Your Personal Guide For Business Optimization

Project Summary

Tangential Improvement

Background
A Fortune 100 defense company was a subcontractor producing $10 million dollar main fuselage sections for a large commercial aircraft.

Situation
After 20 years and over four hundred deliveries, the aircraft customer was updating the design and increasing production rate. Formerly one fuselage per month to one per week.

The process improvement team was tasked with selecting and improving areas of work.

Analysis
With all the focus on reacting to the new work environment, where should a 'process improvement' team focus? What core activity affected the widest number of people? What improvement effort would have the biggest effect on schedule and cost?

With over 800,000 rivets installed every week, controlling hole dimension was identified as a core competency.

Action
A representative area was chosen to study how rivet holes were made.

- Initiate and planned a study of the hole drilling process
- Negotiate with a supervisor and work crew to participate in the study
- Verify work processes as designed and as used
- Track workforce activities and measurements over several shifts
- Conduct Statistical Process Control (SPC) analysis for variability and capability

Conclusion
No differences in quality (variability, capability, predictability) between individual workers or between shifts

Observation - (not a focus of the original assessment)
What was observed was a difference in the cutting tool longevity. Cutting tools purchased from the manufacturer lasted 5 times longer than re-sharpened drill bits before affecting performance.

Workers were coveting and hording 'factory fresh' drill bits. While hiding older, less desirable drill bits.

Dave Nave & Associates

Renton, WA
206.200.4840
davenave.com

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Re-sharpened was done in-house or at an outside vendor. Wherever the re-sharpening was done, did not make a difference in the life of the tool, or the quality of the holes.

Results

Subsequent investigation found the specification used for re-sharpening of cutting tools was different from the original manufacturer.

Cutting tool specifications were changed to match the manufacturer's specifications.

Rivet hole rework dropped by 30% and tool life increased, which in turn reduced the frequency of the need for tool re-sharpening. Savings of $1.1 million per year.

Take Away

- Indirect results can be greater than the primary investigation
- Core issues can be hidden by "We've always done it that way"
- The value of rigorous investigation and reporting structure

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