

Lean and IT: Friends or Foes?

By Jean Cunningham

Not long ago, I received an invitation from a large manufacturing company to meet and discuss lean. They provided lovely accommodations at an exclusive resort with a gourmet dinner and all the trimmings. The next morning I met with the head of Information System Technology. After a nice coffee, he said, “I asked you to come up because I wanted to meet someone who thought lean and IT were compatible.” He went on to explain that all he read about lean was that IT was not needed in lean companies.

For a variety of reasons, there are common misperceptions about lean and IT both inside and outside of the lean community. When taking the lean manufacturing and lean enterprise journeys, there are certainly large compatibility and need questions to address and many resulting changes to apply to MRP II and ERP systems. But, to say IT is not needed couldn't be farther from the truth.

Classic MRP II

In the past, I was CFO of two highly successful manufacturing companies. When I joined, we had all the traditional elements of the classic MRP II system fully at play in running our business. We forecast demand which we put in our MRP modules which spit out our optimal production. Work orders were created to tell each operation when and how much to make of everything. Most of the activity of the purchasing department was verifying all the PO recommendations from the system, adjusting ones that looked questionable, and then getting commitments from our suppliers.

At the shop floor we collected labor information for every operation; keeping track of when a work order was started and when it ended. We compared our labor information to our payroll information to ensure it was in alignment and that we did not miss anything. In some locations we captured data about how much each machine was being used. All this information was used to value our inventory and to tell us how we were performing based on our standard costs through our financial statements.

Those Crazy IT Terms

IT? MRP? ERP?

We hear these terms thrown around our companies often in discussions on manufacturing, reporting, and resource planning. But, what do they actually do or what are they actually capable of doing for a company. Here's a quick and dirty explanation.

First, IT does not refer to any equipment or software. It only refers to the department that takes care of all of your computer needs.

A few of the duties that IT professionals perform may include data management, networking, engineering computer hardware, database and software design, as well as the management and administration of entire systems. So, anywhere the use of computers and information are associated, your IT department is dealing with it.

Material Requirements Planning (MRP) evolved to Manufacturing Resource Planning (MRP II) which evolved to Enterprise Resource Planning (ERP). These are all systems that coordinate a company's resource requirements.

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Routings and work orders were maintained to help us move parts through our shop so that we could eventually produce the end product for our customers. Managing routing changes and engineering change notices were full time jobs.

Lean Manufacturing

But then in the course of implementing lean manufacturing and taking rudimentary steps toward the lean enterprise, we learned how to manufacture at the pace of our customer demand. We reduced variability, reduced in-process materials, dropped lead-times, and created flow manufacturing cells. We implemented external kanban to connect our demand for materials with our suppliers with frequent deliveries based on consumption. We even managed to get those old nemeses, Manufacturing (makers of data) and Accounting (reporters of data), to partner together and identify the data that truly added value in perfecting our response to customer demand. Wow! Life and business was good and getting better.

But, there was a large hole in our knowledge base of not knowing what data we were collecting that we didn't need, an area often completely overlooked when planning and designing. So, we began to methodically look at what information coming from MRP was really important and adding value in our new lean factories, as well as data that was simply of no value. And, we were amazed. We didn't need routings. We didn't need labor collection. We didn't need PO's, and we didn't need work orders. We began to realize how much waste could be eliminated by turning off some of the MRP collection process.

Lean Needs

What we really did need was information about our customer demand rate. We needed perfect orders with all the customer information available prior to launching manufacturing. We needed information about when our processes weren't working right. Most of the information we needed was not in dollars.

We needed simple methods to communicate with our suppliers. We needed simple payment processes for daily deliveries. We needed easy to read financial information so all our employees could understand the language of business. We needed scorecards that matched our new factory organization linked to our product families and value streams.

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Prior to these systems, it was not unusual for each department within an organization to have its own customized computer system and data. It was generally an uncoordinated, highly manual mess.

MRP is concerned primarily with manufacturing materials while MRPII is concerned with the coordination of the entire manufacturing production, including materials, labor, and machine utilization. The goal of MRPII is to schedule and plan all manufacturing resources to accomplish a sales forecast.

ERP systems now attempt to cover all basic functions of an enterprise. An ERP system is based on a common database and a modular software design where each module addresses a function such as Bill of Materials, General Ledger, Payroll, Suppliers, or Sales and Marketing.

A company selects pre-built modules where possible and designs other modules where necessary based on company requirements. The common database can allow every department of a business to store and retrieve information in real-time.

LEARN MORE: Wikipedia has excellent overview articles on both MRP and ERP. They provide vision into the complexity and amazing potential of these systems.

IT Partners

So, regarding the relationship of lean and IT, yes, we did indeed begin to turn off much of the MRP II system, but—and this is just as important—we needed many new and reconfigured things from our information systems and our technology staff.

It was critical for our information systems team to understand these changes in terms of our business model. We needed IT's help on how we could use or modify existing capabilities in our ERP, or add custom applications, or shut down non-value add processes. Our IT team members became integral partners in our lean transformation. They helped with conceptualizing creative system solutions that allowed us to automate many of the improvements overtime that we had initially implemented manually. And in some places—another surprise—it made sense to leave the work manual.

So, is IT needed on the lean journey? Of course and more than ever. Creating a lean vision of the future will allow everyone to participate in the improvement of the company. Every part of the company will change. Every job will change. To build and sustain a Lean Enterprise, you'll need IT along with operations, materials, sales, accounting, HR, customer service, and R&D.

Jean Cunningham is the founder of Jean Cunningham Consulting which provides lean improvement planning, coaching, facilitation, and education. She is the co-author of the acclaimed book, *Real Numbers: Management Accounting in a Lean Organization*, an essential text for learning Lean Accounting. She recently co-authored *Easier, Simpler, Faster*, a book on applying lean principles to information systems processes and optimizing output data with the lean workplace. Both books have been awarded the Shingo Prize for Research. Learn more at www.jeancunninghamconsulting.com.