Near-Perfect Quality:

HOW TO ACHIEVE IT AND WHY MOST MANUFACTURERS DON'T

By Pamela Grady
Senior Operations Consultant
Global Shop Solutions

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Of the top three competitive challenges for today's manufacturers – quality, price and on-time delivery – quality can be the toughest nut to crack for many companies. It can also be the most important, especially for manufacturers specializing in close-tolerance parts or serving industries that require multiple quality certifications and mandates.

QUALITY REQUIREMENTS CAN VARY WIDELY DEPENDING ON THE EXPECTATIONS OF YOUR CUSTOMER BASE AND THE MARKETS YOU SERVE. BUT REGARDLESS OF WHAT YOU MAKE AND WHO YOU MAKE IT FOR, SHIPPING BAD PARTS ON A REGULAR BASIS DOES NOT PUT YOU IN A FAVORABLE COMPETITIVE POSITION.

Internally, ongoing quality issues create waste and rework that causes jobs to ship late and drives up your cost of manufacturing. They make it difficult to earn and maintain ISO and other quality certifications. They can also cause morale problems, as different departments point the finger of blame at each other.

The biggest damage occurs beyond the walls of your production facility, where your reputation in the market as a reliable – or unreliable – provider of quality parts can make or break your business. Word gets around fast in the manufacturing industry, and once you develop a reputation for shipping substandard parts, it can be hard to win back your customers' trust.

Many factors contribute to ongoing quality problems. Most of them stem from approaching quality as an after-the-fact fix rather than an integral part of the manufacturing process. Achieving the quality levels today's markets demand requires proactively building quality into every step of your manufacturing process.

The (Hand) Writing is On the Wall

You can tell by looking at its shop floor processes whether a company is likely to struggle with quality issues.

When scrap and rework rates are unacceptably high, chances are good that the routers and work orders are still written by hand. Machinists log scrap and rework by hand, on paper. Cause and corrective incidents are hand-written and manually tracked. All of which inevitably builds human error into the system, thereby increasing scrap and reducing quality ratings.

In a manually driven environment, document control is usually poorly managed, so that engineers and machinists often work off outdated or conflicting document versions.

Quality inspections are usually conducted after the fact because the data isn't available to conduct inspections while jobs are in process. Bad parts are typically identified when customers return them, rather than before they ship.

No manufacturer wants to suffer these problems day in and day out, but losing customers to quality issues is only half the story. Without an integrated quality system to automate most or all of the manual processes, beginning-to-end traceability of parts is nearly impossible. You can't determine the true cost of quality by the job or as a whole. The same quality issues occur over and over again, and operational costs go up while margins decline.

To achieve the Holy Grail of manufacturing – near-perfect quality ratings – quality control needs to become a way of life rather than a patchwork of "too little, too late" quality control efforts. This fundamental shift starts with implementing an **ERP quality control module** that enables you to manage quality in real time rather than after the parts have already shipped.

WITHOUT AN INTEGRATED QUALITY SYSTEM TO AUTOMATE MOST OR ALL OF THE MANUAL PROCESSES, BEGINNING-TO-END TRACEABILITY OF PARTS IS NEARLY IMPOSSIBLE.

Quality Re-Imagined

Imagine a shop floor where the following takes place on a daily basis:

- Routers and work orders are built electronically and transmitted error-free to the shop floor.

- Engineers and machinists always work off the correct document rev, while easily and accurately logging all purchasing, inventory and manufacturing rejects.

- Engineers take and document cause and corrective actions in real time.

- Shop floor personnel identify bad parts as they are made, rather than after they are shipped.

These represent important first steps in getting quality right most of the time. Now imagine that you can also:

- View all rework, rejects, and scrap in one screen.

- Trace every part with 100% accuracy as it moves through your shop floor.

- Track your entire quality history with a few mouse clicks.

- Easily produce quality documentation for ISO and other compliance auditors.

- Know your true cost of quality – by the part, by the job and overall.

WITH THESE PROCESSES IN PLACE, QUALITY BECOMES AN INTEGRAL PART OF YOUR MANUFACTURING PROCESS, AND YOUR LIFE AS A MANUFACTURER GETS A LOT SIMPLER.
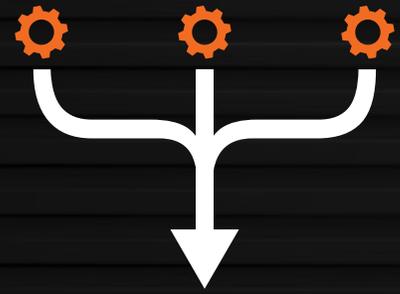
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"Instead of being a separate process that occurs after the fact, quality management has become an integral part of our job production process," says Jordan Griffith, V.P. of Operations for ClockSpring|NRI. "NCFRs, cause and corrective actions and root cause analysis are all performed easily and accurately in our ERP system. We know what it costs to remake a part and our total cost of quality. As a result, we know what we're really spending to manufacture our products."

Get Off the Rework Merry-Go-Round

Achieving these outcomes requires a robust **ERP Quality Control** module that has the features and capabilities to let you do the following:

ISOLATE AND MANAGE QUALITY AT THE HIGHEST LEVEL.

SIMPLIFY MANAGEMENT OF REWORK, REJECTS AND SCRAP.

EASILY MANAGE ENGINEERING CHANGE NOTICES.

CUSTOMIZE CONTROL OF QUALITY REQUIREMENTS.
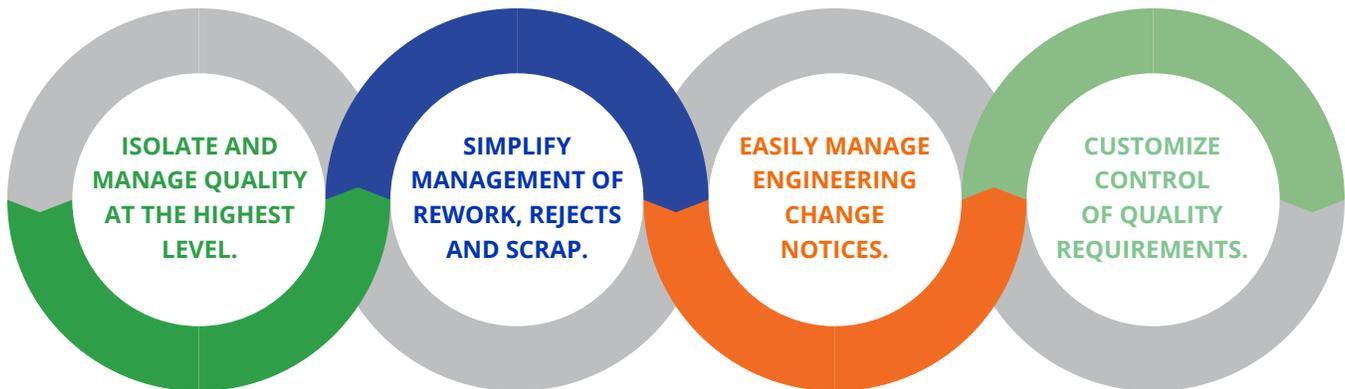
> Accurately measure the quality components of manufactured and purchased parts in your manufacturing business.

> Break down scrap quantity and cost by date range, vendor, department, employee, various codes or workcenter.

> Customize the way you need to measure quality in order to meet your customer's quality demands.

> Focus on improving quality in the areas that will have the biggest impact on cost savings and customer satisfaction.

> Accurately capture all purchasing, inventory and manufacturing rejects.

> Review all rework, rejects, and scrap from a single screen.

> Take cause and corrective action, issue new material, and more while jobs are still in progress.

> Electronically track all engineering changes.

> Control every step of part revisions or inactivations within the system.

> Generate a cause and corrective action number from an RMA.

> Require appropriate signoff for jobs to proceed after entering an ECN.

> Create customized quality records to meet internal and external QC requirements.

> Set up electronic sign-off to monitor step completions.

> Easily keep detailed quality control histories for all completed transactions.

> Maintain non-conformance histories by vendor, customer, employee and department.

Achieving Near-Perfect Quality

When quality becomes an integral part of how you do business rather than a last-minute add-on, you'll be amazed at the transformation.

Instead of constantly apologizing for returned parts, you'll identify and correct defective parts **before** you ship them. You'll identify your cost of quality down to the part level, while reducing scrap to equal or better than the industry standard. Your system will automatically shut down jobs that are producing noncompliant parts until the problem is corrected. Knowing your true cost of quality will enable you to determine the financial impact of correcting parts already made or scrapping them and starting over – while a job is still in progress.

When Global Shop Solutions customer QTA Machining, a custom manufacturer of precision parts, began requiring machinists to report all deviant parts through the ERP system, it set in motion a process that has resulted in near-perfect quality ratings for the company.

SET IN MOTION A PROCESS THAT HAS RESULTS IN NEAR-PERFECT QUALITY RATINGS FOR THE COMPANY.

"When machinists report a deviant part, our Quality Control module automatically notifies the quality manager, who determines the problem and disposes of the part appropriately," says Executive Manager Matt Pelczynski. "Generating a NCMR automatically triggers an email to the operations manager, who reviews it and signs off or adds notes as necessary.

From there, cause and corrective actions and NCMRs are attached to the work order so that when the job comes through again operators don't make the same mistake. Last year, we achieved a quality rating of 99.67% (blended rate based on returns and in-process deviations)."

IN ADDITION TO LESS SCRAP AND REWORK, COMPANIES THAT BUILD QUALITY INTO EVERY STEP OF THE MANUFACTURING PROCESS ALSO ENJOY COMPLETE TRACEABILITY OF EVERY PART THAT MOVES THROUGH THE SHOP. THEY CAN TRACK THEIR COST OF QUALITY WITH REMARKABLE PRECISION, WHILE MAINTAINING NEAR-PERFECT QUALITY RATINGS. MOST IMPORTANT, THEY STOP SHIPPING BAD PARTS AND START WINNING MORE JOBS BECAUSE CUSTOMERS KNOW THEY CAN BE COUNTED ON FOR QUALITY PARTS EVERY TIME.

When you're ready to get off the rework merry-go-round for good, call Global Shop Solutions at 800.364.5958. Or **set up an appointment online**. We'll help make your quality as good as you want it to be.

ABOUT THE AUTHOR

Pamela Grady is a Senior Operations Consultant for Global Shop Solutions with over 20 years of manufacturing experience. She has held a variety of jobs throughout her productive career including purchasing agent, master scheduler, quality manager, supply chain manager, and director of operations.

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