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Agility - The Future of Manufacturing in High Cost Economies

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By Tim McLean

Modern consumers want choice. What this means for manufacturers is more models, shorter life cycles and greater customisation. The traditional mass production model where everyone drives a black model T Ford (or a Silver Toyota Camry) is disappearing. Most manufacturers in developed economies can not compete on cost for standardized mass produced products. But when lot sizes and product life reduce and the number of variants increase, the challenges of an extended international supply chain multiply and local suppliers come in to their own. That is, if the local supplier is up to the challenge of managing a complex supply chain.

Lean focuses on reducing lead time. This has been effective in reducing costs and working capital for traditional manufacturers. However reduced lead time also means increased agility and a greater ability to respond to customer needs. Reduced inventory and shorter turnaround times mean that the businesses become better able to customize products and manage short product lifecycles.

At TXM we have learned that agile manufacturing does provide challenges for the lean approach. Precise standard work measured down to the second is often not possible for a dynamic and highly customized product mix. However a standardized sequence of work and standardization of setups and common tasks is beneficial. Moving lines are often hard to implement and flexible cells are often more effective. Kanban systems are useful for common parts, but kitting, carried out on site or by the supplier is often necessary for parts that are unique to individual products. This can be managed by making the kitting process the pacemaker or implementing a "kit pull" system where the consumption of one kit triggers the assembly of the next kit.

The foundation principles of lean remain essential. Visual systems mean that shop floor teams can respond in real time to changes in customer demand or process problems. Shop floor problem solving tools enable problems to be quickly highlighted, root causes identified and permanent solutions put in place and checked for effectiveness.

Cost reduction is a zero sum game that developed world manufacturers have already lost. Focusing on agility, and customization provides these manufacturers with an opportunity to once again develop a sustainable competitive advantage against their low cost foreign competition.



Above: Custom component manufacturers already face the challenge of producing a diverse range of product in ever reducing lead times.

TXM China Office

TXM now has a permanent representative office in Shanghai. Our address in China is Room 38, L25, 168 Xi Zang (M) Rd, Shanghai and our phone number is +86 21 5179 8388

TXM to Support Western Companies in China

TXM is working with major global companies operating across China to improve their operational performance and that of their Chinese suppliers through implementation of lean and the Toyota Production System. Costs are increasing in China and manufacturers now need to embrace lean approaches.



Tim Zhang Joins TXM

TXM is particularly pleased to welcome Tim Zhang to our China team. Tim has over ten years of experience in implementing lean in Lenovo, Delphi, Tyco and York. Like all our Lean Consultants,

Tim combines a wealth of lean experience with a deep practical understanding of manufacturing and supply chain. Tim is based in Guangzhou, but will be working with TXM across China.

TXM at Austech 2010 - Stand A070

TXM is pleased to announce our participation again in the Austech 2010 exhibition in Sydney from May 11-14. Austech showcases the best in Australian Advanced Manufacturing and TXM is pleased offer Advanced Manufacturing companies solutions to reduce their lead times and costs based on our extensive experience in this sector. The TXM stand will feature practical demonstrations of some of the techniques we use used to improve operational performance.

China - Where is it Going?

Some time this year China will overtake Japan as the world's second largest economy. This represents a breathtaking story of growth, particularly over the last 10 years. However the future is uncertain with some experts predicting China to overtake the USA by mid century while others predict a catastrophic economic and political collapse.

The China Story is Not New and Change Happens Slowly

A visit to the Shanghai Museum reveals a country with a 5000 year old history where change happens gradually. Even the China growth story is not new. Chinese growth has averaged around 8% since the 1949 revolution, interrupted only by Mao's "Great Leap Forward" in the 1950's and the Cultural Revolution of the 1960's. China continues to build physical and social infrastructure at a breathtaking pace and this should support growth in years to come. Even in the political arena there has been a gradual increase in press and personal freedom, although I am not expecting to see general elections in my lifetime!



Above: Chinese Infrastructure is new, efficient and a competitive advantage.

The Domestic Economy takes a Greater Role

The Global Financial Crisis (GFC) did reveal the extent to which China still relies on exports. However wages and living standards continue to increase and this should drive growth in the domestic economy. Improved social security is also needed to encourage Chinese consumers to spend more and save less.

Manufacturing Costs and the Currency will Rise

Post GFC many migrant workers who lost their jobs have decided to stay at home and take advantage of improved job prospects in their local areas. As a result the East Coast is starting to suffer a labour shortage. This is pushing up factory labour costs. The cost of skilled management and professional staff is already catching up on the Western World. The Chinese currency can be expected to rise (probably once the US stops lecturing China on the subject) and this will also push up costs. East Coast manufacturers are now increasingly looking to lean to help them become more efficient and the growth is now in more sophisticated areas of manufacturing such as aerospace and pharmaceuticals as capabilities increase and Chinese competitiveness in areas such as footwear and apparel reduces.

What does this All Mean for Australian Manufacturers?

China will continue to be formidable competitor, both through labour costs and the size and modernity of their factories. However the pressure may start to ease as costs rise in many sectors. In the US there is already a trend to bring product back on shore - particularly where supply chain flexibility is important (as discussed above). Increasingly China will become a market for Australian products. The multitude of prestige European designer stores in any major city indicates that the Chinese will pay a high premium for quality branded consumer products and this extends to factories where imported machines often outnumber local ones. The challenge for manufacturers will be to develop products that meet the particular needs of the Chinese market and to offer quality and value to justify the cost of importing from Australia.

A Final Word - Lessons from the Country

One of the most satisfying experiences at TXM in recent years has been working with small and medium sized manufacturers in regional areas. In our experience these companies are often more open to change and faster and more capable at implementing it than their big city/big company counterparts. Managers in these businesses are focused on what is happening in the workplace and the basics of running their business and serving their customers. They seem to have fewer non-value adding distractions such as industrial relations and regulatory interference. Likewise in smaller companies there fewer organizational layers, no corporate initiatives and decision making processes are often as simple as asking the owner - who usually standing right next to you on the factory floor. The informality of the Australian countryside means that sit down meetings are rare (if non-existent) and computer systems limited. If, as a manager, you want to find something out you go to the shop floor and ask. I am yet to find a country SME that owns their own data projector!

In big cities and big companies we often forget what business is all about - creating value for shareholders by delivering value to customers. We spend too much time in long unstructured and unproductive meetings. We rely on information provided to us by IT systems rather than taking the time to go and see what is happening at the workplace. We let email rule our lives by sending too many, copying too many people and feeling we have to read or respond to them continuously. Its time to take a lesson from the country and cancel a few meetings. Encourage short 15 minute standup meetings on the shop floor and restrict all meetings to no more than one hour - with an agenda and action minutes. Allocate a fixed time to respond to emails only once or twice at day and direct "CC" emails to a folder that you check infrequently. Set a target to reduce the number you send. Allocate at least 25% of your time every day to be away from meetings and your desk and out in the workplace helping develop your team to serve your customers better. With a bit of luck you will develop that laid back demeanour that our country counterparts manage to maintain while at the same time creating more value in your day.

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