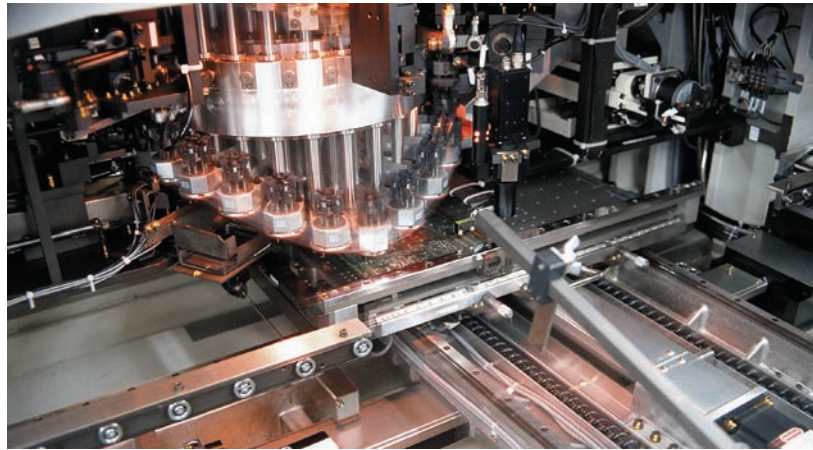
Through the 1990s a large number of companies invested heavily in ERP systems to address this issue. These systems had an aim of improving customer service, reducing inventory, reducing cost and providing better visibility of business performance.

In the last five years, however, a new approach has taken over in many industries. Lean manufacturing, based on the Toyota Production system, is focused on using simple, visual, shop floor level tools such as Kanban to control the flow of production. Lean emphasises the relentless elimination of waste in order to reduce lead time, improve flexibility and remove the need for forecasting and complex long range planning completely...well almost.

To listen to the proponents of either philosophy is often like listening to religious fundamentalists, so confident are they of the absolute rightness of their philosophy and so dismissive are they of any alternative. The reality, of course, is somewhat more complex. All the great lean pioneering companies still run ERP systems and many use sophisticated forecasting. So how do they reconcile these supposedly irreconcilable approaches?

To understand why, I like to make an analogy with weather forecasting. Lets say it is October and we are trying to forecast the weather in January. There is some information we would know. January is likely to be hotter and dryer than October.

This is useful information as it might affect some long range decisions like



ERP vs Lean – the reality is both have essential roles to play.

what clothes we buy and when we plan to take our holidays. But what about the weather in Melbourne on January 26th? Even the bravest forecaster would hesitate to give anything more than a broad range of outcomes for the weather on a specific day. Even if we narrowed the time horizon to even a fortnight, providing an accurate forecast down to the day is almost impossible.

The point here is that the value of forecasts depends on the time horizon and the level of detail that you attempt to forecast.

Using a forecast of limited accuracy to decide via an ERP system what products to make on a given week or, worse a given day, weeks or months in advance, is likely to mean that you will be making the wrong product in the wrong quantities at the wrong time to meet your customers needs.

The ERP experts would then argue that to overcome this you need fixed and firm planning horizons and that you need to educate your customers in the need to forecast and then stick to their forecast.

But what if your customers are not prepared to give you this certainty or your competitors don't require it? You may find yourself at a competitive disadvantage.

The Lean approach

The lean "level pull" approach on the other hand effectively dispenses with forecasts.

Production and procurement only occurs when it is triggered by downstream demand (through, for example, a Kanban signal). Production rates are "leveled" throughout the operation at the average rate of customer demand, or Takt time. Inventory buffers or "supermarkets," and "every part every interval" scheduling are used to dampen out variations in demand and supply to ensure that each process is synchronized with the next.

This approach has had impressive results in many industries, particularly in the car industry. But what if your product is seasonal and summer demand is 30% higher than winter, or if your market is heavily promotion driven?

The reality is, there is a place for both

approaches in most businesses. Trying to manage the day to day, week to week and thrust of meeting customer orders using a forecast driven ERP is likely to be difficult, overhead intensive and tend to increase the level of variability in the supply chain (the Bullwhip or Forrester Effect).

Unless you have extremely well trained customers it is likely to lead to longer lead times, higher inventory and poorer service than the lean alternative. However there is still a place for forecasting at the monthly level and for the Sales and Operations Planning (S&OP) process.

This process enables you to reconcile your forward demand including seasonality, promotions and new products with your business' capacity to produce (your rough cut capacity plan), enabling productive resources (materials, people and machines) to be planned with sufficient lead time to meet major demand changes.

The monthly forecast can also be used to generate a forecast for suppliers to enable them to plan their production (particularly if they haven't seen the lean "light" yet) and ensure that they are able to meet your short term "Kanban" requirements when they come.

To summarise - lean tools are highly effective at enabling manufacturers to meet needs of their demanding market-places while driving inventory and cost out of their businesses. However, long term forward planning based on a monthly high level forecast, a good capacity model and an effective sales and operations planning process is necessary to ensure that the lean enterprise is ready to cope with long term changes in market demand.

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