Lean Manufacturing and the Theory of Constraints can co-exist

Did you know that Theory of Constraints (TOC) also supports a lean philosophy, especially in complex environments? In fact, LEAN and TOC may well walk hand in hand after all.

Although many ERPs claim LEAN capability, most still support pseudo-MRP capability. Definitely some ERPS are better suited to traditional MRP planning methods, while a few are more adaptable to LEAN/TOC techniques. Such advanced functionality has placed these TOC centric ERP systems in the center of more LEAN initiatives every day.

ERPs that impart themselves to TOC

Whereas LEAN targets the factory flow takt, TOC optimizes the factory by planning the bottleneck takt flow only. **VISUAL's Easy Lean** manages the critical constraint, time buffers, and replenishment (Kanban) buffers and priority levels.
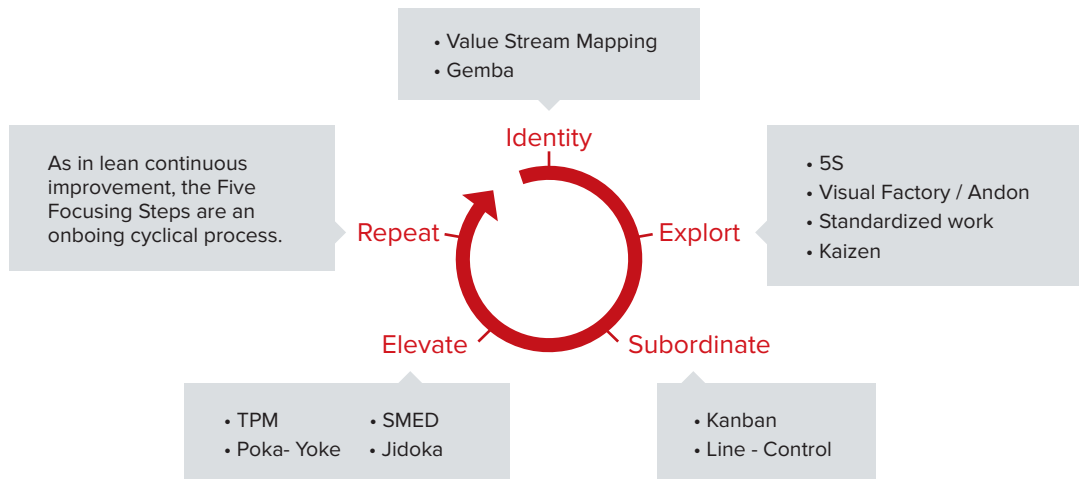
Instead of a defined order sequence and specific times (as in MRP or Finite scheduling systems), Operators execute according to the priority level. This eliminates the 'which task to execute next' decisions, increasing lean philosophy's employee empowerment mantra.

As scheduling one resource is easier than scheduling all, the care and feeding (data entry) of VISUAL Easy Lean is much less.

VISUAL's Easy Lean Scheduling Simplified

Easy Lean focuses on maximizing throughput on the single bottleneck only.

Easy Lean identifies the critical bottleneck (the Drum) and equally releases material to how much the drum can consume. This rate (the 'Rope'), ensures that non-constraint resources are not misallocated. Then Material is released to the buffers supporting the expected system throughput.

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more.info@synergyresources.net | synergyresources.net

United States
320 Carleton Avenue, Suite 6200, Central Islip, NY 11722 | TF 1-866-896-6347

Canada
2680 Matheson Blvd E, Suite 102 Mississauga, Ontario L4W 0A5 | TF 866-896-6347

• Value Stream Mapping
• Gemba

Identity

As in lean continuous improvement, the Five Focusing Steps are an onboing cyclical process.

Repeat

Explort

• 5S
• Visual Factory / Andon
• Standardized work
• Kaizen

Elevate

Subordinate

• TPM
• Poka- Yoke
• SMED
• Jidoka

• Kanban
• Line - Control

Actual Case Study

Meet Val Zanchuck, President of Graphicast (a 29 employee foundry/machine shop in Jaffery, New Hampshire). Val made his TOC dream a reality by adopting the VISUAL Easy LEAN philosophy. Zanchuck began implementing LEAN throughout his accounting, office and factory floor, using methods such as 5S (sorting, straightening, shining, standardizing and sustaining), Kaizen events and SMED set-up reductions.

Yet the best results came from the implementation of **VISUAL's Easy Lean**. 'As our business grew, lead times were getting longer,' said Zanchuck. 'Our schedule was booked solid, two shifts a day, for two months out. The finite scheduler used previously, did not tolerate disruptions/rush jobs well and required frequent human corrections'.

"It was incredible to think that we were booked solid for 16 weeks and we couldn't expand without adding people and machinery," noted Zanchuck. "And a month after installation, we were running a 4 week lead time. Capacity doubled, and WIP was cut in half. It also is saving us $100K/year in overtime."

However the challenge is that VISUAL Easy Lean is Counter-Intuitive

Easy Lean's biggest challenge— one deeply engrained for decades in Management's DNA—is traditional Cost Accounting, (all machine and labor resources utilized to the maximum). Easy Lean counter-intuitively paces to a key bottleneck, even if that means under-utilizing non-bottlenecks.

Easy Lean monitors the bottleneck; manages the buffers; signals work releases maintaining a smooth flow maximizing plant throughput.

However software alone cannot convert a traditional mindset to an **Easy Lean** transformation. **Easy Lean**, (as LEAN), is more about business practices than about software. **What has to change is the company culture.** Therefore new measures need to be implemented; the software can only reinforce these new procedures, disciplines, and measurements. Only with strict discipline will management maintain this counter-intuitive transformation.

Outside expertise often helps with the paradigm shift, spotting areas of improvement that internal staff might have gotten used to. Thus, it is recommended that ERP experts and TOC experts are not the same people.