

Myth versus reality: Lean manufacturing

MYTH 4
LEAN COVERS
EVERYTHING

The philosophy and practice of lean have taken hold at large manufacturers around the world. Now smaller manufacturers are adopting it as well—and in the process discovering the myths around lean.

This article is one in a series that takes on some of those myths, identifies misconceptions that can stymie the implementation of lean thinking and practices, and offers practical advice for planning and executing a lean initiative that delivers material financial improvements as well as tangible efficiency gains. This installment takes apart the notion that lean alone is enough to effect a true transformation.

Lean transformations don't stop at the shop floor—not if they're going to succeed, anyway—yet the myth persists that lean transformations are comprehensive on their own.

When a **manufacturing** organization changes its ways of thinking, working, and decision making, it must also make corresponding changes to the larger organization's governance structures, processes, and planning activities. Leaders who fail to address key areas of the business beyond the shop floor are at serious risk of stalling lean transformations in their tracks.

THE NONMANUFACTURING AREAS OF A BUSINESS THAT AN EFFECTIVE LEAN INITIATIVE WILL ENCOMPASS ARE:



Leadership, governance, and budgeting



Staffing and personnel selection



Sales and operations planning



General and administrative functions



Cost oversight and reform



LEADERSHIP, GOVERNANCE, AND BUDGETING

If organizational leaders—from plant management all the way up through executive management don't fully understand, support, promote, and follow through on a lean initiative, the initiative will most likely fail. Management must track numbers and outcomes, hold everyone involved accountable for their roles in the overall plan, and provide as economically and effectively as possible specific resources when needed.

Effective program management begins with setting the right target—not some arbitrary stretch goal but a carefully considered target that is aggressive but achievable. To determine that target, senior leaders, in collaboration with shop floor managers who have process-specific knowledge of what is possible, identify appropriate baselines and set a specific level of performance around them. Lean practices

will likely help the operation progress toward the chosen target, but they may not be sufficient by themselves. Team leadership will have to determine when to apply lean and when to bring other practices and methodologies to bear.

With the target in place, senior leaders must then ensure that the lean transformation team has the resources, both human and financial, that they need to thrive. In addition to securing the services of advanced lean practitioners (commonly referred to as black belts), a successful transformation usually entails timely investments that facilitate major improvements in production throughput or that decrease costs. Sometimes an unconventional measure — such as overriding or expediting the standard capital-expenditure (CapEx) approval process — is required to free up the funds for such investments.

To bypass the usual approval process, transformation leaders can:

- Earmark funds in the program budget for expenditures that take advantage of opportunities as they arise—opportunities that may not become apparent until the transformation is under way.
- Establish a steering committee that includes at least one executive member and one shop floor management representative to set return-on-investment thresholds, define who can authorize spending out of the discretionary account, impose expenditure limits, and steer the overall program.

Those moves eliminate the need to run every expenditure past the finance organization and thereby enable the direct communication of results, quick identification of roadblocks, and rapid response to requests for auxiliary support. Active executive engagement will convey the importance and necessity of the improvement program to all levels of the organization.

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CASE EXAMPLE

A chemical manufacturer discovered the value of an expedited CapEx-approval process when an analysis of its operations revealed that by acquiring or replacing certain pieces of equipment, it could expand the capacity of a key plant. Although the expenditure promised to generate a 5x return on investment, it never got approved because the company had made no provisions for ad hoc capital outlays. Vowing never to miss such an opportunity again, the company's senior leadership implemented a new and rapid CapEx-approval process that would authorize management to green light and fund such investments in the future.



STAFFING AND PERSONNEL SELECTION

Success begins and ends with an organization's people. It is important to be brutally honest about the people who will be accountable for the lean initiative, including senior leadership, the onsite management team, and supervisors across every function. To assess the team members' capabilities, transformation leaders can ask:

- Do the team members have what it takes to achieve their targets?
- Are the team's spans and layers of control, their decision rights, and their accountabilities clearly defined?
- Do they have the right skills and mindsets to take on the initiative and drive it to a successful conclusion?
- Can management rely on them to model the right behaviors?
- Are they analytical and focused on results?
- Do they seek to understand problems, not lay blame?
- Do they promote success through teamwork and accountability?

If the answer to any of the questions is "not today," then the next step is to determine whether training has been sufficient to fill gaps and remedy shortcomings or whether the team's skill set needs augmentation. Each team member has a part to play, and those who are not up to the job or not aligned with the initiative will be drags on performance and execution.



SALES AND OPERATIONS PLANNING

The holy grail for every manufacturing facility is the longest and most-accurate-possible demand forecast. The better the forecast, the greater a plant's ability to freeze schedules and optimize production throughput and costs.

Consider changeovers. Optimizing a changeover process to minimize lost time is a standard component of the lean tool kit. But what if some changeovers could be eliminated altogether? By looking upstream to make sure that production scheduling takes into account manufacturing constraints and costs, management may well become able to identify opportunities for improvement.

CASE EXAMPLE

An industrial products manufacturer recently eliminated an offer to a category of customers because the offer significantly degraded its manufacturing capability. The sales organization believed that the offer—for three-day delivery of certain custom products—was a key differentiator from the company's competitors. But the manufacturing organization didn't share the sales team's enthusiasm, noting that the offer locked the plant into making and shipping the product the day after the customer ordered, thereby making it impossible to freeze a schedule beyond the next shift. Worse, the offer gave customers an incentive to place more frequent, smaller orders, which meant even more changeovers for the plant.

After discussing the problem with the sales organization and customers, management decided to limit the three-day offer to a small segment of high-value customers and offer one- or two-week delivery to a wider band of customers. The move enabled the manufacturer to reduce expedited orders, increase average order sizes, and improve its on-time, in-full metric.



GENERAL AND ADMINISTRATIVE FUNCTIONS

General and administrative functions are major sources of potential efficiencies and process improvements, although lean programs rarely address them. Standard processes such as order entry, purchase orders, accounts payable, and accounts receivable can be evaluated and improved in the same manner as can manufacturing processes, which under a lean approach are subject to automation, streamlining, and bottleneck reduction. The accounts payable process can

usually be improved significantly by means of simple process improvements such as automated approval routings, clearly delineated approval thresholds, and aging flags to avoid late payments. One warehousing and distribution company that recently implemented those improvements reduced the level of effort devoted to the payables process by nearly 40% while saving thousands of dollars each month in late-payment penalties.

Order entry, purchase orders, accounts payable, and accounts receivable can be evaluated and improved under a lean approach—subject to automation, streamlining, and bottleneck reduction.



COST OVERSIGHT AND REFORM

Lean focuses on improving efficiency on the shop floor, but management must also focus on costs elsewhere in the organization if it is to fully deliver on the promise of lean. Significant savings typically result after enhancing maintenance effectiveness, actively managing warranties and replacements, and optimizing quality and materials.

MAINTENANCE EFFECTIVENESS

In manufacturing environments, maintenance is usually a major source of indirect costs, and even though lean programs usually identify needed changes in maintenance procedures and preventive maintenance schedules for specific equipment, they typically do not address higher-level maintenance issues and overall costs.

Savings opportunities include:

- The work order-entry process
- Planning and scheduling
- Critical spares identification and management
- The work order-close process—to capture work performed and time spent

In addition, the identification of appropriate key performance indicators (KPIs) is critical to effective maintenance. A poorly designed set of KPIs will drive the wrong behavior.

CASE EXAMPLE

An industrial services company had set a goal of closing all maintenance work orders by the end of each day. Company leaders believed that the goal would encourage maintenance staff to complete work orders in a timely fashion. In reality, maintenance staff gamed the KPIs by creating work orders only after the work was completed, thereby making it impossible for maintenance managers to plan effectively. Managers had no idea what the maintenance backlog actually was, and they lacked visibility into maintenance status and performance. As a remedy, management implemented a new process that effectively made it impossible to begin any job without opening a corresponding work order. The process also ensured that shop floor managers measured planned versus unplanned maintenance, that they ranked completion and backlog goals by urgency and importance, and that they set reasonable corresponding backlog targets to drive the right behavior.

WARRANTIES AND REPLACEMENTS

In the identification of potential improvement projects, it's important to start with a wide frame of reference. By taking a broad view, management can tackle problems from a total-cost or total-risk perspective and not focus solely on the direct cost to manufacture. Consider, for example, warranties and replacements from that perspective. The cost of correcting a defect once a product leaves the manufacturing facility can increase by 10 to 100x, which can quickly wipe out any savings achieved through an improvement program—and pile on hazard and safety risks in the process. When selecting which opportunities to pursue, effective teams consider the longer term risks and opportunities of their action—or inaction—as well short term costs such as labor and scrap.

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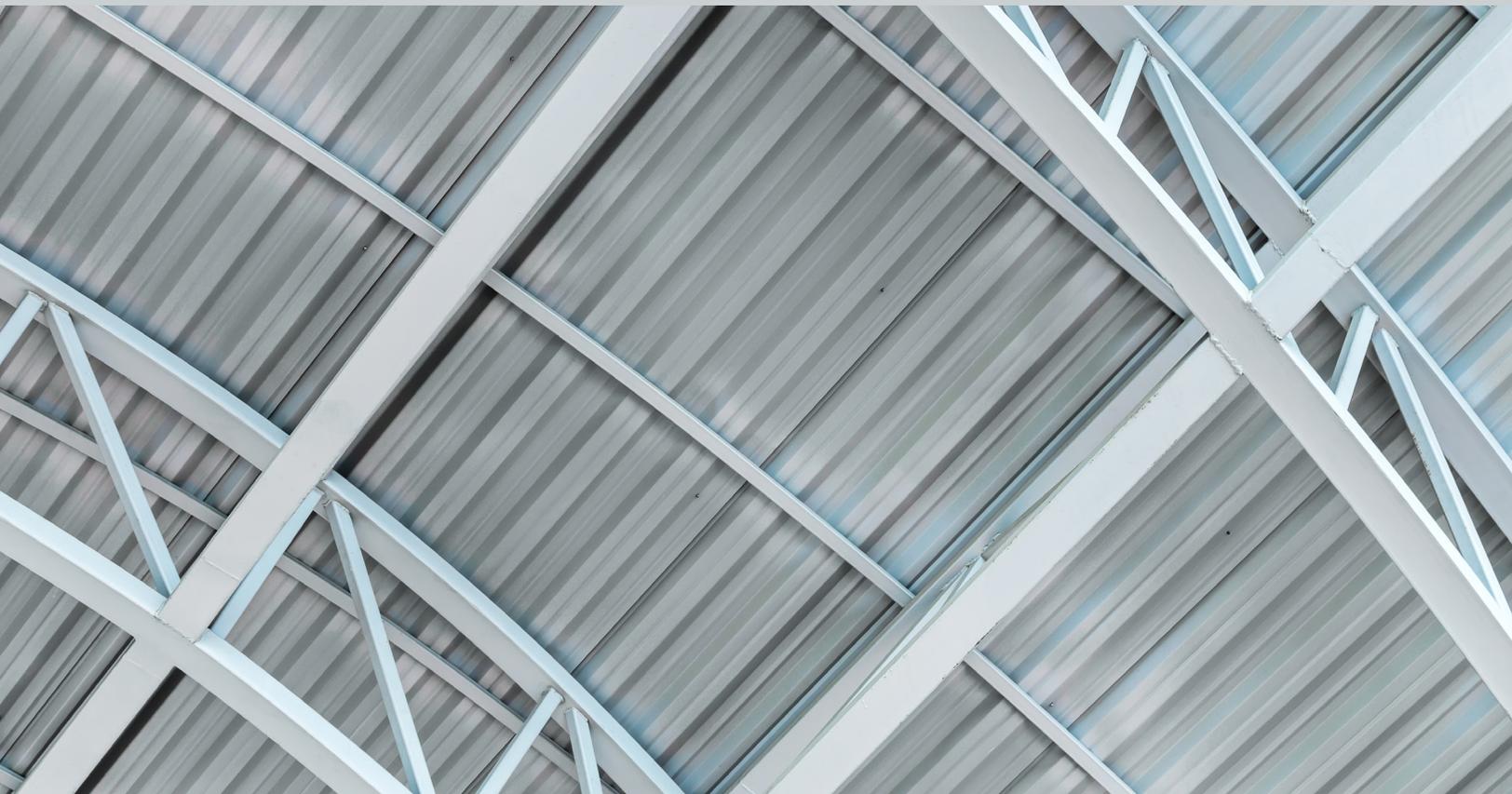
QUALITY AND MATERIALS

Material costs represent another source of potential savings. Although it is obviously important to minimize waste and optimize throughput and conversion losses, a larger benefit might be realized more quickly by ensuring that the plant obtains the most-suitable materials at the best costs from the right supplier.

CASE EXAMPLE

There's more to sourcing the right materials than just negotiating the lowest possible cost. Procurement organizations that simply go with the low bidder are not taking into account the impact that their cost-saving approaches have on production. For example, the shop floor team at an injection molding company recently traced an uptick in novel quality problems to a change in vendors for a particular resin. The new vendor's input met the specification for average pellet size and saved several cents per pound, but that average consisted of wider variances than the input supplied by the prior vendor. The variances resulted in multiple rejected batches of finished product that cost far more to rework than the company saved in materials costs. The company returned to its original supplier.

In other cases, plants can identify inputs for which the specifications are tighter than necessary, which can present an opportunity to source a less expensive material.



Conclusion

Senior manufacturing executives know all too well that lean transformations often promise more than they deliver. The reasons vary from case to case, but the shortfall can usually be traced to a lack of focus on cash generation, a failure to prioritize projects according to their financial impact, insufficient buy-in from senior management, inadequate or misdirected investment, or inflexible business processes that don't change with manufacturing practices.

Successful transformations rely on leaders who recognize that there is a lot more to lean than only reorganization of the shop floor. Along with building a culture of lean thinking and the implementation of lean tools, leaders of successful transformations select their targets carefully. They prioritize those that promise the greatest cash savings. They take a broad view of the transformation by looking for opportunities to optimize **total** plant performance rather than only the performance of one line or one machine. They manage the initiative rigorously. And they keep a close eye on KPIs to identify any backsliding or performance gaps.

That's how they reach the elusive goal of a lean transformation: material improvement of quality at materially lower cost.

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These are the moments when everything is on the line – a sudden shift in the market, an unexpected performance decline, a time-sensitive deal, a fork-in-the-road decision. But it's not what we do that makes a difference, it's how we do it.

Tackling situations when time is of the essence is part of our DNA – so we adopt an action-oriented approach at all times. We work in small, highly qualified teams with specific industry and functional expertise, and we operate at pace, moving quickly from analysis to implementation. We stand shoulder to shoulder with our clients until the job is done, and only measure our success in terms of the results we deliver.

Our approach enables us to help our clients confront and overcome truly future-defining challenges. We partner with you to make the right decisions and take the right actions. And we are right by your side. When it really matters.

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