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# NO TIME, NO MONEY? GET LEAN.

*Applying Productivity and Quality Tools to  
 Public and Affordable Housing*

BY MARK FRATER

The public housing sector is faced with an ever-increasing problem: as budget constraints reduce funding for housing authorities (HAs), how can HAs continue to serve a growing public demand for affordable housing? In other words, how can we do more with less? One solution is an industrial engineering philosophy called Lean Thinking. This way of thought was brought into being and popularized by a team of engineers working at Toyota. In Japan's struggling post-WWII economy, Toyota faced the

## Lean Thinking Can Mean Large Improvements

Over the Lean Firm's last few years of work with the Akron Metropolitan Housing Authority (AMHA), the results of its Lean conversion include:

### Significant cost reduction in operations

—AMHA reduced its operating costs by \$1.7 million and eliminated over 3,750 pounds of duplicate paperwork

### Sizeable improvement in customer service reaction time

—AMHA improved its customer service reaction time in the Housing Placement Department from 67 days to mere hours

—AMHA improved its vacancy turnaround times by 43 percent

### Dramatic increase in productivity

—AMHA processed over 200 percent more applicants with no additional labor

Lean Thinking has provided the foundation for elimination of waste and enabled the AMHA to deliver services quicker to clients in a more cost-effective manner.

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challenge of growing its business in a highly competitive market. Because the company had little to no capital to invest in automation improvements, the Toyota engineers developed a philosophy, now called Lean, which utilized the resources they had and cleaned up their operations in order to make more with less. This article will provide a brief overview of the Lean Thinking system and a case study of the implementation in the Akron (Ohio) Metropolitan Housing Authority.

## WHAT IS LEAN? AN OVERVIEW

Lean is a business philosophy characterized by eliminating non-value added activities (NVAs). NVAs are any activity that adds cost without adding value to the product or service. A Lean organization systematically eliminates waste in its operations by using the minimum amount of labor, materials, cash, machines, space and other factors to get the job done on time.

Traditionally, U.S. organizations focus productivity and cost improvement efforts on enhancing value-added activities (VA), such as buying new software or automation. While new technology can often speed up processes, it is counterproductive to merely speed up a step that could have been completely eliminated. It is always the best practice to make your organization Lean and waste-free before transitioning to new software or other

helpful technologies. While it is true that technological advances do help performance, it is by eliminating NVAs that companies realize the most cost improvement. Astonishingly, many processes contain as much as 75-90 percent NVAs!

## KAIZEN: GOOD CHANGE FOR INCREASED IMPROVEMENT

Kaizen is a Japanese word that, literally translated, means "good change." Kaizen is the primary means of employing Lean in the workplace and training employees with regard to continuous improvement concepts. Kaizen challenges employees to find creative solutions to problems without using additional capital. Kaizen workshops examine a specific process and involve the people working within that process to improve it. NVAs are often accumulated over many years, after many different employees have altered a process to fit their own working systems. While not all of these changes are bad, many processes are simply repeated because of habit rather than need.

Kaizen workshops are led by a Lean consultant who trains a team of staff members from all levels within the organization. The workshops, which usually take three days, are designed to help the team figure out ways of eliminat-

ing waste—whether by evaluating a process or reconfiguring a space. During the workshop, the Kaizen team takes action to make improvements immediately.

**Day 1**—The team is trained in simple productivity and quality tools used to implement change.

**Day 2**—The team documents current processes and identifies process variation and Non-Value Added Activities.

**Day 3**—The team brainstorms on how all the waste

can be eliminated and tests improvements.

At the end of the workshop, the team presents its ideas to management for approval.

This team-based approach to problem solving creates tremendous buy-in throughout the organization. Kaizen workshops immediately and permanently eliminate NVAs and reduce business process variation.

The magic of Kaizen is involving the people that actually do the work, they who are most equipped to implement and sustain efficient change.

## REPORTING SYSTEMS

Any organization that maintains and sustains Lean must use reporting systems. Scorecards or brief snapshots that include up-to-date data help locate where the department or organization is at all times in relation to previously designated goals. Employees and managers are trained to use these scorecards as an early warning system, measuring variances against the goals on a daily and weekly basis.

## CASE STUDY: THE AKRON METROPOLITAN HOUSING AUTHORITY

The improvement of the AMHA's application process can be used as an illustration of how to implement Lean Thinking. Prior to initiating a Lean method, the application process took on average 67 days. Pre-applications were taken and put on a waiting list, and then appointments for full applications were regularly scheduled from this list. Due to the housing needs of the applicants, many people had moved during the time between pre-application and full application. In addition, of those who were contacted, 30-40 percent would not come to the scheduled appointment. Once a full application was taken, these applicants were then placed on another waiting list. Due to the length of the process, the number of clients on the wait list

### The seven Non-Value Added Activities (NVAs) to eliminate in any organization are:

**Overproduction**—Producing more information than is needed.

**Waiting**—Idle employees, material, or customers.

**Inventory**—Holding more information or material than is currently needed.

**Transportation**—Unnecessary movement of information or equipment.

**Motion**—Unnecessary movement of anything.

**Processing**—Any work containing excessive steps.

**Defects**—Reworking errors in work.

was low, resulting in poor utilization and occupancy turnaround times.

If AMHA had spent money on new



technology to speed up this rather lengthy process, each step in the process would have remained and the time savings would not have been as great. Instead, the Lean firm chose a cross-functional team of employees to participate in a Kaizen event. After the first day of training, the employees identified areas of variation and waste. The team discussed several ways to improve the speed of customer service and agreed to implement an open enrollment schedule to process applications. After implementing Lean through a Kaizen workshop, the applicant waiting time was reduced to one day.

By reducing the time it takes to complete one process, employees no longer continue to re-visit or re-work tasks. Imagine the number of times an employee working on one application must have seen, re-read, re-shuffled, moved or re-organized the information involved to admit one new applicant prior to this reduction. In addition, the utilization of housing increased from 96 percent to 99 percent within six months. By breaking down the constraints and allowing new applicants to be processed and, in turn, housed faster, the AMHA helped improve the total occupancy time by over 50 percent.

## JUST IN TIME

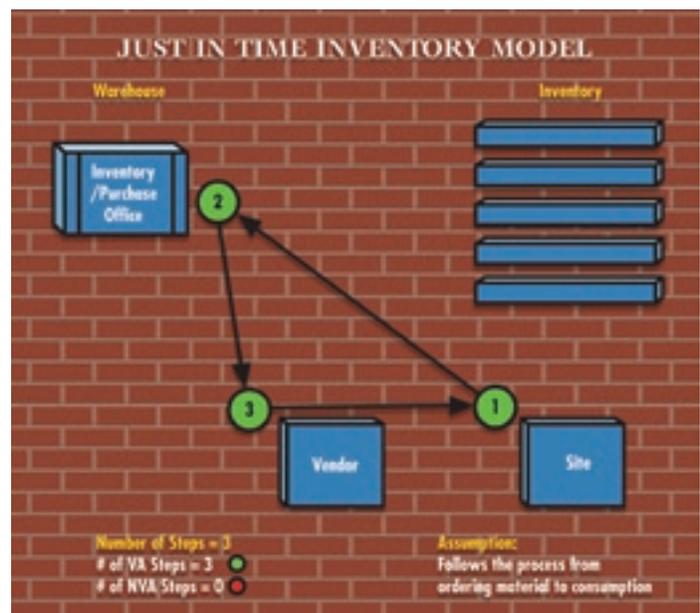
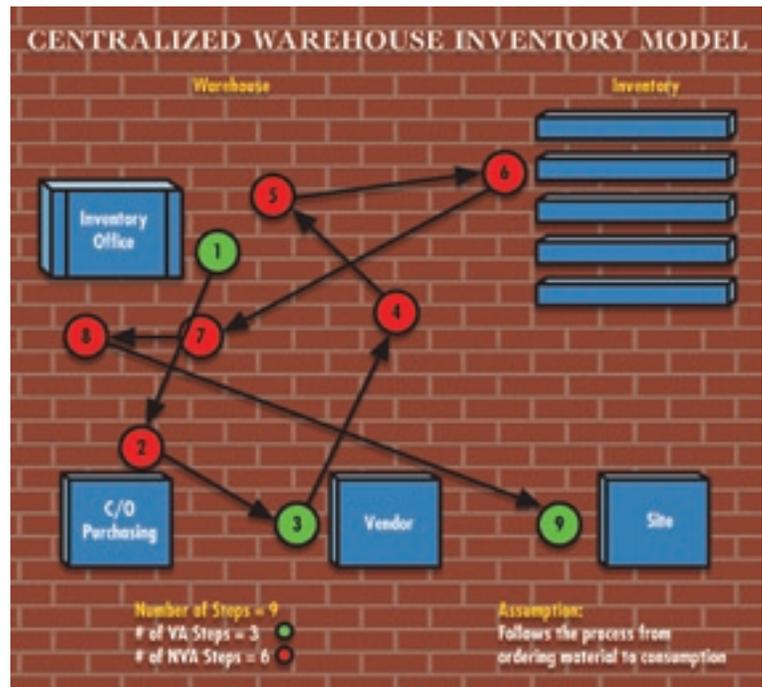
Another very important aspect of the Lean organization is having just enough: what you need, when you need it, and in the correct quantity. Too much space, time and money is wasted storing, managing and tracking things that you do not need.

Although inventory is technically an asset on the books, it is a depreciating one. The AMHA had a large central warehouse in which it kept items that might be used in the future. Employees were re-ordering items that were no longer usable, and paying to heat, manage, count, sift

through, save, pack, unpack, shelf, purchase and house items that were waiting to be used, or in many cases, waiting to be recognized as no longer useful.

This is a common problem, not only in HAs, but in any organization that holds inventories. Imagine building a new garage to provide shelter for a new car that you purchased and then having to clean, maintain, and let the new car sit while you wait for your current and reliable car to break down. All the while, the new car continues to lose value as it sits in your garage, fully insured and unused. We live

in a time where goods and services are made available to us immediately. When an organization holds items to sit and wait, it is not only wasting time and money, but also maintaining a commitment to the old goods and services. If, for example, a maintenance employee discovered a refrigerating system that was energy-efficient, inexpensive, and needed fewer repairs than comparable systems, it would be a great benefit if the organization could make this kind of improvement immediately, instead of waiting years to consume old inventory. The



only time you need to hold inventory is when there are long lead times. Organizations need to ask themselves, "If I can get something in a few days, do I really need to hold it in my inventory?" Isn't money spent more wisely if it is used to promote the vision of the housing authority, rather than to amass a small distribution center?

The implementation of Lean Thinking with regard to the over-inventory issue involved the AMHA moving from a large central warehouse to a Just-In-Time supply system. During the assessment, the AMHA discovered that the central warehouse was overstocked, minimum and maximum levels were not set according to lead time and consumption, and that employees who were managing the inventory could be useful elsewhere in the organization. After identifying these problems, Lean consultants worked with staff to identify all obsolete inventories and develop a focused attempt to consume and liquidate the central warehouse inventory. As a team, we solicited bids for services that would fulfill and deliver necessary inventory directly to the sites (Just in Time).

The Just in Time implementation helped AMHA reduce costs by about \$400,000, as well as improve the management of its inventory. Employees who had previously been managing non-value added activities were redeployed to value-added positions in the agency.

## CONCLUSION

According to Tony O'Leary, Executive Director of the AMHA, "During a time when resources are scarce, [Lean Thinking] helped us do a better job. [It] helped us achieve results that we would never have done on our own... [and] has truly saved us time and money. And we understand how to improve business processes by using Lean systems."

The vision of HAs has always been to provide affordable housing for citizens of the community. They have a great responsibility. However, as demands increase

and public funding decreases, HAs are being asked to maintain their vision and find creative ways to increase or maintain production with fewer resources. It is time to take advantage of knowledge before technology. By simplifying processes, employees are less burdened with work, able to focus on the vision of their job as it relates to the larger vision of the housing authority, and are given the tools to sustain as well as continually improve their jobs. As you consider making improvements in your organization, but feel burdened by the already depleted funds available, realize that the tools of Lean Thinking can uncover and help you utilize time and money that already exists in your organization.

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**Mark Frater is President of the Lean Firm ([www.leanfirm.com](http://www.leanfirm.com)), a specialized consulting firm helping organizations significantly improve productivity, quality and morale. He has worked with a variety of city, county and federal government clients throughout the United States, and has managed process improvement projects at several housing authorities focusing on: Housing Placement, Recertifications, Property Management, Security, Fleet Management, Inventory Control, Resident Services, Purchasing, Accounts Payable, and Maintenance. His efforts to eliminate non-value added activities has resulted in millions of dollars in cost-reductions, dramatically improved customer services, and improved employee communications and job satisfaction. You can contact Mark at 216-577-1782 or at [mfrater@leanfirm.com](mailto:mfrater@leanfirm.com).**

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## AMHA LEAN PROJECTS

**Inventory Management**—Methods to reduce on-hand inventory and usage by utilizing tight controls and tracking systems

**Just in Time (JIT)**—Replaces the "batch" inventory system with a just-in-time drop-shipping program to reduce carrying costs

**Fleet Management**—Impressive reduction in fleet costs with improved preventative maintenance program

**Housing Placement and Recertification**—Dramatic increases in employee productivity; improved throughput & utilization with fewer employees

**Maintenance Turnaround**—System designs and reorganizes the department structure to improve vacancy and work-order turnaround

**Rent Recovery**—Identification of past due amounts by former residents and accelerated methods to collect

**Robust Fraud Systems**—Creates fraud identification and collection systems

**Purchasing and Accounts Payable**—Focuses approach in eliminating unnecessary paper and purchase orders

**Maintenance Standards**—Develops maintenance benchmarks to measure productivity and forecast labor needs

**Business Reporting Systems**—Timely measurement systems put in place to ensure new processes stay in tune