

# Are You Playing The Lean Game?

*Evaluating the food industry's lean comeback.*

Karen Langhauser, Editor-in-Chief

**T**he implementation of lean manufacturing has become quite commonplace throughout U.S. manufacturing industries – and for good reason, as the lean approach has proven itself invaluable in terms of increasing efficiency, productivity and employee morale. Lean thinking offers a fundamental shift away from traditional manufacturing towards a more systematic approach, focused on the reduction of any non-value adding or wasteful activities.

Ten years ago (with a few exceptions), the food manufacturing industry was very much lagging behind in its pursuit of lean thinking; however, today's food industry is rapidly gaining ground and offering further proof as to the versatility of lean.

There are several possible explanations as to why the U.S. food industry did not catch "lean fever" as quickly as other manufacturing industries.

## Lean roots

Lean manufacturing has its initial roots back in the early 1900's with Henry Ford and was further fleshed out during the rebuilding of industry in post WWII Japan. Originally termed the Toyota Production System, lean's history lies in discrete manufacturing; specifically, the automobile industry. However, it wasn't until 1990, when James P. Womack and Daniel T. Jones published the book, *The Machine That Changed the World*, that the actual term "lean manufacturing" became commonplace.

Discrete manufacturing involves an assembly line of parts and is often associated with "big ticket" items such as automobiles or electronics.

Much of the food industry, however, is continuous processing – one line of production that starts, for example, with live chickens and ends with packaged nuggets. Because of this, according to Jamie Flinchbaugh, founder and partner at the Lean Learning Center, "there has been a false assumption that lean is inapplicable in the food industry."

## Defining "waste"

The main focus of lean manufacturing is to relentlessly reduce waste and quicken the flow of the product to the consumer. The food industry, however, working with perishable products that cannot accumulate, is no stranger to continuously flowing product out the plant door and into the hands of the consumer.

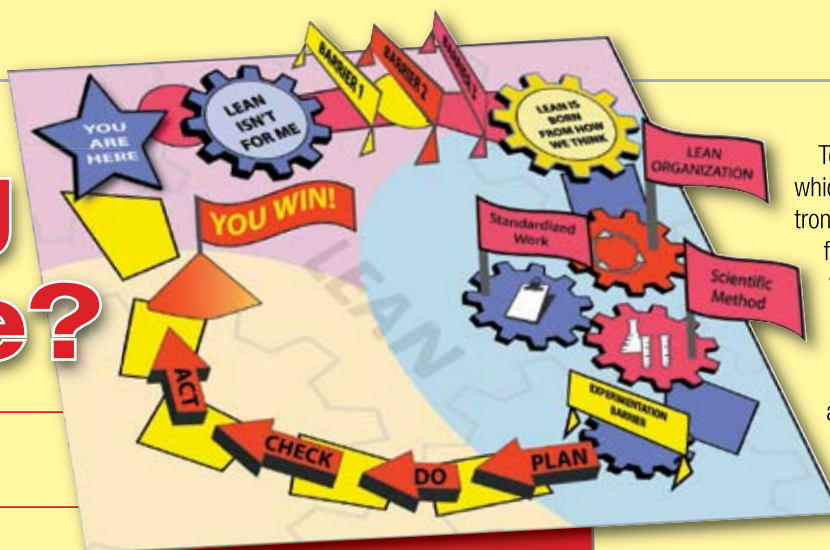
"Lean eliminates WIP (work-in-progress) and finished goods inventory which are seldom a large form of waste in the food industry since most food products are perishable. The industry does a good job rapidly flowing through product out to the final customer. The majority of processors are well plugged into this JIT (Just-in-Time) concept," says Jeff Kronenberg, Food Processing Specialist, TechHelp Idaho.

Because of this, there has been a misperception that lean is not necessary in the food industry. However, once this market began to realize that waste can come in other forms, lean thinking became more practical. TechHelp, a partnership of the University of Idaho, Idaho State University, and Boise State University, which works to improve the competitiveness of Idaho manufacturers, focuses on eight types of waste, represented by the word D-O-W-N-T-I-M-E: Defects, Overproduction, Waiting, Non Value Added Processing, Transportation, Inventory (excess), Motion (excess) and Employee knowledge and skills (not utilized).

"In the food industry, waste isn't as easy to see as in other industries," states Kronenberg.

## Education

Adopting a new manufacturing philosophy requires absolute buy-in with everyone from top level managers to process line employees being a stakeholder. And this cannot happen without proper education. Something as simple as semantics can cause confusion. Lean has often been interpreted incorrectly as a "leaning of the workforce," which clearly presents a threat to current employees.



## Making Lean Learning Fun:

"The Mouse Trap Experience" from the Lean Learning Center includes a hands-on board game focused on the lean principles and skills that promote learning through action. The experience is a three-hour program that can be run with 6 to 100 people.

The entire kit is available for sale at [www.leanlearningcenter.com/products](http://www.leanlearningcenter.com/products)

But in reality, lean creates profitability that can not only lead to a more efficient workforce, but free up more dollars for a workforce increase. Employees are more likely to embrace a system that makes their jobs easier. Lean does much to reduce the burden, or "muri" placed on employees. By reducing ergonomic problems, lean food plants yield happier – and hence more productive – employees. Additionally, the elimination of unnecessary equipment, the condensing of work cells or the combining of operations can lead to additional floor space that allows for bringing more production capabilities to a given facility.

"It takes a highly skilled lean practitioner to really understand how to apply lean manufacturing to food," states Kronenberg. "If you have not worked in the area then you may come to the conclusion that there isn't a great benefit."

Organizations such as TechHelp, are dedicated to guiding companies through the lean transformation process and have specific programs and practitioners dedicated to the food manufacturing industry. Through classroom training, hands-on food production simulations and shop-floor exercises, TechHelp Lean practitioners teach workers how to recognize and eliminate the eight types of manufacturing waste.

TechHelp's Principles of Lean workshop, which was originally geared toward electronics, has been completely reworked for the food industry. It includes what was the nation's first hands-on food orientated simulation (originally called "Granny's Grahams") where lean trainees can essentially set up and run an actual food production line. During the simulation, employees can measure how many units produced, assess quality issues, determine whether orders are on time – first without

and then with lean principles – and then compare the hard results.

Another option for food manufacturers that want to start "learning by doing" is the Lean Learning Center. The state-of-the-art Michigan facility is fully equipped to aid manufacturers in their lean journey and is specifically designed to facilitate adult learning. A powerful method embraced by the Learning Center is the Lean Learning Laboratory technique, which enables small groups of employees to learn, practice and apply lean tools at a faster pace, with greater frequency and at less risk. With this method, employ-

– such as packaging – and essentially prove to themselves that lean can work for their plant.

## Regulatory issues

Another erroneous past assumption regarding lean's applicability in the food industry is that the industry's stringent regulations (FDA or USDA, for example) prevent proper implementation of lean.

"If we look at lean as a big toolbox, we realize that the house of lean has numerous components available to aid in the success of the lean system," points out Kronenberg. "One such component is 5S, which is actually an incredible tool to maintain cleanliness and order – which meshes well with the food industry's regulatory focus on preventing contamination."

5S, which stands for Sort, Straighten, Shine, Standardize, and Sustain is a method for organizing shared workspaces, which operates under the premise that if everything is in its proper place, time is not wasted looking for things. While it encompasses much more than just basic housekeeping, keeping the workspace clean and sanitary is pivotal to its success. An organized workspace also makes it easier to spot and eliminate potential sources of contamination. The 5S

that is core to lean manufacturing initiatives. Greater organization allows for seeing problems or issues before they arise, and therefore empowers employees to act accordingly in keeping production flow going smoothly. For example, they can see if a particular packaging item is missing or running low, and replenish the supply.

## Equipment

The typical equipment found in food manufacturing facilities may also lend insight as to the why the industry was slow to adopt lean principles. To being with, much of the industry's traditional equipment tended to be large and difficult to move. Such obstacles potentially limited the reorganization of workspace in a plant.

In addition, today's advances in processing equipment and technologies have somewhat competed with the promises of lean manufacturing. Food processors can simply invest in more capital – newer, more advanced equipment that promises greater production and efficiency – and see immediate results. Of course, most food processors have (or soon will) discover that a "quick fix" is no substitution for continual, ongoing manufacturing improvements.

## Today's food industry

While the reasoning behind the food industry's initial lean delay varies according to who you ask, most lean experts agree that lean plays an important role in present-day food manufacturing.

Progress in the food industry is often driven by example. If a food manufacturer sees its competitor achieving notable results with lean manufacturing, it almost has no choice but to follow suit.

"The food industry is looking for continuous improvement opportunities," says Jamie Flinchbaugh. "Many food manufacturers are cutting costs with lean, and this will lead to additional processors grabbing hold of this method."

In addition, Flinchbaugh points out that any time an industry's challenges become unmanageable, the industry as a whole needs to reach out for new ideas. The food industry is facing an explosion of product variation, serious food safety concerns, and skyrocketing raw material and transportation costs.

"The food industry has realized that old answers are not good enough for new questions," says Flinchbaugh. "Lean may not be the only answer, but it's definitely part of it." ♦

## Learn the Lean Lingo

*Courtesy of the Lean Learning Center*

Lean tools are proven practices that help us move closer to our ideal state, help us apply lean rules, and are consistent with lean principles.

**5S:** 5S's are adapted from five Japanese words that start with 's' but have been rewritten as Sort, Straighten, Shine, Standardize, and Sustain. It helps us organize what we need and eliminate what we don't allowing us to identify problems quickly.

**Error Proofing:** Error proofing is also known as poka-yoke or mistake proofing. It involves the redesign of equipment or processes to prevent problems from occurring or moving on to the next step.

**Kaizen:** Kaizen is a structured process to engage those closest to the process to improve both the effectiveness and efficiency of the process. Its goals are often to remove waste and add standardization.

**Preventive Maintenance:** Simplifying and structuring maintenance activities to prevent problems rather than react to them can increase capacity and improve continuous flow.

**Setup Reduction:** The time it takes to changeover equipment from one product to the next is a major barrier to continuous flow, and setup reduction seeks the reduction or elimination of that time. This is also known as SMED, or Single-Minute Exchange of Dies.

**Six Sigma:** Six Sigma is a method and a set of tools to reduce variation in processes, particularly quality, using mostly statistical tools. Its primary method is DMAIC: Define, Measure, Analyze, Improve and Control.

**Value Stream Mapping:** This structured process helps managers understand the flow of both material and information through their operation and develop plans to move them closer to the ideal state.

For additional lean tools and information, visit: [www.leanlearningcenter.com](http://www.leanlearningcenter.com).

