



THE GLOBAL STANDARD FOR ENTERPRISE QUALITY SOLUTIONS

THE WORLD OF IMPERFECTION

What's your plan?





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LIVING IN A WORLD OF IMPERFECTION.

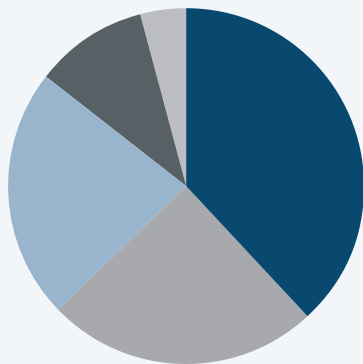
Perhaps you were one of the drivers affected by the recall of almost 64 million vehicles last year. According to the National Highway Traffic Safety Administration, there were 803 vehicle recalls in 2014—and that's just the automotive industry. While an estimated 70-80% of top U.S. manufacturers' vehicles are made from sub-supplier materials which causes complexity. And almost every food seems to have faced a recall, whether it's cantaloupe or macaroni and cheese. (The FDA even has a food safety app.) No matter what industry you're in, your organization faces the potential of being the next recall in the news. A recall is the most visible sign of failure, potentially fatal, whether it's from salmonella or unintended acceleration. We live in a world with imperfect systems and people, so recalls will not be going away. But how can you lessen the chances that your organization will be one of the affected companies in the future? It's a balancing act between supporting high quality products and meeting production commitments while also achieving your profitability targets.



64 MILLION
VEHICLE
RECALLS
IN 2014

RISK MITIGATION OR COMPETITIVE DIFFERENTIATOR?

Risk is ever-present. "It taints all manifestations of life and action," writes James Rooney in the 2011 ASQ Future of Quality report. While it can't be avoided, it can certainly be managed. But a great quality system doesn't just manage risk—it goes beyond and aims for improvements. And how you think about quality can affect how well the quality system actually works. According to ASQ Global State of Quality Research 2013, 4% of respondents said quality is primarily a risk mitigation activity. Ten percent said it was a tool to fix problems that were discovered, and 22% said it was mainly about compliance. Although these factors should be considered, quality should be thought of as more than that. In a more positive sign, 24% said it was a method to manage organization-wide performance. And finally, the largest group, 37%, said it was mainly about continuous improvement.



GLOBAL STATE OF QUALITY

- RISK MITIGATION ACTIVITY
- TOOL TO FIX PROBLEMS
- COMPLIANCE MANAGEMENT
- METHOD TO MANAGE ORGANIZATION-WIDE PERFORMANCE
- CONTINUOUS IMPROVEMENT

These numbers varied by size and type of organization. Fifteen percent of the smallest organizations said quality was primarily a compliance activity, compared to more than double (33%) of the largest organizations who said the same. This also differed for service and manufacturing companies. According to the report, "Service organizations are 1.6 times more likely than manufacturing organizations to view quality as a strategic asset and competitive differentiator." Manufacturers, take note.

While the majority have the right idea in using quality for performance and improvement, the metrics show that a sizeable number of organizations still consider quality something done to stay afloat rather than pull ahead. Obviously, there is a disconnect for companies who say they aim for excellence and yet consider quality mainly a way to avoid risk. Risk-mitigation, fixing problems and complying with standards are important, but they should not be the main focus of quality. A company without recalls doesn't necessarily indicate innovation and improvements. (Just imagine marketing yourself to customers with a slogan like "No Recalls Yet!" Not exactly impressive.)

How is quality tracked?
Most companies surveyed recognized the benefits of automation, but there is still room to grow. Eighty-two percent rely on spreadsheets, 54% use fully automated systems, 47% use manual

processes for data collection, and 41% use web-based systems. Germany is taking the lead and advancing their industry towards Industry 4.0, where the interconnection and automation of technology is paramount to their future growth. The ability to predict rather than relying on a magical crystal ball is now closer than ever. Failures will be predicted within the manufacturing process. Maintenance processes will be triggered automatically – creating self-predicting systems and tools on the actions that need to be taken next. Smart manufacturing is in the creation phase for the upcoming next industrial revolution, and it's being adopted by companies like BMW and



82% OF COMPANIES RELY ON SPREADSHEETS

Bosch.

Once these quality measures are calculated, it is important to consider how they are shared within the organization. This would affect the culture. According to the ASQ research, 72% of respondents use quality measures to drive higher performance by promoting challenging goals, and 65% said they used quality measures for trending and predictive analytics. Although these numbers are good, they could be higher—every organization should be doing this.

A DIFFERENT APPROACH TO THE COST OF QUALITY

Once you have the right approach to quality (COQ), one way to improve it is to track the cost of quality. Approximately one-third of companies track cost of quality, according to a survey of ASQ members (Sower, V., R. Quarles, & E. Broussard. (2007). "Cost of Quality Usage and Its Relationship to Quality System Maturity." International Journal of Quality and Reliability Management

24(2), 121-140). The authors found that a staggering "66 percent of the survey respondents do not track quality costs. The most frequently cited reasons for not tracking quality costs were lack of management support and inadequate information systems."

Management support is often cited as an issue in any initiative, but these issues

can be addressed and the numbers improved. The cost of quality is outside of the quality department, it is also the production team. Production, after all, have potentially thousands of units flowing through a plant daily. If rework is required, the impact can be severe. If the quality team isn't a part of this piece, are organizations going to have a magical crystal ball to foreshadow what is ahead? No; today the teams can place automated technologies to track and collect data throughout the manufacturing

process for visibility, traceability and overall quality control across all departments. Will the ERP systems be able to help? Potentially in some areas but these products aren't structured for quality management. The metrics, the perspective, it's different.

Although tracking metrics and collecting data take time, consider it upfront work that helps avoid problems in the future. To put it more simply, prevention costs can prevent failure costs, and failure costs can take down a business. The authors found that as an organization's quality system matures, external failure costs declined as a percentage of total cost of quality.

Company size can be a factor in adoption. Larger organizations tend to have more developed quality systems and better tracking of cost of quality, while smaller companies that didn't track cost of quality often had higher costs. According to a 2009 article from ASQ's Quality Management Journal, "Comparative Analysis of Quality Costs and Organization Sizes in the Manufacturing Environment," small and medium sized organizations had similar prevention, appraisal and internal failure costs as compared to large organizations, but external failure costs—arguably the most important ones—were higher. These came in at "70 to 80 percent of the total quality costs that make up 8 to 10 percent of manufacturing expenses." The author said this stemmed from "preference for correction over prevention, human error, inadequate processes, and lack of correct data."



**66% OF
COMPANIES
DO NOT
TRACK
QUALITY
COSTS**



**70-80% OF THE
TOTAL QUALITY COSTS
MAKES UP 8-10 %
OF MANUFACTURING
EXPENSES**



98% OF COMPANIES AREN'T USING QUALITY COSTING DIRECTLY IMPACTING REVENUES, PROFITABILITY, & RISK EXPOSURE

In other words, companies often end up fixing something later rather than doing it right the first time. According to Sower's research, increases in spending on prevention means decreases spent on external failure. Consider how no one at the organization has time for quality procedures until a recall or an FDA warning letter. Then suddenly resources come flying onto the scene. But prevention, as valuable as it is, it is just the start of the quality journey. The goal should be to drive improvements, which is one sign of a mature quality system.

CUT THROUGH THE NOISE AND ACT

The challenge to improve quality while mitigating risk varies across companies and countries. According to Sower's research, "Total costs of quality have been estimated by Kent (2005) at 5-15 percent of turnover for companies in Great Britain, by Crosby (1984) at 20-35 percent of sales for manufacturing and service companies in the USA, and by Feigenbaum (2001) at 10 percent of revenues. That the most conservative of these estimates might exceed a company's net profit highlights the potential importance of COQ."

Despite the benefits it offers, quality costing is still one of the less commonly used tools, according to a 2009 survey done by the Chartered Institute of Management Accountants. The survey found that 98% of very large organization and 91% of medium-sized organizations aren't using quality costing." According to this survey, when asked, 'What are the main issues currently confronting the management accounting function in your organization?' Software issues were one problem, "such as outdated, inflexible or poorly integrated systems (requiring manual reconciliations or other interventions to create reports) or a lack of strategic vision for IT." Software solutions that are up-to-date, flexible and well-integrated are clearly one solution to this problem, and devoting

more resources to this area could help an organization.

But keep in mind that simply tracking the cost of quality won't improve your quality system. It is simply a step in the process. Measuring cost of quality means you can make better decisions in implementing the quality system, and trace problems with the right information. You can't get rid of risk, but it can now be more definitively predicted.

THE FUTURE

Our lives will continue to be filled with imperfections and the future will most likely not be recall-free. The attention paid to this area will continue to grow. Experts say that the questions have changed. We know the world is imperfect and we won't be able to solve every problem. In the past, companies asked: "How much are we spending?" However, the questions today are: "How ready are we to tackle events? How can we best maximize our profits knowing the imperfection is here to stay?"

Just as there are many different problems, there many different potential solutions to quality issues. Software can help address these imperfections, but it must fit your organization. As leaders in your organization, below are key questions to consider when evaluating your future partners. As you are reviewing these, consider the hardware and software interdependencies that will impact your organization today and in the future. Many of the world's largest global brands trust ASI DATAMYTE as their standard for enterprise quality management.

AS A CIO

Your focus is on:

- Technology footprint
- Decreasing the demand of your team's technical support across the organization
- Security for the systems and the data

Below are key areas you may want to consider if your future partner has the following capabilities:

- ✓ Do they offer more than a point solution for your organization?
- ✓ Do they have the ability to be truly modularized to allow your team to consume their technology in a consumable and manageable perspective?
- ✓ What is the provider's overall vision and investment areas? This will allow you to determine if the partner's interests align with your expectations and future needs.
- ✓ Do they have existing integrations into your existing software and hardware solutions (i.e. ERP, MES, CMM machines, etc.)?
- ✓ At launch, is the system configuration-based versus custom development for business rules and process difference?

AS A QUALITY EXECUTIVE

Your focus is on:

- Productivity and efficiency
- Reduce errors and re-work
- Automated job management from office and not the shop floor

Below are key areas you may want to consider if your future partner has the following capabilities:

- ✓ Can your provider grow with you over time? If your team is in need of SPC today, how will their needs change over time and does the provider have the capability to expand? Do they have additional quality process modules you can add on? What are their global capabilities? Is their platform truly localized (i.e. language, measurement system – Metric vs. Standard, etc.)?
- ✓ Is the solution available to follow the lifecycle of your product – concept through end-customer delivery?
- ✓ Support after launch:
 - Global ability to have hotline access, dedicated teams, on-site representatives
 - Dedicated team capability (including hotlines, true localization, etc.)
- ✓ Do they have the capability of drill-down analytics so you can target an issue (for example: identify the specific job #, lot, shift, operator, VIN, supplier, etc.)?

