

Lean Manufacturing

## Lean Processes the “Low-Hanging Fruit” of Maintenance Savings

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Lean processes, while being widely deployed in manufacturing, are only now gaining the recognition they deserve in plant and facilities maintenance. Regardless of the systems in place, the visibility and management of critical spares and MRO procurement represents in many cases the “low-hanging fruit” and most easily accessible savings opportunities.

### More Visibility + More Information = Better Decisions

Employees thrive on information. Tablets and easy access to computers or workstations provide the opportunity to empower employees like never before. Technicians can receive notifications that work orders are pending, access and interact with work orders on mobile devices, view manuals, diagrams, schematics and images all at point of use and all in real time.

Equally important, employees can check on-hand inventories and view entire OEM parts lists and supplier databases. Easy to use and easy to deploy, affordable communication solutions supporting point-of-use information access is one of the most easily implemented solutions for saving substantial time in the workplace.

Immediate savings can be realized by minimizing or eliminating time spent waiting for required items to be pulled or staged from supply room inventories. The next opportunity of savings includes eliminating travel time by deploying a runner to bring required items to the point of use, rather than having the employee travel to the supply room. Both examples include an assumption of cost for the software to manage remote requisitions. Typically, software that supports requisitions will also support inventory management and most, if not all, of the normal procurement functionality.

### The Model

In the example below (Table 1), we are modeling a facility with 20 employees, each making two trips to the supply room per day with a wait time of only three minutes. The shop rate for the employee is \$40 per hour. The software in this example has an all-in monthly cost of \$650. The net savings to the enterprise is \$1,070 per month.

The same scenario, including a new employee at \$15 per hour who acts as a runner, will save the enterprise \$1,930 per month. If an existing employee were used as a runner, the monthly savings would increase to \$4,510 per month.

	Monthly Cost	Monthly Net Savings	
Monthly Wait Time Only Cost vs. Savings	\$1,720.00	\$1,070.00	Savings Net of Application Cost
Monthly Wait Time Plus Travel Time Cost vs. Savings	\$5,160.00	\$1,930.00	Net Cost of Runner and Application. There is no factoring for lost productivity as the result of start/stop and work not done while in transit/waiting.

Table 1

Neither example takes into consideration lost productivity, multiple shifts or efficiencies garnered by creating fast, accurate data electronically.

*Savings example assumptions:*

Number of employees	20
Number of trips per day	2 trips
Wait time	3 minutes
Round trip travel time	6 minutes
Days worked per week	5 days
Hours worked per day	8 hours
Shop/labor rate per hour	\$40
Runner's rate per hour	\$15
Monthly application cost	\$650

**Point-of-Use Solutions = Immediate Savings**

- Without ever leaving point of use, technicians, on or off premise, can view critical spares and storeroom inventories across the entire enterprise, as well as OEM and supplier databases (Figure 1).
- Electronic requisitions can be created on any web-enabled device and converted with one click to barcoded picklists or internal packing lists.
- Items can be staged or delivered to the point of use, saving travel time and wait time.

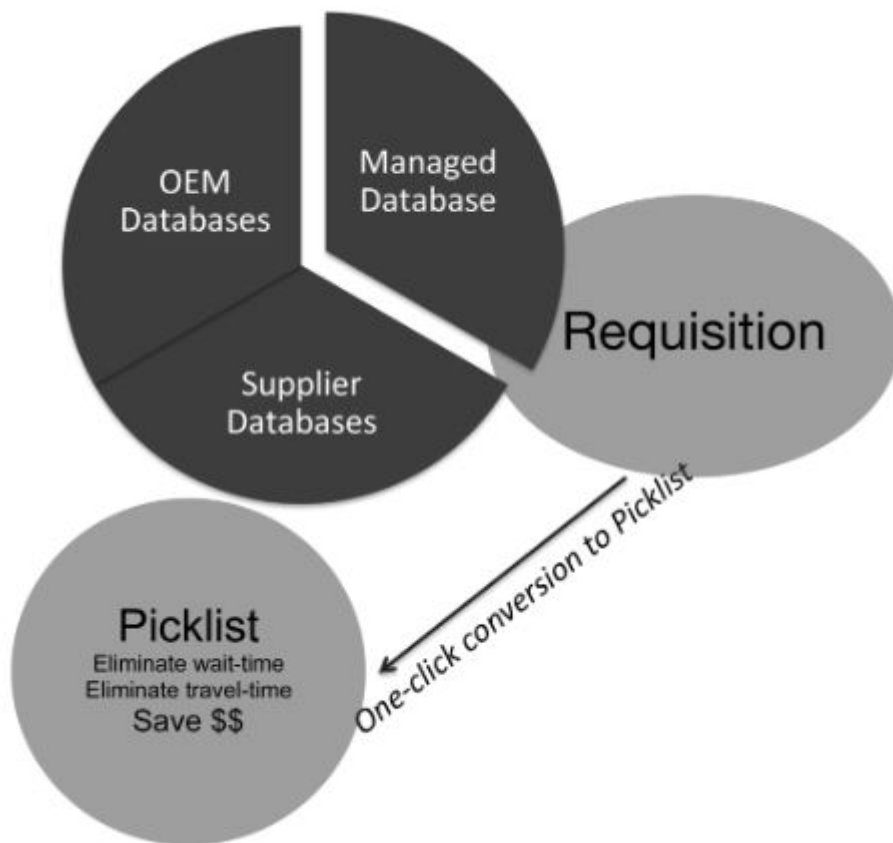


Figure 1. Technicians can view critical spares and storeroom inventories across the entire enterprise.

## Keep it Simple

Items that aren't in stock in your crib need to be ordered. That sounds simple enough and it should be. That same requisition, that also included items in inventory, is easily converted to an order or as required a Request for Quote (RFQ). This can be a one-click process depending on the approval rules in place (Figure 2).

With the tools available today, there exists the visibility to quickly and efficiently manage the process. Along the way there are checks and balances, audits and logs to ensure that processes and accountability are maintained.

With an integrated solution where all the different components are always talking to each other, steps are automated and results optimized.

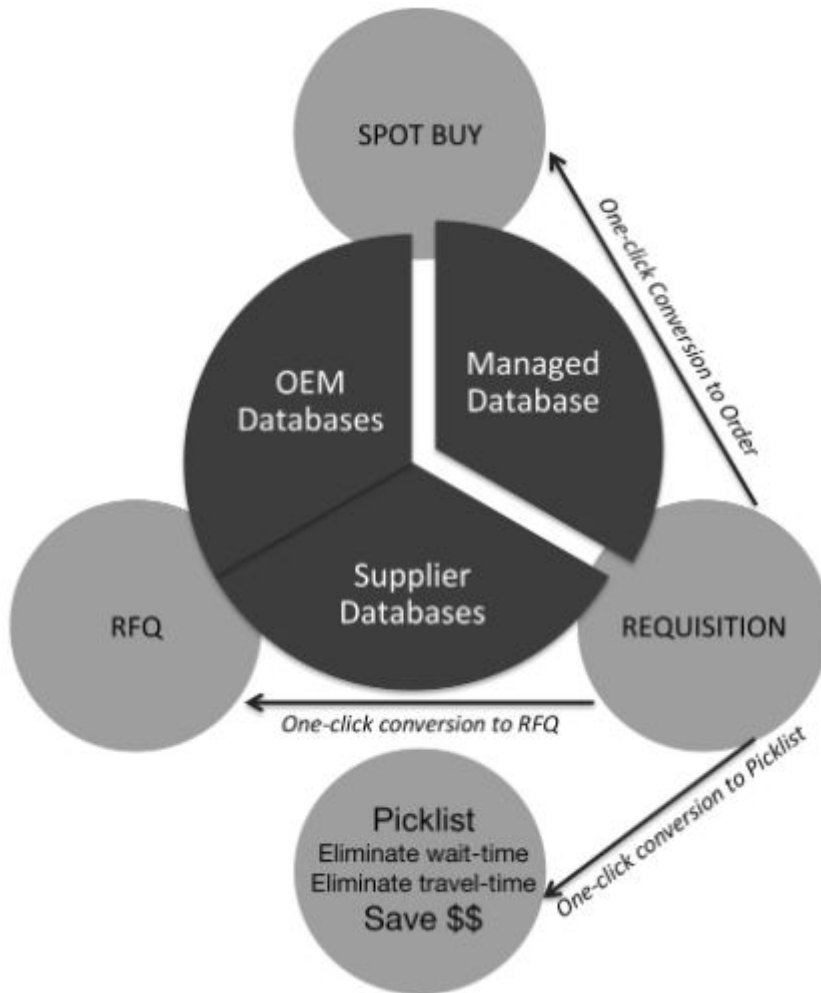


Figure 2. Items that aren't in stock in your crib need to be ordered. That same requisition is converted to an order or Request for Quote.

## What Features Do We Want?

Bottom line, there are fundamental components that will make our processes lean, our workflow efficient and minimize or eliminate wasted time. It's not only about the managed items in our storeroom, it's about the other 60% of purchases that we make. What we need is:

- Inventory Visibility
- Easy Search
  - By machine
  - By manufacturer
  - By job
  - By assembly
  - By what **we** consider to be important
- 360° Supplier Visibility
  - **Punch-out access** to **all** the parts for **all** the jobs, not just managed inventory
  - Manage open orders
  - Delivery delays
  - Cash-flow forecasts
  - The list goes on
- Requisitions that can be converted with one click to a purchase order or an RFQ.
- One-click punch-out from supplier and OEM databases
  - Create an order

- Create an RFQ
- Add items to inventory
- Create min./max. and bin locations from historical or new purchases

But why stop there? Efficiencies can be extended through the entire purchasing process. For example, my parts are ordered and I have a few concerns:

- I want confirmation that the parts required were actually ordered.
- Did my supplier get the order?
- Where are my parts?
- How do I know when my parts have arrived?

Today's cloud solutions close the loop:

- Automated Purchase Order Confirmation
  - View real-time supplier confirmation status of all your purchase orders
  - All purchase order confirmations are date and time stamped
  - **Never hear:** "Your order was not delivered because it was never received" because you know which purchase orders have been confirmed by your supplier and which have not
- Requisitioner receives real-time notification when parts are ordered
- **Requisitioner is notified when requisitioned items are received**

It's simple. Integrated solutions, where all of your business activity is easily visible, always communicating and in sync, save money. Make better decisions faster leveraging an environment where your key elements inclusive of CMMS/EAM, procurement, inventory management and asset tracking are all on the same page.

## To ERP or Not to ERP – That is the Question

A common theme among users and would-be users of complex ERP systems that are also utilized to manage maintenance, critical spares and MRO inventories is that the built-in processes are complex, restrictive and far less than user friendly. Accessing data and relevant reporting can be daunting. The modules for asset management are expensive and deployment can be a time-consuming process.

Complex ERP systems are just that, "complex". Integrating a lean, comprehensive CMMS/EAM application that can provide a suite of functions with respect to planning maintenance activities, tracking labor and material costs, maintaining repair history— inclusive of functionality for ordering directly from the CMMS system— and can be integrated into existing ERP systems is typically faster, more economical and more efficient than going through the process of turning on or acquiring and perfecting those same capabilities within the company ERP.

## Connecting It All Together

Transparency between maintenance, manufacturing, inventory and procurement, when prioritized, provides cross-system insights that enable an organization to maximize productivity and is ultimately the key to proactive risk avoidance and resilience. Further, the ability to join internal and external data and insights into an easily accessible platform provides the foundation to launch and maintain successful strategic initiatives.

Implementation and training have to be intuitive. You want an application that can import and export data from spreadsheets. You want an application that has an intuitive workflow that requires minimal time training and maximum time being productive. Of significant importance is an affordable application suite that makes good employees better while supporting the business goals and objectives

of the enterprise.

Lean integrated processes and solutions, and 360° program visibility, may not prevent all risk scenarios, but they will ultimately, significantly reduce cost while elevating the organization's resilience to risk.

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