



Defect Reduction – Quality Problem Solving

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Lean flow control and quality work together. It is difficult to control flow when quality is unpredictable. Conversely, shorter lead-times resulting from lean applications help in quality problem diagnosis and solution. Stability results from predictable processes in terms of output and quality. Specific techniques along with benefits and activities are described below.

Defect reduction starts with measuring and counting defects followed by determining their relative impacts. This provides targets for improvement by process engineering and quality control. Several tools are used to bring about defect reduction including SIPOC Form (Suppliers, Inputs, Processes, Outputs, Customers), Process Mapping, CEDAC (Cause and Effect Diagrams with Addition of Cards), Pareto ranking, brainstorming, prioritization, action planning and follow-through.

Corrective Action Processes in companies often involve many hand-offs and don't obtain desired results. Often fixes are short-term or band-aid in nature and do not address the root causes for long-term solutions. Experience with corrective action systems and information flow mapping help to identify and correct deficiencies.

Key Benefits

- Stable, predictable processes yield consistently high quality products
- Increased yield leads to improved throughput and reduced operating expenses
- Team process generates improved diagnosis, idea generation and ownership of the solution
- Effective corrective action process lead to continuous improvement

Activities

- Apply many quality tools, appropriate to the situation
- Utilize extensive experience to effectively facilitate teams for excellent results
- Call upon experience improving quality in a wide variety of industrial and service settings
- Use information / product / process flow mapping and redesign methodology to improve corrective action processes

Does your product generate excess waste in the form of scrap and rework? Do customers complain about defects that escape your process? If so, get help to effectively apply quality problem solving tools to drive defect reduction.

Quality Information Types

- ❑ Quality System - Quality System Documentation in support of ISO certification, Good Manufacturing Practices (GMP) Audits
- ❑ Corrective Action - Feedback & follow-up on process or product problems identified throughout the business: supplier, mfg., assembly, service, customer...
- ❑ Process/Product Control – Material and manufacturing measurement, process parameter control & product control vs. spec.
- ❑ DPU - 4-Up Chart - Summary of Product Flow DPU and Defect Trends
- ❑ Cost of Quality - Costs of Internal & External Failure, Appraisal & Prevention - prioritize / cash improvement
- ❑ Process Capability - Summary process data used by design teams to evaluate product supplier / mfg. capability

Vision for Quality Information Tracking

- ❑ Data is entered into a system only once
- ❑ Seamless & Direct Quality Information Flow
- ❑ Real-Time Data supports Continuous Improvement
- ❑ Product and Process information and reports are readily available and automatically generated
- ❑ Report users pull required data from data sources rather than requiring customized reports from suppliers
- ❑ Common processes in use - facilitate program start-up
- ❑ System and platform varieties are minimal
- ❑ More is time spent on improvement than on reporting
- ❑ Systems are linked: Quality, ERP, Financial, Execution...

Typical Problems

- ❑ Many processes don't have SPC or even SQC on product characteristics
- ❑ Don't do enough process variable control to be Six Sigma organization
- ❑ Lack central real-time process control visibility in many areas
- ❑ Data is not stored in a meaningful way - have to do special study
- ❑ We don't do a good job converting tons of data into information
- ❑ Measuring device capability to download measurement capability / data is not used (TCI, gage R&R)
- ❑ SPC & shop floor control processes aren't integrated. Need to integrate process control system into QMES
- ❑ Lack full understanding of QMES and links between shop floor control and quality / SPC
- ❑ Product genealogy tracking isn't robust or is absent in current systems