



Critical Skills For Effectiveness In Today's New World — Part 3 Of 4

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There are four trends that define the differences between yesterday's way of maximizing effectiveness and today's: 1) Solo to team performance; 2) Stand-alone company to link in supply chain; 3) From problem detection to process failure prevention; and 4) From managing data to empowering decision making. This month's article looks at the third of these trends.

From Problem Detection To Process Failure Prevention

Today's competitive business world is different than it was a couple of years ago. Are we using the right tools to maximize our effectiveness today or are we still using yesterday's tools because we are comfortable with them?

Zero defects, product recalls, warranty costs—these terms certainly weren't part of the daily ration of business speak we heard as little as 5 years ago. Yet, they are part of our everyday soundscape and can be found on the nightly business news, as well as in the daily newspapers.

Our organization charts slowly came to terms with the evolution to a "zero parts per million" world, moving from Inspection Department to Quality Control (QC) and then to Quality Assurance (QA). Now, with the stakes in the battle for quality between customer and supplier so high, many refer to the department as "Quality," as if that second descriptive word might let the cat out of the bag on the company's methodology or reveal some fatal philosophical flaw.

The organizational names do reflect the fact that inspection is no longer an effective means of delivering quality for a market that expects zero ppm performance. Also, "con-

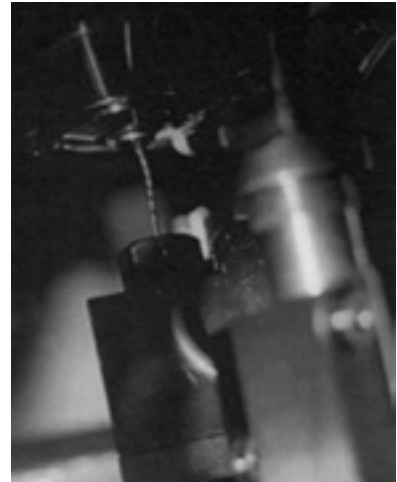
trol" sounds at least defensive if not downright outgunned in the battle for achieving process perfection. "Assurance" implies a process to assure the process' performance. But what our customers really expect is a "process for product realization" that prevents the process from producing non-conforming products.

It is a given that inspection can't find everything and SPC won't prevent random occurrences when under statistical control. Plus, if a process takes an out-of-control turn, the idea of trying to ensure zero ppm looks like a fool's errand. Here's what we can do to turn our shops in the direction of Process Failure Prevention.

Have a process for establishing processes. You have the machinery, tools and gages to produce your parts. But do you have a process to create a robust, stable and repeatable process for production? Or do you send out the job order with the basket of tools and gages and hope for the best?

The AIAG publishes a set of manuals that includes Advanced Product Quality Planning (APQP) and Failure Mode and Effects Analysis (FMEA). These manuals can kick-start your thinking about your process for manufacturing. They identify ways the process can go wrong, and show how to prioritize the factors that have higher risk or a higher probability of occurrence.

To intelligently manage risk, you need a process and a way to assign numbers so that your evaluation can be rational. These manuals are a great start toward improving your manufacturing process, and are the first step in your "process realization process." For more information, visit the AIAG Web site at www.aiag.com.



This process failure was detected by ATAM Technology using acoustic analysis. The machine was automatically shut down, thus preventing a wreck.

Know your capability. We already pointed out how SPC and traditional control charts are insufficient by themselves to ensure zero ppm performance. But SPC does provide the savvy manager with just the right tools to measure, analyze, benchmark and choose his or her production process. The technique is to perform process potential capability studies.

Such studies can give you a process potential index or Ppk, which you can use to measure your process to both the customers' expectations of zero ppm and against the capability indexes of your other processes. This will allow you to estimate likely failure rates based on your capability index experience. It gives you a measurable, so that you can understand your process, as well as a place to stand for further process improvements.

Process improvements. Continuous improvement is the lifeblood of manufacturing organizations. With improvements in tools, techniques and technology, standing still is actually falling behind all of the new developments that continually come to our industry.

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A D V O C A C Y

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Critical Skills continued.....

Process improvement must be the primary driver for innovating, improving performance and reducing costs. Do you have a process for improving the processes under your authority? Do you have daily, weekly or monthly evaluations of process performance indexes Cpk versus Ppk that were performed at the start up of the run? What do they tell you? Who in your organization knows what the limiting or defining factors are for that process? Are they speed-limited or material-limited?

Design of experiments is another way you can learn more about your process and make effective changes that improve its potential and capability. When was the last time you performed a designed experiment aimed at improving your process? Remember, if the output isn't numeric data, it's opinion, not fact.

Using Lean for mistake proofing.

Lean manufacturing techniques—in particular, the 5S methodology—are excellent ways to start mistake proofing, by relentlessly eliminating the availability of random elements that might be substituted in the process by error. If only the correct inserts

are available in the workplace, then there is no chance for the incorrect, wrong-nose-radius inserts to be used by mistake.

The same holds true for tools and gages. The subject of material identification and lot control could be the subject of an entire chapter of mistake proofing. "A place for everything and everything in its place" may be easier for our western minds to grasp, but the fact is that 5S is an excellent methodology to keep potential random acts of process violence from being unknowingly committed on your shop floor.

Using these techniques can help each of us establish a process for creating, maintaining and improving our production processes. When faced with a claim or problem earlier in my career, I would ask, "Was there a process? Was it followed? Was it effective?" These questions can also be applied to your process for creating capable, robust production processes.

Next issue: Part 4 — From managing data to empowering decision making.

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PMPACalendar

Below is the calendar of upcoming conferences and events scheduled for the 2006 program year. For the latest district/chapter meeting information, please view the Calendar of Events at www.pmpa.org/calendar/. If you have questions about PMPA conferences or regional meetings, please contact Rob Kiener, director of marketing and membership communications, at (440) 526-0300 or rkiener@pmpa.org.

National Technical Conference
April 29-May 2, 2006
Hyatt Regency
Dearborn, Michigan

PMPA Annual Meeting
September 30-October 4, 2006
Ritz-Carlton Amelia Island
Amelia Island, Florida

PMPA Management Update
February 28-March 3, 2007
Disney's Contemporary Resort
Lake Buena Vista, Florida