



TACKLING CRITICAL FACILITIES ISSUES
THROUGH THE

Hidden Power of Lean

(It's not what you might think)

How can a Lean manufacturing approach help the educational facilities organization tackle their most daunting challenges? Let's start with a well-known Lean story.¹

Years ago, the CEO of Ford Motor Company (Harold A. "Red" Poling) was envious of the great performance that Toyota was regularly achieving, and he wanted to understand why. Poling asked the head of Toyota's U.S. manufacturing operations for a tour of a Toyota plant. Toyota obliged, and Poling showed up with a team of people and spent hours inspecting the plant, only to leave disappointed. Why? They had not seen a super-automated factory, nor experienced any epiphanies to explain why Toyota was so successful. In fact, what they saw was the same equipment, systems, and engineering know-how that they had at Ford.

Why, then, was Toyota achieving greater success? Toyota's real competitive advantage was not related to expensive equipment or new manufacturing methods. It was what the Ford team could not see—Toyota's people and culture, deeply supported by its processes.

In other words, Ford did not see the transformational power of Lean.

WHAT DOES THIS HAVE TO DO WITH MY FACILITIES TEAM?

Like Ford, campus facilities leaders are facing many intractable challenges—deferred maintenance, reduced funding, rising costs, an aging workforce, broad energy and sustainability targets, and much more. As facilities leaders, we want to understand what best practices exist on other campuses, so that we can bring those great ideas to back to our own campus and replicate them.

Unfortunately, looking to our peers for solutions doesn't always work, and we find that some practices that are successful at one campus are not at all successful at another. Why? The critical facilities issues facing most campuses are often not just *technical*, for which the problem is understood and can be solved with a "best-practice" solution.

Critical facilities issues can also be *adaptive* challenges, where we need to change our understanding, attitudes, or habits in order to truly understand the problems and innovate to develop solutions. For instance, replacing an air handling unit that has failed is a *technical* challenge that facilities departments already know how to tackle. In contrast, changing the approach and mindset of a facilities organization to reduce overall corrective maintenance costs and improve maintenance processes to avoid a failed air handling unit in the first place is an *adaptive* challenge.

This is where the hidden power of Lean can help.

WHAT IS LEAN?

Most of us have likely heard of Lean and are not surprised that this article started with a manufacturing story. However, the possibilities of Lean go far beyond the assembly line and operational process improvements. Most simply, Lean can be thought of as a way to deeply understand problems and then learn and work together—with leaders, managers, and boots-on-the-ground staff—to solve those problems. Lean asks us to relentlessly consider what our customers and stakeholders value and to show a deep respect for our people by engaging staff at all levels to come together and figure out how to deliver that value and remove the obstacles that are getting in the way. This is an ideal approach for both technical and complex adaptive problems.

There are many Lean tools and problem-solving techniques, but the fundamental power of Lean can be found in four elements: Purpose, People, Processes, and Performance—the "4Ps." Most people associate Lean with the third "P"—Process—but it is the linkages between all of the 4Ps where transformative change takes place. It is those linkages that separated Toyota from Ford, and it is those linkages that Ford couldn't see.



HOW HAVE A FEW HIGHLY SUCCESSFUL FACILITIES TEAMS LEARNED TO HARNESS THE 4PS OF LEAN?

Let's hear from our peers:

Case study #1: A large public institution with not enough resources

How many of us are faced with doing more work with fewer people? That was the case at a public university on the West Coast. The facilities department was faced with an increasing number of projects amidst an already stressful, excessive workload. To top it off, the department lacked funding to increase capacity to match its project load. Along with those demands, staff and leadership needed to lower the cost and improve the timeliness of project delivery, improve customer experience ratings, and somehow create a healthier workplace with less stress. This required more than a best-practice technical solution; it was an adaptive challenge that needed a system-wide solution. So, the university decided to pursue a Lean approach.

To tackle this challenge, the associate vice chancellor of capital programs brought together the entire department and its customers to understand the core purpose of the Capital Programs department and to assess honestly how it was performing to serve its customers (the *purpose* of their daily work). This was the beginning of the staff's Lean journey that has changed the perspectives, skills, and capacity of the organization. By understanding people's unique experiences, Capital Programs was able to see together where the biggest costs, time, and stress were occurring.

Staff identified six processes that, if improved, would have the largest impact on decreasing their workload and improving customer experience. As staff worked on the technical challenge of improving each process, they were also coached to learn a new way of thinking and acting to increase value, reduce waste, and respect people. This catalyzed more than *process* changes; they were connecting to *purpose* (what customers valued and the related strategy of the department), making *performance* visible (so they could see problems), and each one of the *people* involved was developing his or her ability to understand and tackle problems.

They also were able to see that the structure of the department was sometimes getting in the way. Instead of simply drawing a new organization chart, Lean thinking helped them design a structure so that roles were clear and processes flowed more smoothly (e.g., taking out approval bottlenecks). They have now begun to match peoples' capabilities and areas of satisfaction with their work assignments—and this also contributes to improving capacity.

As the department harnessed the hidden power of Lean, it achieved impressive results:

- 76% improvement in data accuracy of work orders
- 75% improvement in time needed to respond to customers about work order requests
- 23% improvement to the work order process
- 50% reduction in time for project initiation (from 3-4 days to 1-2 days)

There are additional benefits that are hard to quantify but just as valuable. As the staff continue on their Lean journey, they are experiencing transformational change in which people are addressing some of the most critical problems and alleviating many of the stress-inducing tensions on a daily basis. People have shared lessons such as, "I didn't realize how much occurred before the financial piece, and how many handoffs there are!" and "Process standardization is freeing up resources," and "This was a collaborative, gratifying process." In short, they are creating a healthier workplace *and* getting more done.

Case Study #2: A large private university chipping away at deferred maintenance

Some lucky institutions have been able to regularly increase the percentage of resources allocated to facility operations and capital renewal on an annual basis. More often, that level of funding is only enough to keep up, not enough to catch up.

The Department of Facilities Management was limited financially in its ability to maintain and renew assets in a way that aligned with the department's mission and vision and provided better service to building occupants. At the same time, emergency and unplanned maintenance was on the rise, with 75 percent of all work orders spent on costly unplanned or corrective maintenance. Planned preventive maintenance (PM) was completed on time only 60 percent of the time. Making progress would require fundamental changes to the department's approach and mindset—an adaptive challenge. So, the university enlisted the Lean process to help.

The project goal was to identify ways of decreasing long-term capital renewal needs and daily operating costs by redirecting facility maintenance staff time from corrective maintenance to preventive maintenance. Using Lean thinking, and starting with the premise that the root causes of problems were not fully understood, the facilities staff set out to examine the current state of its systems and processes. The Lean funda-



mental of “respect” tells us that the people in the best position to deeply understand the current state of maintenance operations are the people closest to the work. As a result, the project team engaged 133 people including building occupants (their customers), tradespeople, supervisors, and management from Operations, Engineering, and Planning, Design & Construction to develop a new approach for their preventive maintenance strategy.

Spending time deeply understanding the current state led the university to two major process innovations. First, the team established a prioritization approach for maintaining different building portfolios and their associated assets. In doing so, they could focus on the work that would have the most impact with the least amount of difficulty. Second, the team identified major opportunities to improve maintenance work. The team went beyond an extensive review of work order processes (a common application of Lean) to add an explora-

tion together with the maintenance staff of how they operate on a daily basis.

By looking at processes and typical behaviors together, the team was able to find hidden resources in more than 55,000 hours of staff time that could be reallocated from activities that do not deliver value to their customers to processes that do. This was *not* asking them to work harder; rather, it helped remove daily frustrations (such as time spent waiting for parts) and made daily work more enjoyable. The previously hidden resources are now being redirected to preventive maintenance, as opposed to more costly corrective or emergency maintenance.

Like the public institution in Case Study #1, the university realized other important results that are hard to quantify, but best described by one of the trades staff: “We’ve had people... make recommendations, but this is the first time that anyone has asked us what we think.”

WE’LL GROW YOUR TREES WHILE YOU GROW YOUR BUSINESS.

We’re Bartlett Tree Experts, a 100+ year old tree and shrub care company with global reach and local roots. We provide expert, attentive service, a safety-first record, and a wide spectrum of services, including:

- Tree & Shrub Pruning
- Cabling & Bracing
- Fertilization & Soil Care
- Insect & Disease Management
- Inventory & Management Plans



Call 877.BARTLETT (877.227.8538) or visit BARTLETT.COM



The **FOUR “P”s** of LEAN

PURPOSE

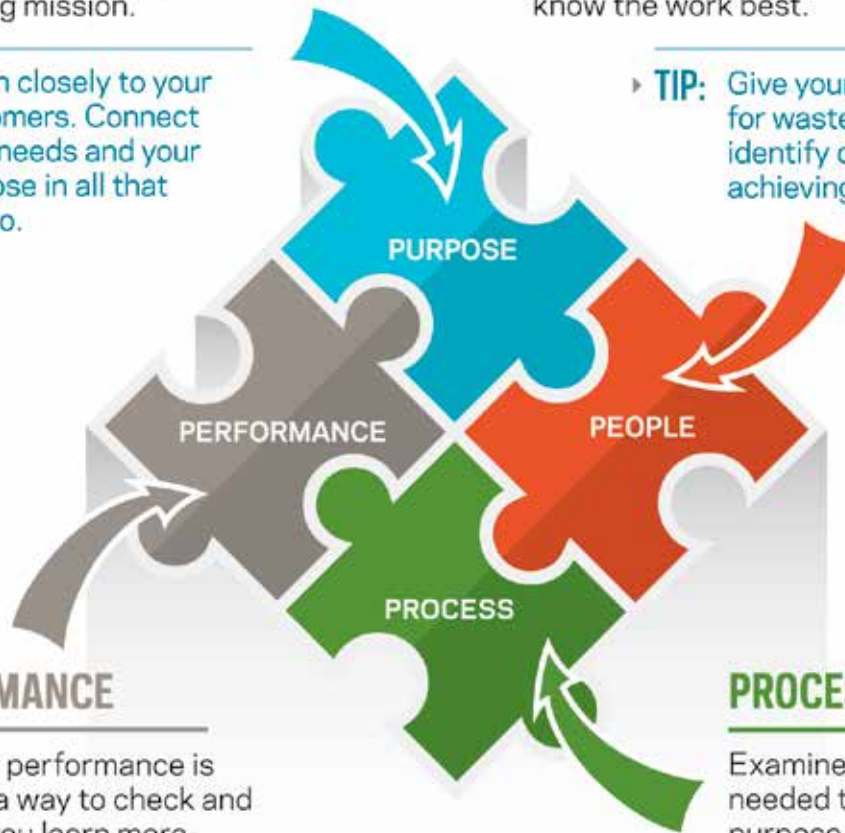
Connect daily work to your overarching mission.

- ▶ **TIP:** Listen closely to your customers. Connect their needs and your purpose in all that you do.

PEOPLE

Engage the people who know the work best.

- ▶ **TIP:** Give your people “eyes for waste” so they can identify obstacles to achieving your purpose.



PERFORMANCE

Measuring performance is critical as a way to check and adjust as you learn more.

- ▶ **TIP:** Make both positive and negative results easily visible to everyone.

PROCESS

Examine what’s truly needed to deliver your purpose, and seek to eliminate what is not.

- ▶ **TIP:** Expect time, effort, and iteration for continuous improvement.

THE KEYS TO UNLOCKING THE HIDDEN POWER OF LEAN

These stories illustrate how the 4Ps of Lean help institutional leaders with vision and strategy, operational effectiveness, change management, and even professional development.

As institutions that apply Lean in facilities are learning, sustained change is achieved when each of the “Ps” work together. Lean helps teams to connect these four elements so that your own people can tackle critical issues and make things better for your customers along the way. This makes Lean far more than a “tool for better processes.” Rather, Lean becomes a systematic way to engage the extraordinary potential of your people to understand problems and innovate to find solutions that work best

for your culture and your challenges—and unlock the hidden power of Lean. 📄

ENDNOTE

- 1 *Toyota Culture: The Heart and Soul of the Toyota Way*

Melissa McEwen (mmcewen@haleyaldrich.com), Meredith Hargreaves (mhargreaves@haleyaldrich.com), and Steve MacIntyre (smacintyre@haleyaldrich.com) are members of Haley & Aldrich’s Facilities Operations and Management consulting team. This is the first article for *Facilities Manager* by Meredith Hargreaves.