
Lean Thinking Creates Flow At Austin Hangers Dry Cleaners

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By using lean thinking as a tool, most companies can systemically and holistically optimize all of their processes. They must make the main flow of operations—from start to finish—visible and comprehensible to all employees. System visibility enables us to see the waste in processes we work on everyday.

Hangers' HDC in Austin, Texas is a central dry cleaning plant with several drop-stores and routes feeding it with dirty clothes. This business uses a new revolutionary liquid carbon dioxide cleaning process to replace the traditional solvent of perchloroethylene.

Problem

Due to an expanding market, the company needed to know if the efficiency of the plant was capable of absorbing the additional garments that would be generated from adding two-drop stores and a route. For over two years the concept of "Lean Thinking" had been learned by Hangers' HDC, and implemented in the central plant with terrific results. The decision was later made to move beyond just finding "waste" in the low hanging fruit, and par-



ticipate in the process simulation-modeling phase of the project: The targeted outcome included an increase in production output by 45 percent, the single shift was to remain at 40 hours per week with no overtime, and capital equipment could be purchased, if the ROI was acceptable to the owner.

Three models were constructed to simulate the "Current" plant, the "Extended" plant and the "Lean Extended" plant. After the current model was built it was validated to determine if the simulation model accurately represented the process. Validation of the assumptions became a real "learning experience" and it was critical for everyone to understand each process in detail.

Each of the three models had specific "Process" measurement requirements to

At A Glance

Problem:

Hangers HDC needed to improve the efficiency of their central plant to absorb a 45 percent inflow increase of dirty clothes without adding overtime.

Solution:

Models were built and lean manufacturing concepts were implemented to include:

1. Change from the traditional batch & queue concept to the concept of continuous flow.
2. Adding two new work cells and two additional employees to the production process.
3. Adding flexibility with employee cross-training.
4. Minimize rework within the four-rework loops.
5. Doubling the capacity of two current work cells and increasing the capacity of the other two finishing cells by 65 percent.

Results:

After the lean model was built, the weekly output simulation of 10,000 garments was absorbed during one shift without overtime. This was due to doubling the plants internal efficiency along with a 14% increase in productivity. The direct labor cost improved from 26% to 19.3%

help understand the question; “If a change is made, how will we know it was an improvement?” The PCE (Process Cycle Efficiency) for most manufacturing plants is usually less than 5 percent. To be considered “Lean,” the PCE should be over 10 percent. Initially, the internal PCE for the Austin plant was approximately 4.1 percent and the external PCE was 1.4 percent. The external PCE included the time it took to move the garments from the retail centers to the plant.

The second metric dealt with Bottleneck analysis and prioritized bottleneck problems comparing 12 key activities by applying the Pareto principle to the “Average Minutes Per Entry” metrics created by ProcessModel.

The third metric looked at the over/under utilization of people. All of these process measures were critical to reducing the “result” measure: Direct Labor Cost Percentage. Most dry cleaning plants have a labor cost that runs between 25% - 40%. Managing labor cost is mandatory to maintaining a profitable dry cleaning business.

Solution

Garments processed in the finishing department were categorized into 10 “Garment Type” sub-groups. Several garment types in the Hangers HDC plant should be finished by “specialty” equipment designed to meet throughput

standards specific of that “Garment Type” group. Since the current dry cleaning equipment was based on a concept of “one-size fits all,” we used the model to pre-test how new equipment would affect the business. Other changes to the model (what-ifs) included:

1. Change from the traditional batch & queue concept to the concept of continuous flow.
2. Adding two new work cells and two additional employees to the production process.
3. Adding flexibility through employee cross training.
4. Minimize rework within the four-rework loops.
5. Doubling the capacity of two current work cells and increasing the capacity of the other two finishing cells by 65 percent.

Based on the results, Hangers HDC plans to make changes in their plant layout this year in order to absorb the anticipated inflow of additional garments.

Results

When the first model was built, the weekly production of 6,600 garments was met during a stretched 14-hour day. The simulation showed that when lean concepts are incorporated, the increased weekly output of approximately 10,000 garments

would be completed within a 10-12-hour day. Other results include:

- The internal plant PCE efficiency rating of 4.1% will double to 8.2%
- Productivity will increase by 14%
- Direct labor cost will be reduced from 26% to 19.3%
- The payback period for the total equipment investment is estimated to be 33 weeks with an ROI of 158%

Find Out More

About The Author:

Dick Barry is a consultant living in Arlington, Texas. In 1999 he was appointed to the Texas 2000 Award for Performance Excellence Board of Examiners. He has more than five years of experience in manufacturing, quality & process engineering.

Dick earned his degree in Wood Processing & Technology at Michigan State University.

Having a consulting, manufacturing, and training background, it was only natural for him to create his own business, CRB & Associates, to help small businesses achieve “World Class” standards by teaching them HOW to improve their systems and processes.

He develops business simulations using ProcessModel for all types of manufacturing businesses.

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