

Lean IT – Using Lean Manufacturing Practices To Drive Strategic Technology Options For Midsize Manufacturing Organizations

The market dynamics for midsize manufacturing enterprises continue to create a challenging environment. There is a constant struggle with how to save money while continuing to meet the demands of increasingly tough customers, many of whom are demanding price reductions and better service. With tightening profit margins, midsize manufacturers continue to be impacted by a slow macro-economic environment and stiff competition from global players.

Current trends suggest that **flexibility** and **responsiveness** will be the most critical attributes of success for midsize manufacturers in 2007 and beyond. These attributes are only heightened by Internet’s impact on distribution strategies, customer service and enhanced means of communication and collaboration.

As the economy begins to show improvements and becomes more demand-driven, these forces will accelerate and require even more business agility. As a result, midsize manufacturing businesses will need to become much more adaptable. IT, when viewed as a strategic management tool, can help.

Lean Manufacturing

Many midsize manufacturing organizations, in one form or another, have adopted the principles and practices of Lean Manufacturing.

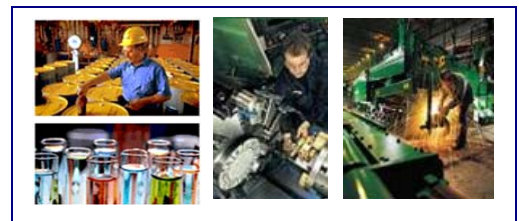
The results are compelling: greater productivity, shorter delivery times, lower cost, improved quality, and increased customer satisfaction. Products are produced as needed, in the amount needed, at the time needed, with minimum materials, equipment, labor and space.

To take advantage of Lean Manufacturing best practices, midsize manufacturers must begin to put all operations and processes, including those shared with suppliers and distributors, under the microscope and begin eliminating non-value-added steps. “To remain competitive they must transform themselves from being factory-focused, top-down and change-averse to enterprise-focused, supply-chain oriented, bottom-up, continuous-improvement companies.” (Gartner Group)

The objective of this white paper is to examine the opportunities to transform your organization. Let’s begin by looking at the technology challenges.

Key Takeaways:

- Midsize manufacturers must improve flexibility and responsiveness
- Lean manufacturing practices apply equally well to the IT function
- Define what IT operations are core to your business versus tactical
- Outsource IT functions that are tactical and reduce cost
- Lean IT should also mean a better managed resource that is insulated from technology changes
- Management commitment to Lean IT is critical for success
- Position your company now for future technology opportunities



Many midsize manufacturers will face the following technology challenges during the next few years:

- Achieving operational concurrency for environment consistency – especially across all locations
- Re-tooling enterprise information systems rapidly in response to changing needs and opportunities
- Transforming information gathered from a vast array of sources into useful knowledge for making effective decisions

If we apply the same management principles of Lean Manufacturing to a mid-sized organization's IT processes, efficiencies can and will happen.

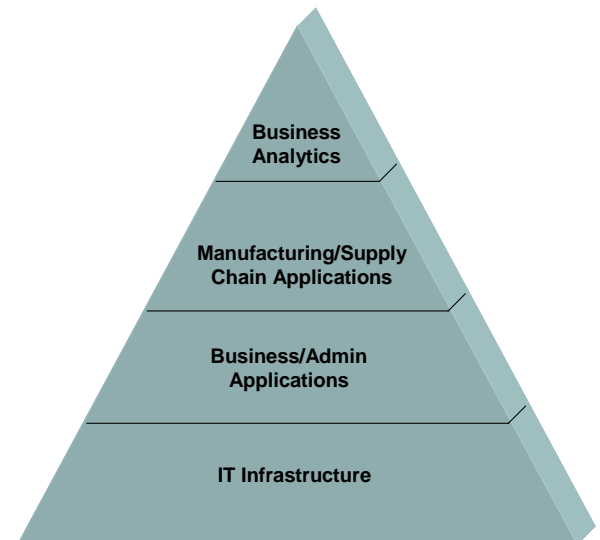
Lean IT – Focus on Strategic, Not Tactical Processes

According to Forrester Research, “market forces of commoditization, miniaturization, industrialization, and globalization, along with changing buyer sentiments, will accelerate a shift in the dominant form of IT delivery by 2012 — from buyers self-integrating technology to having it assembled and managed by outside providers.

“These four underlying drivers aren't new, but their convergence will accelerate this market shift and make it stick: stable operations farmed out to third parties, new IP sourced from open communities and solution brokers, emerging technologies going to market wrapped in process bundles, and new software investments based on subscription rather than ownership. The resulting IT ecosystem structure will place those technology suppliers with the strongest delivery capabilities at the hubs.”

To get 'lean,' IT executives must take a hard look at their operations and categorize or classify the strategic or tactical contribution of the key components. The logical buckets might break down as follows (Figure 1):

- **IT Infrastructure:** including all processing, network, connectivity and security functions (system concurrency)
- **Business/Administrative Applications:** run the business day-to-day (e.g. Accounting, Human Resources, Inventory Management, etc.) (System transformation)
- **Manufacturing and Supply Chain Applications:** the business applications that manage the manufacturing processes (system transformation)
- **Analytical Applications:** management reporting and modeling tools (ability to transform information)



The next step is determining the strategic and tactical nature of the IT processes:

- Strategic processes are those that are unique to your organization – in effect your intellectual property.
- Tactical business and information processes are everyday functions that deliver the strategic information but are not part of your core business.
- Collaborative processes are those where external parties come together to streamline operations. The simplest examples of collaboration are supply chain management applications where parties such as suppliers/vendors and customers share information.

The table below is an example of how an IT executive might classify IT processes and business processes within your organization.

Business Processes	Strategic	Tactical	Collaborative
IT Infrastructure <ul style="list-style-type: none"> ▪ Servers ▪ Network ▪ Security ▪ eMail 		√	√
Business/Administration Applications <ul style="list-style-type: none"> ▪ Accounting ▪ Human Resources ▪ Distribution ▪ Order Processing 	√	√	
Manufacturing Supply Chain Applications <ul style="list-style-type: none"> ▪ Advanced Planning ▪ Forecasting ▪ Warehouse Management 	√		√
Business Analytics <ul style="list-style-type: none"> ▪ Business Planning and Modeling ▪ Enterprise Performance Management ▪ Business Intelligence ▪ Dashboards/Scorecards 	√		
Other: <ul style="list-style-type: none"> ▪ Outsourced Manufacturing ▪ Customer Relationship Management ▪ Material Safety Data Sheets 	√		√

To achieve a 'Lean IT' environment, organizations must determine where their primary investments should be and strategically partner to deliver the other services.

A recent study conducted by Accenture highlights research conducted with over 400 manufacturing organizations that used outsourcing as a strategic alternative in managing their IT functions. Selected charts have been selected to illustrate the findings.

- Figure 3 below highlights the key business advantages of outsourcing.
- Figure 4 below identifies the key factors in choosing a provider.
- Figure 8 below shows the correlation between the outsourcing business objectives and the outcomes.

Figure 3. Business outcome metrics companies use to measure outsourcing performance
 Veterans use a spectrum of "big picture" business outcomes to assess outsourcing performance.

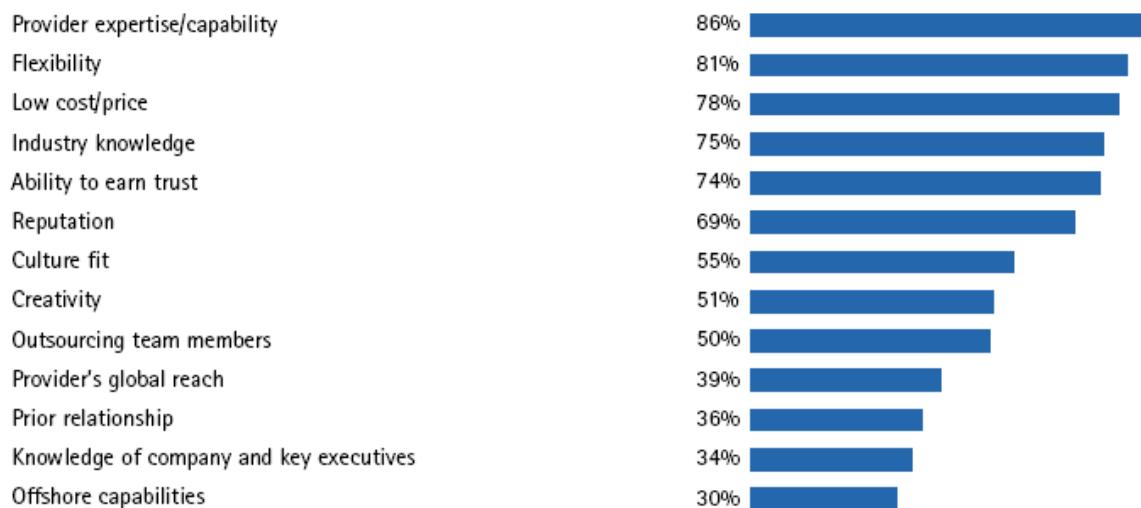


Base: Respondents reporting using business outcomes; 418 individuals or 74% of all respondents

"Driving High-Performance Outsourcing: Best Practices from the Masters" Accenture, 2004

Figure 4. Importance of factors in choosing an outsourcing provider

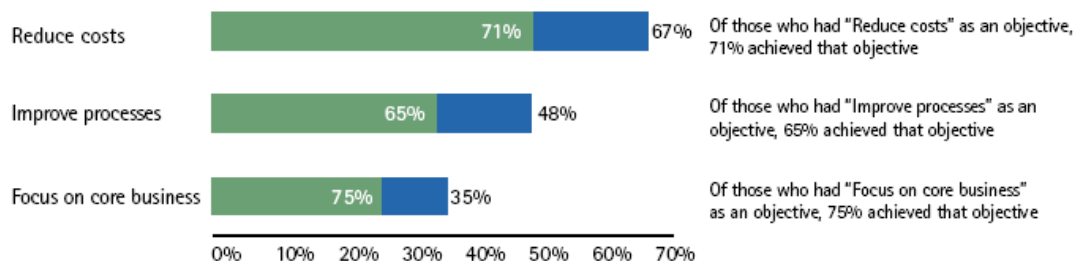
When it comes to selecting an outsourcing partner, the masters look for expertise, flexibility and price.



"Driving High-Performance Outsourcing: Best Practices from the Masters" Accenture, 2004

Figure 8. Percentage of respondents reporting objectives for outsourcing/achievement of objective

Of those who share these goals, 70% on average achieve their objectives.



"Driving High-Performance Outsourcing: Best Practices from the Masters" Accenture, 2004

This Accenture research also referenced the overall importance of **'partnership'** in building and maintaining an effective ongoing relationship. Successful relationships focused on performance measurement and relationship management. Successful relationships were built on trust and a common objective of making the target business successful.

Lean IT – Where to look to get lean

Where are the opportunities to reduce costs in your IT operation? Remember to focus mostly on the tactical operations while keeping your strategic processes and operations close. From a technology perspective, midsize organizations have easy access to the same technology infrastructure components and support as the world's largest organizations. For midsize manufacturing companies this access provides a wealth of opportunities. Here are a few:



- **Infrastructure Management:** Your organization's computing foundation (the infrastructure) offers the greatest opportunity to reduce costs and get lean. Outsourcing to an organization that spends 100% of its time and focus in managing these complex environments has many benefits. Here are the most common types:
 - **Remote Management:** In this model, a Managed Services Provider (MSP) manages your operations from a distance – particularly effective in multi-location operations across multiple states or across world markets. From a single NOC (Network Operations Center), system administrators manage all dimensions of the server and network environment. Remote management can apply to both the server networks and workstations (desktops/laptops) as well. In this model, all your equipment resides at your site(s).
 - **Hosted Services:** In this model, a hosting services organization provides the complete hardware environment for your organization including servers; network switches and firewalls; VPN or other forms of secure remote access; and, in some cases, database management. Rather than the customer owning the infrastructure devices, the hosting services provider supplies everything. Strategic application management is handled by the customer (your organization) providing control, security and maximum focus.
 - **Colocation Services:** In this model, the service provider hosts your applications in a hardened data center environment but the ownership of the servers and network devices remains with the customer. This approach is very effective for organizations that prefer not to incur the costs of building and maintaining a high quality data center.

- **Database Management and Administration:** Database management systems are critical to all manufacturing applications serving as the single repository of data for the organization. They are also highly complex to manage. Database administrators are both difficult to find and are often expensive for the midsize organization. Outsourced database administration services are available to help tune databases to maximum performance, complete necessary upgrades and patch management without your organization having to maintain the skill set internally.
- **Network Security Management:** Network security, including your organization's intranet and extranet, represents great exposure for organization in today's Internet world. Manufacturing companies are increasingly using the Internet to collaborate with organizations up and down the supply chain. Security management is a complex discipline though and needs to be handled by trained professionals. Oftentimes, network security management is integrated with the various infrastructure management offerings listed above.
- **eMail Management:** eMail is a mainstay of business, but the effective management of this technology is challenging for many midsize organizations. Partnering with an email specialist helps reduce staffing requirements.

What's Coming

The services listed above are all effective ways that midsize manufacturing companies can reduce their overhead, increase performance and get leaner. Another important dimension is the ability to take advantage of new technologies as they come to market. There are also new infrastructure management technologies on the horizon that will offer additional opportunities to reduce costs. Let's take a closer look at these and the opportunity they represent.



- **Virtualization:** This is the substitution of physical computing elements, either hardware or software, with virtual or logical components that in fact accomplish the same thing. While the specifics of virtualization are somewhat complex, the simple concept says that a business application (e.g. a module of an ERP system) is not tied to a specific server. If the server environment is configured elsewhere, the application can easily run on another server (within obvious security constraints). This concept opens up innumerable opportunities on how a server network is configured, especially for a multi-location organization. To date, virtualization has applied mostly to hardware configuration but is quickly moving in the direction of operating systems and data center management.
 - **Opportunity:** Reduction in the total cost of delivering an IT infrastructure. Allows the IT environment to

- operate as a virtual power grid where servers can be accessed as needed (often called utility computing).
- **Software as a Service (SaaS):** On demand computing has created challenges and opportunities for organizations. The biggest challenge for midsize manufacturers is the ability to deliver needed business applications in a timely manner. SaaS provides these applications in a different way – instead of an IT organization constructing an application from scratch, when implementing a package internally, a specialized software developer delivers the application and customizes it to the organization’s needs. Access to these applications can be via the Internet or within your organization’s wide area network.
 - **Opportunity:** Reduction in the total cost of building and operating strategic and tactical business applications. Particularly effective in business analytics applications such as on demand Business Intelligence dashboards and scorecards.
 - **Business Process Outsourcing:** There is a growing movement to outsource non-strategic business processes or applications that are not core to managing your business. Business processes such as payroll processing, benefits administration or IT infrastructure management are not part of your core manufacturing business functions and are therefore tactical and can easily be outsourced.
 - **Opportunity:** Keep strategic business functions close to home and let tactical processes and the associated IT instruction support requirements move to a qualified outsourced provider.

Closing the Loop

Change-averse organizations might have difficulties in taking the needed steps to get lean. Many companies exist in a comfort zone where revenue streams are steady and customer satisfaction is good enough. These are often the most challenged organizations and most prone to shrinkage.

Management should worry most when everything seems comfortable. The old adage that if you aren’t growing, you’re dying does apply here. But, even if your organization is growing, the question is whether it is keeping pace with the competition.

The ‘get lean’ mantra is more of a management operating style – a style that constantly examines the status quo for opportunities to change something for the better.

In those organizations where IT is a strategic tool you'll generally find a management team not focused on status quo. They are focused on constant improvements, opportunity investing and performance oriented analytics that keep them informed of their progress at all stages and junctures.

For your organization, Lean IT should mean the following:

- Look for opportunities to reduce costs by partnering to deliver tactical IT functions, keeping strategic applications management close to home.
- Analyze and understand your organization's IT costs and look for ways to reduce cost and improve performance.
- Build a lean architecture that meets your strategic application and business objective while embracing future opportunities such as virtualization and SaaS.
- Think of your network as broadening encompassing customers, vendors and partners.

About VMT

VMT was founded on the principle that any size business can gain the power of the most advanced IT infrastructure technologies – at an affordable price. Using our comprehensive IT infrastructure monitoring and management assessment services, we can improve the stability and predictability of your organization's IT infrastructure. The result: significantly improved performance and value from your computer systems. Our specialties include:

Multi-Location Businesses: VMT specializes in organizations that have multiple locations across the country/world. Our remote management technology allows us to monitor and manage these systems interactively.

Mission Critical Applications: VMT manages simple to highly complex infrastructures, supporting application environments such as ecommerce, ERP, Supply Chain Management and Business Intelligence.

Augment Your IT Staff: VMT can augment the capabilities of your existing IT team. While we focus on the performance of your infrastructure, your IT staff can focus on your organization's strategic growth needs.

Services	Functions
Infrastructure Management	<ul style="list-style-type: none"> • Network Monitoring • Server Management • Operating System Maintenance
eMail Systems Management	<ul style="list-style-type: none"> • Active Directory Maintenance • Domain Management • Performance Management
Desktop Management	<ul style="list-style-type: none"> • Remote Management Services • Configuration and Upgrades • Remote User Support
Data Backup	<ul style="list-style-type: none"> • Digital Data Backup • Offsite Storage • Flexible Retention
Database Administration	<ul style="list-style-type: none"> • Performance Tuning • Patch Management
Application Replication	<ul style="list-style-type: none"> • Database Replication • Application Replication • Environment Replication
Hosting and Colocation	<ul style="list-style-type: none"> • Multiple Data Centers • N+1 Redundancy • Class 3 Rating
Document Management	<ul style="list-style-type: none"> • Structured/Unstructured Data • Email Management • Contact Management
On Demand Business Intelligence (BI)	<ul style="list-style-type: none"> • On-Demand Hosted Solution • Dashboard and Scorecard • User Configurable

For more information on VMT, visit our web site at www.VMTech.net or call us at 888-VMTECH1 (888-868-3241) ext 111, or 770-751-1110 ext 111.