



Lean Case Study: A Pull System Implementation in the Air Movement Industry

“If we could simplify everything we do in our organizations so that everyone could understand ... just imagine the improvements we could make.”

The Company:

The case company¹ employs 250 people and manufactures heating and ventilation products for new homes and the renovation after market.

The Challenge:

The declining Canadian dollar was increasing costs, and competition was getting tougher. Customers were becoming more demanding and margins were eroding.

In Operations

- Set-up time varied from 15 minutes to 2 hours
- Maintenance of equipment was reactive
- Customer requirements were met by scheduling production using MRP
- Daily production meetings typically lasted 1 ½ hours and were largely counter-productive.

In Customer Service

- 78.5 % on-time delivery
- Quality delivered to the customer was 97% but 89% internally
- Lead time was 3 weeks from quote to shipping dock

In Inventory

- Finished Goods Warehouse was full, and aisles were always blocked
- WIP clogged the work areas
- Raw materials were taking up excessive space
- Returns area was overflowing

The Employees

- Employees were told what to do and when to do it
- Employee input was seldom requested
- Operators were assigned to one work area
- No involvement in improvement initiatives

The Approach:

Led by their manufacturing team, the company started on an improvement strategy that first and foremost had them develop a vision and mission – and share it with all the employees. All employees were then trained in the principles of Lean, and they started to change the thinking by walking *and* talking about the improvement strategy. *All employees* were involved in the Continuous Improvement efforts.

¹ Company name has been withheld for privacy purposes



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The company changed the way they measured, specifically from a standard costing system to a throughput accounting system, and then chose a pilot area to start putting their strategies to work.

The key initiative was to convert from a scheduling system based on a sales forecast to a "Pull System" based on customer demand.

The Results:

Despite the fact that the dollar continued to decline and customers continued to become more demanding, margins started to improve.

In Operations

- 15 minute to 2 hr set-up times reduced to between 0 and 15 minutes
- Unscheduled downtime reduced by applying preventative maintenance on key equipment
- Customer demand was met by introducing a Pull system (Kanban)
- Daily production meetings reduced from 1 ½ hours to ½ an hour
- Meetings became proactive vs. reactive

In Customer Service

- On-time delivery was increased to 96.5%
- Internal quality rose to 97%
- External quality increased 99.5%
- Lead time reduced from 3 weeks to 2 days

In Inventory

- Finished Goods reduced by 60%
- Warehouse aisles cleared & work areas cleared of WIP
- Raw materials reduced by 32%
- Returns area was converted into an R&D area where new products were developed to fill the 30% capacity that was realized from the improvements.

The Employees

- People became empowered
- Employees were involved in the changes that affected them and participated in continuous improvement teams
- Operators were cross-trained to allow more flexibility and to enable the company to react to customer demand

The Reaction:

"I still cannot believe the improvements that were made at such a small cost."
(V.P. Finance)

"We should have done this years ago. I will never again underestimate the power of engaging the people." (Engineering Manager)

"The new 'Pull System' has given us an opportunity to improve our operation and ensure our place in the Canadian manufacturing community." (President)