

Improving margin and employee engagement in manufacturing

Management Innovation is essential

By Hendrik Lourens



Introduction

We are living in interesting times; the global economy seems to be indicating a pending slowdown and overcapacity in many industries.

Professor Danny Samson, Director of the Master of Enterprise and Master of Supply Chain Management degrees at the University of Melbourne recently published an article a few years ago titled "Mega-challenges and executive strategies" ¹⁾

He writes "In Australia, we face a number of challenges. With the mining boom over and industries such as automotive and many services being offshored in an increasingly high-cost Australian economy, leaders in all sectors have a daunting task in planning and executing long term paths to prosperity."

Manufacturing as a share of the economy has been declining for many years, and even the recent weakening of the exchange rate has not had much of an effect yet. Anecdotal evidence suggests that it is becoming ever more challenging to obtain the required skills at an acceptable cost. In Australia employee engagement is seemingly falling off a cliff, from 24% of employees highly engaged in 2013 to only 14% in 2017. ²⁾

Productivity is not improving, despite the tremendous effort. Managers and employees are tired and suspicious of improvement efforts that often end up in cutting employee numbers.

In his article, Professor Danny Samson suggests ways to deal with these challenges.

Prof Samson recommends six strategic interventions, the most important being:

Strategy 1: put the consumer/ customer at the centre of the business. Most global markets are in oversupply, so competing for the customers' attention is getting harder, and only those who are fully customer-centric will survive.

Strategy 2: pursue lean operations and waste reduction in every corner of the organisation. Most organisations waste fully one-third of their resources and big improvements are possible that flow straight to the bottom line."

These seem quite sensible, but manufacturers have been trying these strategies for years with little success. We will argue that the way companies pursue Strategy 2 not only works against Strategy 1, but cause the low productivity and employee engagement we see in much of the Australian Manufacturing Industry. In trying to optimise all parts of the operation using traditional command and control principles, we destabilise production flow, end up with unhappy customers and make it difficult for employees to be successful and engaged. We are in desperate need of innovation, but not the kind that involves technology and products. Based on

20 years of experience in running manufacturing companies and consulting to the industry, we believe innovation in manufacturing management is the missing success ingredient. Without innovation here, we (employees and managers) will be working harder and longer with ever-diminishing returns.

Our management paradigm

We are in agreement with professor Samson that looking after the client better than competitors are crucial. Most manufacturing businesses have a marketing constraint; that is, they can produce more, but the market demand is not sufficient at the required margin.

To increase sales and margin they focus their efforts towards strategy 2, trying to reduce costs through operational strategy. This typically means trying to have just enough of everything and maximising the efficiency of all the parts. The inevitable outcome is balanced capacity across the manufacturing chain. We now have moving bottlenecks, long lead times and poor due date performance, firefighting, managers that are under pressure, finger pointing and blame-shifting. Customers are unhappy, and Sales personnel end up dealing with customer complaints instead of selling.

Our belief that reducing cost everywhere is the solution lead us to plan production with "just enough of everything" using cost accounting principles which are unchanged from the early 1900's – at time when businesses operated very differently. In this way, we hope that we will achieve high efficiency on all the parts and thus achieve the greatest productivity and lowest cost for the system.

This is a fundamental mistake, made worse by continued (incorrect) application of Command and Control ideas first highlighted by Taylor. Command and Control is valuable but takes the ability to fix the system away from workers. Workers become cogs in a machine, replaceable and required only to follow directions.

The impact of efficiency of all the parts and command and control ideas are best illustrated by an example. ³⁾

In 1963, General Motors opened a car factory in Fremont California, a culturally diverse city. The factory fared badly. The United Autoworkers (UAW) union filed thousands of grievances each year. Absenteeism, slowdowns, drug abuse, alcoholism, wildcat strikes, and even sabotage were widespread. There was a climate of fear and mistrust between management and the union. First-line managers were frightened of the workers and carried weapons for their protection.

Then something extraordinary happened. Toyota offered to revive the plant and produce a GM car there, a Chevrolet. The two companies created a partnership named New United Motor Manufacturing Inc. "Nummi," Toyota wanted to recruit fresh new hands rather than rehire the plant's laid-off workers. However, the UAW insisted otherwise, and Toyota reluctantly took back the ornery old hands. They were also going to need only half of the previous workforce of 5000. In 1985 the workers returned with just as much distrust for their new bosses as they had had for the previous ones. When the Toyota people talked about creating a new sense of mutual trust and respect in Fremont, one union leader called it "a load of bullshit."

Three months after the assembly line started up again, Nummi was rolling out cars with hardly any defects, which was an incredible feat. During this time many GM factories struggled to keep their average down to forty defects a vehicle, and plants would celebrate when they had "only" twenty-five defects a vehicle. A Wall Street Journal correspondent wrote that Nummi was producing "some of the best cars that GM had ever sold." And Nummi did it with half as many workers. The cost of making cars fell dramatically. Absenteeism dropped from 20% to 2%.

Detroit sent envoys to Fremont to see what was happening. It turned out that looking at Japanese technology had been GM's motive for the venture. But there was no gadgetry to see. Nummi's machinery was three decades out of date: It was 1950s technology.

What's most intriguing about the Nummi story is that GM's managers didn't learn the lessons of the experiment. The new ideas did not catch on outside of Fremont and in 2008, with the GFC, GM had to be bailed out by the US Government.

GM's management system (which has been copied all over the world) was built by Alfred Sloan in the early 1920s to deal with the problems involved in managing a decentralised organisation

while maintaining centralised control. This built on Frederick Taylors command and control ideas and developed modern cost accounting at a time when direct labour and raw materials constituted more than 85% of item costs. This “management by numbers” method was adopted across the world by large corporations. It is important to note that around 2000 only about 35% of automotive item costs varied directly with volume, affecting the soundness of what had been developed.

In trying to optimise all the parts GM had to separate decision making from work. Decisions were made higher up in the organisation by management. It is an unquestioned assumption of modern-day management that managers should have and set targets and then create control systems—incentives, performance appraisals, budget reporting and computers to keep track of them all—to ensure the targets are met.

In the Toyota system workers are connected with the objective of improved flow in self-organising relationships. The work itself is the information, no separate management factory which inevitably creates distortions in meeting the system goal.

This is the lesson to learn from Toyota, the creation of self-organising relationships around improving flow leads to engaged workers, happy customers and superior profits.

Changing the paradigm: Manufacturing differently

What we need is a production system that ensures the flow of the right amount of product, at the right time all at a lower cost and with shorter lead times. Furthermore, we want to unleash the abilities of workers and managers to achieve this without losing command of the situation. How can we do this?

The most powerful management efforts focus on changing the accepted best practice management paradigms. John Seddon says “Forget your people. Real leaders act on the system. Real leaders redesign the system to meet demand. When leaders act on the system, customers cheer, costs fall, and the culture change comes free.”⁴⁾

At Stratflow we have developed the Productivity Platform, based on principles of Theory of Constraints (TOC) and Dialogic Organisational Development, to make this possible.

The Productivity Platform makes the overall goal of the system clear, it identifies and communicates the role of each person and department in achieving that (by getting work to flow faster through bottleneck areas) and changes the management paradigm to one where we manage the overall system for greatest effectiveness and efficiency. The increased clarity of purpose, advance warning of problems, alignment and trust enables production flow to increase by 20-30%, using the same resources. This enables employees and managers to not only decrease lead time and increase capacity, but also to ensure that the right product is available at the right time. Management is now in a position to make offers to the market at higher margin or to increase volume.



The Productivity Platform creates a platform where managers and employees can safely practice the new way of managing, without getting rid of the beneficial characteristics of Command and Control and Hierarchy. It reduces the levers to control to the absolute minimum and unshackles employees to do what needs to be done for the good of the whole. In this manner, the information overload that impedes many management teams is substantially reduced. It creates an environment where employees have a purpose, can achieve mastery and have more autonomy.

How do we satisfy clients for better margin?

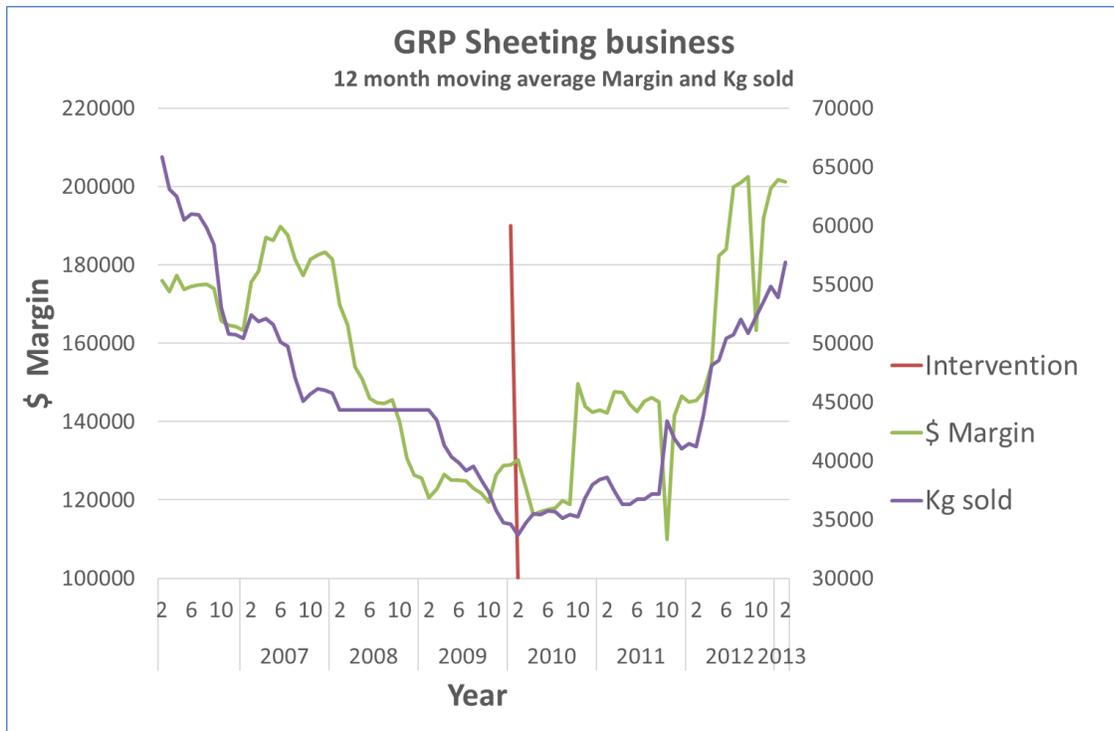
With our newly created optimised flow capability, we are now able to satisfy the customer's significant need better than any competitor. This need is typically for shorter lead times, full availability of items or significantly improved due date performance. The example below sets out a situation where optimised flow was used in synergy with a marketing strategy to simultaneously satisfy Professor Samson's Strategies. Productivity and employee engagement dramatically improved.

Polyester Panel Roof Sheeting Business

A roof sheeting business was about to be closed down due to years of declining performance. Sales had been falling for five years. Lead times were 6-7 weeks, but as long as 10 weeks on some items. Customers were desperately unhappy; their lead time preference was often less than 3 weeks.

Interdepartmental relationships were poor; the one thing they all agreed on was that the Production Department was underperforming. Production morale and engagement was poor. The production planner had a nervous breakdown trying to manage orders under these conflicting requirements.

Intervention: After establishing the Productivity Platform and improving production flow the sales quotation process was changed. The Theory of Constraints buffer replenishment system enabled all-round availability on selected Make to Stock items (MTS), stock and capacity buffers ensured Make to Order (MTO) reliability. Marketing capitalised on the improved capability by offering industrial customers reliable 2 week lead times and for commercial customers availability and higher stock turns.



Results: Customers loved the new market offering; employee engagement improved noticeably, the planner became a different person. Lead times reduced from 6 to 10 weeks down to 2 weeks, no stockouts occurred and almost no late deliveries. Sales personnel and customers started supporting the business again. Margins quickly increased by 20%. Three years later, **margins had increased by 66%**, a compound annual growth rate of 19%. **Sales volume had increased by 69%.**

Conclusion

We believe that the obstacle to engaging our workers and improving productivity is the widespread "optimise everything" mental models in combination with excessive Command and Control activities.

This leads to a focus on the performance of individual departments and employees at the expense of overall system performance.

In this manner, managers destabilise the flow of work and overload their cognitive abilities since everything becomes important and in need of constant attention and adjustment. Work becomes difficult for them and their subordinates. The Theory of Constraints holds that expending time and resources on non bottlenecks areas is unproductive and prevents breakthrough results from being achieved⁵⁾.

Manufacturing Differently

Manufacturing Differently is about embracing technology and process to enable humans, not the other way round. Automation, data-driven supply chain, and outsourcing can boost productivity and innovation. However, if you lead with classical management theory and treat people as replaceable cogs in a machine, the outcome will be troubled relationships with your employees, unhappy customers and lower margin.

By implementing a Productivity Platform we unshackle employees and managers from the worst consequences of Command and Control and improve psychological safety, trust and unity of purpose. The resultant reduction in lead time, improved due date performance and lower costs make it possible to offer highly competitive terms to the market and to grow market share and margin. Now Strategy 1 and 2 can be executed synergistically to the benefit of client and manufacturer.

The joy managers and workers experience from becoming successful ensure that we get culture change without the need for a culture change program.

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Hendrik Lourens is a Sydney based management consultant who has worked with Aurizon, Qantas, John Holland, CPB, Downer & Anglo American. He has qualifications in Physics, Polymer Science as well as an MBA. Hendrik has worked at Director level in manufacturing businesses and for a number of Tier 1 companies. On completing the "Managing the Theory of Constraints Way" in 2010 Hendrik became the first practitioner to pass all exams involved in the TOC Body of Knowledge within 1 year. His focus is on applying Complexity Science & Theory of Constraints to deliver breakthrough results. He has turned around manufacturers and improved the safety & productivity of mining and construction companies as well as published in various journals on efficiency and innovation.



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