

# Lean Manufacturing Case Study - MTS

## Profit-Chain Consulting

### Our Client

\$100 million automotive parts manufacturer serving domestic and international OEMs with a variety of components customized for each model. Produced aftermarket versions of many product lines for major retail chains.

### BUSINESS ISSUE

Business growth straining current manufacturing facilities requiring a second plant to be built nearer key strategic customers. Concerned that current production methods, material flows and ability to deliver customer service should be assessed and improved for the new plant design and startup.

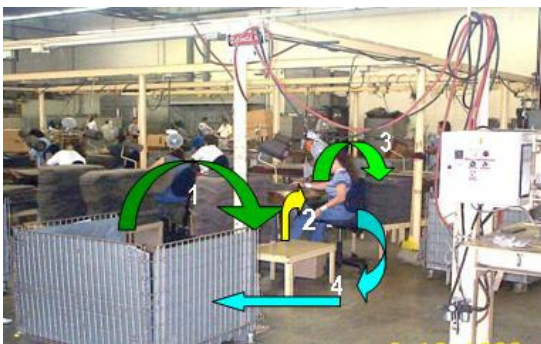
### APPROACH

The executive team started with an overview of the Lean Manufacturing practices and principles. The education sessions covered each of the Lean “building blocks” and the integration of these principles into a Lean operating environment:

Each building block was presented with the underlying concept and samples describing the application to real manufacturing operations. Case studies and benefits were discussed to highlight the improvement possibilities and requirements for success.

<b>Executive Leadership</b>	<b>Visual Control</b>	<b>Cellular Flow</b>
<b>Employee Involvement</b>	<b>Process Standards</b>	<b>Kanban</b>
<b>Customer Satisfaction</b>	<b>Poka Yoke</b>	<b>Flexibility</b>
<b>Quality</b>	<b>5S</b>	<b>Quick Changeover</b>
<b>Continuous Improvement</b>	<b>Maintenance</b>	<b>Supplier Integration</b>

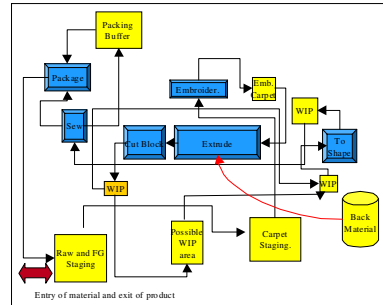
Later executive sessions compared each principle to current practices such as diagrams of material flows through specific work centers to point out restrictions to effective flow. Here is an example of the cellular flow review of one work center:



Other aspects of the current operation were reviewed including the most effective use of equipment and floor space. The resulting summary of floor space utilization surprised many executives and reinforced the non-value added aspects of some current operating practices.

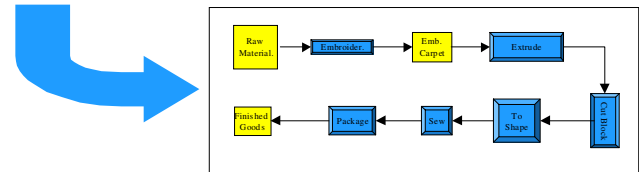
<u>Functional Activity</u>	<u>% of Total Area</u>	<u>% of Prod Area</u>
Inventory usage	44	209
Production area	21	100
Low utilization process area	4	21
Transport paths	24	113
Support area	7	31
<b>Totals</b>	<b>100</b>	

To transition into a future focus for change, the team diagrammed the material flows for each major product. The flows were redesigned for improved cycle time using cells, pull production and other Lean techniques:



Benefits of cellular flow:

- Shorter travel and less handling
- Fewer errors as a result of improved visibility
- Reduced cycle time to respond faster to demand
- Reduced Work In Process
- Reduced floor space
- Reduced handling costs
- Reduced management time on product flow



With new flows designed, the team developed the supporting aspects of Lean necessary to bring the new flows into reality. A pilot cell in the existing facility was developed and run to further solidify the underlying design and commitment to change, the team saw improvements in action! Ultimately, a new plant design was finalized and then translated into an engineering design, plant site selection, construction and implementation.

### RESULTS

Tangible benefits for the Lean Manufacturing implementation initially centered on non traditional aspects of manufacturing cost:

- Manufacturing overhead reduced 25%
- New plant built with 40% less floor space than planned
- Indirect labor costs reduced 50%

Additionally, intangible benefits were important:

- Work in process tracking and scheduling nearly eliminated
- Ease of serving customers increased

Results from the pilot were delivered within months and the new plant showed near immediate results.