

Dear Lean Community Member,

As you probably know, I try to walk through as many processes as I can because I learn something new on every walk. Recently I was walking through a manufacturing operation and found myself wondering about the principles of lean information management, in particular with regard to production control and fulfilment.

The facility in question was typical in having a central brain – its computerized Materials Requirements Planning (MRP) system – telling each operation what to do next. It's what I call a cognitive system, in which all feedback goes into a central processor that thinks through the optimal next step for everyone, using complex algorithms.

But as is also typical, the instructions being sent by the central brain often seemed nonsensical to the managers and operators on the plant floor. When the system told them to make some item for which they lacked parts, they simply overrode the system and made some item for which they did have the parts. Needless to say, this further confused the central brain and at the time of my visit it appeared to me that there was an official scheduling system from the MRP and a real scheduling system conducted manually by managers on the shop floor. The results were not impressive. What could be done instead? Here are six simple principles:

1. Simplify every process to minimize your need for information management. For example, the simple act of moving activities from departments to a continuous flow layout – in which an item goes automatically from one step to the next – eliminates all of the information needed to tell each department and step what to do next. And compressing your value streams by relocating sequential process steps from across the world to across the aisle eliminates the need for a world of information.
2. Make every step in your process capable and available. Breakdowns, turn-backs, and materials shortages generate the need for managers to manage more information. Instead of automating this task, try to eliminate the need for it. (On another recent walk, I was given a full explanation of the information management systems in a logistics company. The management proudly explained that their system permits them to determine exactly where they have lost a package, in fact thousands every night. My question was, “Why do you keep losing packages? If you had a truly capable process you wouldn't need this expensive safety net. Even worse, the existence of the safety net removes the pressure to make your process capable. Think of your IT system as a different type of ‘just- in-case’ inventory.”)
3. Schedule each value stream from only one point. Taking this simple step will make information management easier throughout your operation.
4. Use reflexive production control upstream from the scheduling point. Lean Thinkers call this approach “reflexive” because it is like your reflexes. When the downstream process uses material, an automatic order is placed to replenish the same amount from the next upstream process. Like your reflexes when you put your finger on a hot stove, no thinking by a central brain is required.

5. Send information in small batches. Amazingly, many MRPs are still run on the weekend to produce a weekly schedule. And many sales and order management systems still work with weekly or even 10-day batches while many organizations seem to be moving toward overnight runs to produce a daily schedule. What managers really need to know is what to do in the next 15 minutes based on what happened in the last 15 minutes. Piling up information in a large inventory is as bad – maybe worse – than piling up large inventories of products.

6. Make your information management transparent and intuitive. Perhaps the saddest thing to see is good managers working furiously to override IT systems with opaque algorithms, making the situation even worse through their frantic efforts. Simple information management methods like kanban cards and web-based electronic kanban, plus simple heijunka algorithms, seem too simple to many managers. Yet they are intuitive. And anomalies quickly become obvious. Why spend enormous sums to keep yourself in the dark?

I'm not naïve about getting the world to embrace lean information management. We're not quite yet at the end of thinking that more information is always better and that if we just had all possible information, perfect algorithms, and lightening fast central processors, life would be easy.

For example, despite 50 years of evidence that this isn't true, we are now embarking on a new experiment with Radio Frequency Identification (RFID) in which every item in every process can be tracked individually. The managers of a gigantic retailer that I recently visited — whose stores average four inventory turns per year, with no fixed storage positions for any item, multiple storage points for every item, and a high level of out-of-stocks — told me that an RFID tag on every carton will eliminate current “treasure hunts” and insure a high level of customer service.

My question was, “Why do you need so much inventory with so many storage locations? If you have only one storage location for each item — on the shelf where the customer puts the item in the cart — and replenish every item every night from a central distribution facility serving many stores, the information you already gather from bar codes at customer check-out will tell you everything you need to know.”

My prediction is that as the amount of RFID information available overwhelms our ability as managers to figure out what to do with it (even as our fundamental value-creating processes deteriorate), many managers will finally realize that simple is best.

In the meantime, smart Lean Thinkers can save themselves enormous sums and frustration by avoiding the latest IT wave and implement instead six simple principles of lean information management.

Best regards,

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