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Business Inspired™

Three Key Areas to Reduce Costs with Lean Techniques

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Introduction

While the principles behind lean techniques can be applied to nearly any business, the term "lean" is most often associated with process improvement and cost reduction in manufacturing. Most businesses ascribe to the notion of continuous process improvement, one key area of focus is on the flow of product from supplier to customer. Naturally, any process that impedes the smooth flow of product is a source of additional cost to the company.

The process inefficiencies that lean techniques address aren't unfamiliar or exotic; in fact, they exist in every organization (see Figure 1). In particular, the processes that contribute value directly to the customer, the "value stream," need the application of lean techniques. Redesigning processes so that they reduce the delays inherent in the flow of information from one part of the organization to another is one example of applying lean principles to business.

Figure 1: The "Seven Deadly Wastes"

Source: Epicor Software

Companies most often implement ERP systems because they want to integrate and manage disparate business processes with a single point of control. While an ERP system provides a framework for achieving business process efficiency, simply implementing one may not be sufficient to achieve the expected results, as we will see below.

"Tailored" to Drive Out Costs in Key Processes

IDEV Technologies, Inc., is a developer and manufacturer of medical devices headquartered in Webster, Texas, whose surgical implant products are used around the world. Carl Heeder, director of ERP Systems, implemented lean techniques in three key areas of their manufacturing operations by tailoring Epicor Software's ERP software to meet the company's specific requirements.

IDEV had acquired Epicor software in 2007; but, by 2010, the company failed to realize the expected benefits of implementing ERP. "When I joined the company in 2010, virtually all the manufacturing and quality control processes were still paper-based," Heeder notes. "The company was focused on growing sales and not on efficient processes." In addition, the company had very little internal experience with the software validation needed to comply with Title 21 CFR part 11, the federal guidelines that specify the criteria under which electronic records and signatures are considered equivalent to paper records.

Since the ERP system had never been fully implemented, the company decided in 2010 to re-implement the software, tailoring existing processes within the system and adding software validation capabilities to meet regulatory requirements. Heeder prefers the term "tailoring" to "customization," because the Epicor software has a service-oriented architecture (SOA) which enables changes to be made to core processes without changing the underlying software code. Instead, controls, forms, or menus are inserted either before or after existing procedures. This method makes it easier to fine-tune changes and takes less time to implement than traditional ERP customization.

Heeder identified three areas where the application of lean techniques to existing business processes would yield immediate benefits: purchasing and suppliers, sales orders, and shipping. Even though these processes were external to the manufacturing process itself, the lack of automation impacted how well the company could deliver product to its customers.

Purchasing and Suppliers

In terms of purchasing and suppliers, the ERP system as installed provides the capability to restrict the purchase of parts to approved suppliers. Table 1 shows how IDEV modified business processes through tailoring to achieve lean results.

Table 1: Applying Lean Techniques to Purchasing and Suppliers

Process Needs	Tailoring Actions
Parts expiration leads to incomplete or delayed shipments to customers	Add expiration dates to parts. Add minimum acceptable shelf life to each part.
Certification documents are required from supplier before materials are accepted	Modify the system to require suppliers to provide material certificates with each shipment.
Until approved, potential suppliers are restricted to supplying parts for development and testing	Modify the system so that any parts supplied by potential suppliers are marked only for use in development and testing

Source: IDEV

Tailoring the Epicor system processes resulted in the following benefits to purchasing and to the company's vendors:

- Because purchase orders now include requirements, the need to approve individual purchase orders was eliminated.

- As part of the receiving process, the system now reports on the parts characteristics, such as their expiration date and whether they came from approved suppliers.

- When materials are received, parts information is made available for incoming inspection and purchasing is automatically notified if parts deviate from required material standards.

- Materials received from potential suppliers are automatically assigned non-production lot numbers, so that unapproved parts can't be used inadvertently.

"The Epicor software came with the capability to restrict the purchase of certain parts to approved vendors," says Heeder. "We simply used tailoring to modify and extend that functionality to meet our specific requirements."

Sales Orders

A second area that benefited from the application of lean techniques was the sales order process (see Table 2).

Table 2: Applying Lean Techniques to Sales Orders

Process Needs	Tailoring Actions
Monitor status of customer training	Add an indicator to customer records when training is completed
Inform sales reps about the status of new orders	Add an approved status to customer orders
Warn sales reps when orders arrive from certain countries	Add country permissions check at order entry and again at shipment
Customer service controls release an order for shipment	Capture who approved orders and customers and when Add automatic notification to shipping of order status, whether approved or not

Source: IDEV

As a result of these changes, customer service established more rigorous control over the sales order process:

- Customer service now receives a warning if a customer's training certificate is not on file.

- Customer service now receives a warning if a sales order is submitted for a country that is on the prohibited list.

- Both sales representatives and the sales manager are sent emails on the receipt of a new order. If needed, the system also provides a warning about the status of the customer's training certificate.

- Shipments are only allowed on orders that have been approved by customer service.

Heeder says, "Giving customer service control of the sales order process was essential to reducing order processing time; it was the right place to introduce controls."

Shipping

Shipping was the final area to receive attention for process improvement, which made sense since shipments depend on the completion of tasks in the other areas, and is the endpoint for their efforts. Most of the changes involved preventing shipments that do not satisfy specific criteria, as Table 3 shows.

Table 3: Applying Lean Techniques to Shipping

Process Needs	Tailoring Actions
No orders shipped until approved by customer service.	Modify the shipping process to disallow shipments unless sales orders are approved
Block shipments to prohibited countries	Modify shipping process to prevent shipment to countries on the prohibited list
Block shipment of specially identified products due to immediate quality issues or cause	Modify the shipping process so that products with quality issues or that are unapproved are prevented from being shipped
Block shipment if product is not approved for release to customers	

Source: IDEV

Overall Results

The application of lean techniques to IDEV's ERP system allowed the company to concentrate more on building new business and serving customers, rather than focusing on the mechanics of business processes. Some of the significant improvements included:

- Eliminating the need to manually review each purchase order; purchase order conditions can be predefined according to customer or geographical region. The ERP system replaces manual order processing, thereby reducing delays and speeding up the flow of materials to production while introducing important safeguards.

- Eliminating the manual sales order approval process, a major source of delays in processing customer orders. The system automatically tracks customer training and provides sales representatives, sales management, and customer service with a clear view of the status of an order from receipt to fulfillment.

- Better control over time-sensitive inventory with automatic safeguards that prevent the use of parts that have reached their expiration date, or that come from a supplier whose parts are not approved for use in production.

- Eliminating the need to manually verify each shipment before release.

- Control over processes that affect suppliers and customers is centralized in customer service that now has a consistent set of tools to control the flow of business.

"Letting the system automate the manual processing of purchases, orders, and shipments has substantially improved the flow of product to the customer," Heeder concludes. "We have a higher level of control and oversight on all these areas, which is critical to the efficient handling of new customers and increasing sales."

The Epicor Signature Methodology Enables Lean

The ability to tailor the behavior of key processes built into the Epicor software made it possible for IDEV to achieve lean results without the usual expense and time associated with customization. The relative ease with which this was accomplished means that IDEV can continue to apply lean techniques to other parts of the organization.

Beyond applying lean techniques to ERP, Epicor demonstrates its commitment to lean thinking by using these principles in its own consulting practice. The company promotes the development of lean expertise to its customers through the following programs:

- Lean Certification Program

- Change Acceleration Program (CAP)

- Lean Kaizen[1] Blitz

The Epicor structured methodology for ERP implementation, the Signature Methodology (Figure 2), provides a roadmap for all ERP project phases.

Figure 2: The Epicor Signature Methodology

Source: Epicor Software

The tasks within each project phase described in the methodology provide a framework for ERP implementation as well as a solid foundation for understanding and applying lean techniques to ERP initiatives. As IDEV' experience shows, lean techniques can enable business processes that improve process flow, reduce delays and inefficiencies, and build increased customer value throughout the organization.

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[1] Kaizen is Japanese for improvement.

About Epicor

Epicor Software Corporation is a global leader delivering business software solutions to the manufacturing, distribution, retail, and service industries. With more than 40 years of experience, Epicor has more than 20,000 customers in over 150 countries. Epicor solutions enable companies to drive increased efficiency and improve profitability. With a history of innovation, industry expertise, and passion for excellence, Epicor inspires customers to build lasting competitive advantage. Epicor provides the single point of accountability that local, regional, and global businesses demand. For more information, visit www.epicor.com.

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