Your Personal Guide For Business Optimization

Project Summary

Single Piece Flow

New Opportunity – New Requirements
Company 'X' was a supplier to Ford, producing cargo equipment for Ford's commercial vans, such as a Pendaflex®-style file storage box with writing surface. This product line installs on the floor between the driver and passenger seats, and the installation is done by Ford. A typical buyer of these vans was a small business owner such as electrician or plumber, that conducted most, if not all of their business from the van. Demand for this product was fairly low, it was below the threshold where Ford's quality and delivery standards fully applied. For example, the company was able to deliver product over three weeks late, which they did on a regular basis.

The Problem
Over time, however, as demand grew, the volume pushed them into Ford' 'Tier 1 Supplier' category. This category of supplier had much more stringent levels of supplier requirements for quality and delivery, which the company was not able to meet.

Analysis
The final assembly area was greatly disorganized. Although they were behind their deliveries, staff were often idled. Product was being batch-produced on a production schedule that was being set by when parts became available, rather than on actual demand for the product.

Actions Taken
Management recognized they needed a new way of operating in order to continue to be a supplier to Ford. A 'Single Piece Flow' event was conducted.

An important aspect of the Single Piece Flow event was to involve individuals from all the different areas - line workers, industrial and quality engineers, maintenance, and management together for a concentrated one-week 'Learn-Do' activity'.

Working with plant management, process improvement manager, and support organizations, an experimental area was cleared adjacent to the existing assembly line. This allowed even the most casual observer to visibly see the 'before' and 'after' of the workshop. Simply by moving from a batch process to a single-piece flow, even without the issue of the parts shortage being solved, and before a pull system was implemented, dramatic improvements in production time per unit were seen. Workshop planning allocated $15,000 for new tooling and equipment during the workshop.

Selected individuals from line workers, industrial and quality engineers, maintenance, and management were brought together for a concentrated one-week 'learn-do' activity. The week consisted of:

- Document and analyze the existing product and people flow
- Explicitly identify process, business, customer requirements
- Daily cycle of improvement ideas and testing
- Changes were quantified and documented

Dave Nave & Associates

Renton, WA
206.200.4840
davenave.com

Your Personal Guide For Business Optimization

Project Summary

- The workshop concluded with a shop floor demonstration and final report-out to the plant management team

Results

	BEFORE	AFTER
Work In Process	12 Units	3 Units
Direct Labor per Unit	8.75 minutes	4.9 minutes
Direct Labor Travel	90 Feet	33 Feet
Time between deliverable units	5.62 minutes	2.32 minutes
Number of Operators	7	3
Length of Assembly Line	32 Feet	10 Feet
Square Feet	840	440

Direct Annual Savings of $500,000

Workshop planning allocated $15,000 for new tooling and equipment during the workshop. Only $500 was actually used.

Other observations;

- Work area was much quieter
- People were no longer rushing around looking for tools and supplies
- Work was deliberate and less frantic
- Less rework, production issues were addressed immediately
- Workers supported each other, floating tasks to help others
- Lead worker anticipated issues, instead of reacting to problems
- Production output become more predictable

Lessons

- 50% improvement now is great improvement!
- People are eager to help, and need a safe environment to experiment
- A little guided learning goes a long way for improvement
- The importance of tying improvement efforts to strategic initiatives

Improvement Events are TypicallyRepeated Fast Cycles of 'Learn-Do'

Keeping the workshop 'Low-Tech' encourages everyone to participate in the 'Learning' and 'Doing.'

Dave Nave & Associates

Renton, WA
206.200.4840
davenave.com