

**FRONT OFFICE LEAN  
- TAKING LEAN MANUFACTURING  
BEYOND THE SHOP FLOOR**

**WHITE  
PAPER**

# FRONT OFFICE LEAN – TAKING LEAN MANUFACTURING BEYOND THE SHOP FLOOR

## **Trimming front-office fat is the new lean frontier**

By Gregory Romanello, Business Software Consultant, IFS North America

It would be hard to find a successful manufacturer anywhere in the world that is not using some elements of lean manufacturing to streamline their operation. Some companies have formal lean programs, employing individuals with black belts in Six Sigma and other process control skills. Other manufacturers simply employ techniques on the shop floor ranging from kanban events, poka yoke, cellular work flows, motion studies and tightened inventory control.

Lean has become a major part of how manufacturing works.

### Money left on the table

However, even among those companies with formal lean programs, the degree to which lean principles extend beyond the shop floor to the office is still very limited. This is surprising, since to a large extent, an organization that is extremely lean on the shop floor may still be losing time and energy to non-value added work in the front office. This lack of front office lean means many companies will not realize the true benefits of lean manufacturing disciplines. Some companies – including those running in engineer-to-order, make-to-order and project-oriented businesses that are less repetitive than make-to-stock operations – have the most to lose to unmitigated waste in the front office. These companies perform extensive project-related work before a project gets to the shop floor or into the field for installation or construction, creating enormous potential for losses due to inefficient processes. And even once fabrication or installation begin, administrative and design activities are integral parts of the product or project delivery process. So in these firms, the line between the front office and the shop floor is decidedly blurred.

Even before an initial sale to a complex manufacturing customer is completed, there are opportunities to lose effort to non-value added activities. Time and labor can easily leak from the organization if there are not simple and established

## TAKING LEAN MANUFACTURING BEYOND THE SHOP FLOOR

processes to turn a suspect into a prospect and then a customer, and turn estimates into quotations and quotations into cash. In engineering-oriented environments, large amounts of information must be developed, and then shared with customers and those responsible for execution on the shop floor. Processing engineering change orders is a critical step in this process as inefficient handling of this information can result in waste on the shop floor, customer dissatisfaction and other problems. These problems can start very early in a sales cycle, so there is opportunity to lose time and money from the sales process all the way through aftermarket service and project or product retirement. Waste can manifest itself in the front office when someone cannot locate a physical copy of a customer query or a change order, or when incorrect decisions are made due to lack of information that is, in fact, available elsewhere in an organization. But perhaps the most insidious drain on front-office resources is the waste of time and energy that results when documents sit in queue waiting for approvals or reviews. The shop floor term, takt time, is applicable in the front office as well. Tracking the amount of time it takes to turn around an engineering change order is just as relevant as the amount of time it takes to produce a custom assembly once a shop order is issued. Whether we are talking about manufacture of a discrete object on the shop floor or the execution of an abstract process by one or more white-collar workers, the more time it takes to turn the activity around, the more time and energy is required in the execution. This is because the amount of time necessary to complete an activity will expand to meet the amount of time available. Nature hates a vacuum. So by focusing on front-office takt time and eliminating administrative barriers to securing approval and necessary reviews of documents and projects, waste is easily eliminated.

Virtually any manufacturing or contracting operation can benefit from bringing lean disciplines to the front office. But in complex manufacturing operations, the manufacturing process itself is heavily dependent on front-office activities. Front office and shop floor operations are more intricately intertwined in these complex industries, which include make-to-order and configure-to-order. On a project that must be delivered in 90 days, more than 50 percent of the work may in fact take place in the front office. If front-office processes are not clearly defined and free of waste, that 90-day project could wind up taking 180 days as people look for misplaced information and try to decide how processes should unfold or how decisions should be made – this despite a successful lean program on the shop floor! A lean front office will not only help shave time off of a project, but will help a company make and keep commitments to customers – which is a key factor in keeping the customer! Companies have moved beyond ‘Customer Satisfaction’ and are striving for ‘Customer Loyalty.

## TAKING LEAN MANUFACTURING BEYOND THE SHOP FLOOR

After all, customer dissatisfaction and frustration are another hidden cost of inefficient front-office operations. Customers are understandably irked when specifications, preferences and other information disclosed during the early steps of a sales process do not follow them deeper into an organization once a contract is signed. Only a well-designed, lean, front-office workflow can ensure that information vital to successful product or project delivery are not lost.

A lean front office – like a lean shop floor operation – often needs to encompass not just internal departments but outside vendors. Just as shop-floor lean practices can extend beyond the walls of an organization through practices including vendor managed inventory and vendor portals, a front office lean program can do the same thing, encompassing contract management with engineers, contractors and subcontractors, installers and other parties who contribute information to an estimate or quotation and early-stage work on a product. This means that programs designed to extend lean front office practices into the vendor base are critical – just as major OEMs will work with their fabrication suppliers to educate them in lean disciplines. With the right enterprise software and portal-based technology, it might be possible to automate the lean practices of front-office vendors. Lean work flows can route materials to personnel across company lines, allowing seamless collaboration between in-house and outsourced planners, estimators and engineers. Documents can be made accessible to the right people in or out of house, and changes and alterations to specifications can be tracked in a central repository, eliminating enormous amounts of non-value-added work.

Even companies running less complex modes like make-to-stock are losing value if front-office personnel are devoting time to repetitive, inefficient, non-value added work. After all, the efforts of office employees engaged in nonproductive activities could be redirected to tasks that assist the customer, deepen the customer's relationship with the manufacturer or otherwise provide value to the company or its customers – and yield customer loyalty.

### Re-engineering processes

On the manufacturing floor, there are certain techniques that produce predictable results when implementing lean. Apart from building awareness and enthusiasm in the individuals involved in the manufacturing process, shop floor lean involves identifying concrete steps that can be followed to eliminate waste and increase efficiency. Oftentimes, equipment and materials can be moved to shorten cycle times. Maintaining better controls on inventory to avoid excess as well as product delivery delays and using visual cues and processes to error-proof processes are two

## TAKING LEAN MANUFACTURING BEYOND THE SHOP FLOOR

other ways of implementing a lean philosophy. Front-office lean is more challenging, however, because much of the work and value takes place not in a three-dimensional physical environment, but in the minds of individual knowledge workers and within electronic systems.

While inventory and product is the focus of shop-floor lean, front-office lean deals more substantively with information. Whether the information comes in the form of pieces of paper, verbal and written communications between the company and its customers, complex electronic documents and specifications or simple internal correspondence, a lean front-office must streamline the handling and development of these information objects – as well as the decisions that are made on the basis of the information.

In some office environments as on the shop floor, it might make sense to physically move objects and people around in order to streamline information handling. If there is a natural flow of information through an organization, the location of people's desks or offices may reflect that linear flow, enhancing and streamlining communications. But in the 21st Century, administrative, managerial and engineering people may work at different times and in different physical locations from one another – even on different continents. So more often than not, a work flow will not follow a physical route through an office environment, but rather will be best handled by implementing an enterprise application that can be configured to automate the lean communication process. To this end, IFS Applications includes a business modeler that allows users to map processes and route information to the right people at the right time. IFS Business Modeler lets you view your organization in terms of business processes, giving you the insights to re-engineer your business for maximum efficiency, agility, and customer satisfaction in order to earn customer loyalty.

Once an application is identified to help facilitate front-office lean, it's time to begin re-engineering your process – in essence, determining where value is delivered in front-office processes and what activities do not contribute to value and need to be eliminated. Just as is the case on the shop floor, a kaizen event is the tool of choice for kicking off a front office lean initiative. Using this technique, it is possible in a very short amount of time to identify waste in front office processes by asking questions that many companies never ask about their administrative activities. What does it cost to process a purchase order, sales quotation or estimate? What are the steps involved in those processes, and what value is delivered to the customer for each step that we take? How can we eliminate steps that do not add value to the customer?

TAKING LEAN MANUFACTURING BEYOND THE SHOP FLOOR

The goal of this process is to create a value stream map of the processes you follow as a company. At the end of a kaizen event, it should be easy to identify non-value add activities and remove them from your internal processes.

There are several discrete steps in this lean front office implementation.

1. Analyze what people are doing in their respective departments. How do these people bring value to the company and its customers?
2. Determine which people touch which documents and processes and why they touch them. Determine how much of this activity is needless and can be removed from the process flow. Go through value stream mapping by determining how much each step in the process costs and what it contributes to revenue.
3. Optimize the physical environment. In some cases it will make sense to move objects and people around in the office to facilitate more direct and efficient communication and decision-making. Interoffice mail is slow and even email can result in poor communication; both modes of communication could become less necessary if the recipient and sender have direct contact with each other. It's okay to have people from different disciplines sitting adjacent to each other.
4. Optimize processes through automation with an enterprise application. As inventory levels dip to a certain point or a project slips behind schedule, an application should be able to send up an alarm to notify the correct people to take action. An enterprise application can also open itself up to outside suppliers and customers, allowing them a first-hand view of activities they have a stake in. The right application can also automate process flows even when those working on a project are separated by great distances.
5. Monitor your results. Specific metrics – such as takt time – can give you a handle on how your lean practices are impacting your operation. Fluctuations in those metrics can indicate that processes are not being followed, or that new processes need to be implemented to accommodate changes in your business.

TAKING LEAN MANUFACTURING BEYOND THE SHOP FLOOR

While an enterprise application like IFS Applications can be a vital part of a lean front office solution, too often a company's systems come between them and the efficiencies that are necessary to streamline the operation. As you plan to choose and implement an enterprise application to bring lean to front office and shop floor operations, there are specific things to look for.

1. A business process modeler that will help you discover where potential efficiencies lie and where to deploy the application's functionality in order to address your specific company's needs. IFS Application's business modeler can be used to establish a value stream map as well as to engineer and plan optimal workflows. Specific IFS Applications can then be rolled out to suit the business model that is arrived at during the modeling stage.
2. A built-in workflow to automate your processes. Once you decide the optimal flow of information through your front office, the application must be configurable to match your needs, routing action items accordingly.
3. Portals for visibility. Each front office team member should have action items automatically placed on their personal portal. This portal needs to be highly configurable to accommodate individual needs but still ensure that best practices are being followed by each individual. Portals can also be opened in an application to allow front-office workers from outside of the company to collaborate efficiently with their in-house counterparts, extending the automated workflow beyond the company's walls.

## About IFS

IFS, the global enterprise applications company, provides solutions that enable organizations to respond quickly to market changes, allowing resources to be used in a more agile way to achieve better business performance and competitive advantage.

IFS was founded in 1983 and now has 2,600 employees worldwide. IFS has pioneered component-based enterprise resources planning (ERP) software with IFS Applications™, now in its seventh generation. IFS' component architecture provides solutions that are easier to implement, run, and upgrade. IFS Applications is available in 54 countries, in 20 languages.

IFS Applications provides extended ERP functionality, including supply chain management (SCM); enterprise asset management (EAM); maintenance, repair, and overhaul (MRO); product lifecycle management (PLM); customer relationship management (CRM); and corporate performance management (CPM) capabilities.

IFS has over 500,000 users across seven key vertical sectors: aerospace & defense, automotive, high-tech, industrial manufacturing, process industries, construction & facilities management, and utilities & telecom. IFS also provides a cross-industry solution for Retail & Wholesale Distribution.

More details can be found at [www.ifsworld.com](http://www.ifsworld.com). For further information e-mail [info@IFSWORLD.com](mailto:info@IFSWORLD.com)

**[www.IFSWORLD.com](http://www.IFSWORLD.com)**

This support offer has been made in order to respond to the requirements of IFS' customers. Since the customers' requirements may be different in some markets, variations of this offer may exist.

IFS and all IFS product names are trademarks of IFS. The names of actual companies and products mentioned herein may be the trademarks of their respective owners. The example companies, organizations, products, domain names, email addresses, logos, people and events depicted herein are fictitious.

No association with any real company, organization, product, domain name, email address, logo, person or event is intended or should be inferred.

This document may contain statements of possible future functionality for IFS' software products and technology.

Such statements of future functionality are for information purposes only and should not be interpreted as any commitment or representation.