


Enterprise Quality Concerns You Can't Afford to Ignore

6 hurdles to overcome on the path to operational excellence in manufacturing

A photograph of a manufacturing facility, likely a textile or apparel factory, showing large machinery with long, curved tubes. Two men in business suits are standing in the background, looking at a document. The image is overlaid with a dark, semi-transparent pattern of small circles.

Contents

What's Possible with Total Enterprise Quality	3
Why Quality Is Now an Enterprise Concern	4
A Realistic View of Quality	5
No Global Visibility	5
Lack of Traceability	6
Incomplete Plant View	6
Delayed Improvement Cycles	6
Shop Floor Overwhelmed	6
Poor Analytics	6
Embrace the Possibilities	7

What's Possible with Total Enterprise Quality

Without an end-to-end Quality Management system, manufacturers are at risk for compromising product quality, brand integrity, and overall process efficiencies. Managing quality in a centralized quality hub can help manufacturers overcome the most difficult challenges of today's changing manufacturing landscape. Whether an organization is looking to achieve quality on a global scale or gain visibility into the product lifecycle, the Manufacturing Intelligence provided by a quality hub gives manufacturers the power to identify areas for improvement, improve quality, and increase profitability.

Total enterprise quality is the future of Manufacturing Intelligence.

With an end-to-end quality system in place, manufacturers can easily overcome the challenges associated with the ever-evolving complexities of the supply chain:

Visibility: A cloud-based quality system offers a real-time view of data, assimilating information from disparate locations. For example, Trek Bicycle Corp., headquartered in Waterloo, Wisconsin, monitors and analyzes data collected by its suppliers in China, taking supply chain visibility to a global level for maximum cost reductions and product quality.

Traceability: With an end-to-end quality system, manufacturers can adhere to the most stringent compliance requirements and protect their brand's reputation. By employing a quality system, a leading U.S.-based restaurant chain has connected its supply and distribution network from farm to fork. Now, if a recall were to occur, the company can quickly respond by identifying origins and isolating the faulty product.

Complete plant view: A complete view of the plant floor allows manufacturers to predict errors before they occur – reducing waste and preventing costly recalls. In fact, after implementing a quality system, a mid-sized, U.S.-based snack food manufacturer saved more than \$1 million in operational costs and reduced customer complaints by over 30% in the first year of deployment at just one manufacturing plant.

Quicker improvement cycles: Total enterprise quality gives manufacturers the power to better allocate resources through plant-wide comparative analysis. With a single view of quality data, users can prioritize efforts to continuously enhance the quality of their products. For example, General Cable reports that it can choose its projects based on statistical evidence, focus on areas that need improvement, and make better decisions. The company experienced an ROI in fewer than six months after implementing a quality hub.

Better workflow management: A quality hub helps relieve pressure placed on busy plant operators to collect data and make quality checks. A streamlined approach allows shop floor operators to perform fast data collection and analysis, without missing a beat on their day-to-day duties. At C-Axis, the company used a quality system to consolidate a number of different systems and applications, making it easier and faster for plant operators to collect data.

Million-way analytics: Meaningful data can be collected, organized, and analyzed with a quality hub. This data is vital in helping manufacturers improve operations, inform customers, and make strategic business decisions. By collecting meaningful data in real time, NorthStar Battery is able to make adjustments to its processes moments after a statistically valid amount of failed data points occur – rather than a week after the fact.

Why Quality Is Now an Enterprise Concern

Traditionally, a company's quality system has been regarded as the department that tests and confirms finished goods against specification. Conforming product gets approved for shipping, and non-conforming product is held back for further disposition — usually scrap, rework, or re-grade. Each individual manufacturing location determined its own approach to managing quality. The philosophies employed, software utilized (if any), and approaches to data management varied as much as the geography. This segmented, departmentally focused approach made sense in simpler environments; however, the quality department's role is rapidly expanding due to larger forces at play:

Multi-locational production and suppliers. Production rarely occurs at a single site. Typically, materials and supplies are acquired from all over the world. Supply chains have also become more complex. Each added step in the supply chain contains risk, increasing the likelihood that the product or subcomponents will fail to meet specifications, resulting in increased costs to address and fix any problems that arise. Due to the complexity of the environment, it's critical for manufacturers to have oversight of product quality across the whole process — inside and outside of the factory walls.

Increased regulations. Regulatory compliance no longer means just filing paperwork. Today, the ability to quickly identify any at-risk subcomponents and provide documentation of compliance with proper procedures is critical. Today's environment requires that companies and individuals understand regulations and ensure compliance with intricate regulations.

The need for centralized data across multiple physical sites. As companies add and expand physical locations to aid in production, the likelihood of having segmented data increases. Segmentation of data makes it harder for quality and operations executives to view quality data across the entire company and see things in the "big picture" perspective. As a result, discrepancies in related data at critical multisite junctions may not be realized in time to prevent major reworks or recalls. It is extremely important for quality data to be aggregated and analyzed across the entire company.

Flexibility in data collection. Companies that manufacture large components or companies that have large, spread-out shop floors still need to collect quality data. Furthermore, these companies must be able to collect data efficiently to keep production moving at an optimum pace. For these companies, the ability to enter quality data into a quality system remotely, away from a physical workstation becomes necessary to stay competitive.

Standardization. Cost- and resource-cutting in IT creates a greater need for corporate standards. It costs too much to deploy and manage multiple solutions. The cost of setting up customized ways to share data among systems is also under increased scrutiny from both the CIO and CFO offices.

Online voice of your customers. Customer satisfaction has always been firmly linked to a company's financial success but today, the influence of the online market and social networks is enhancing that relationship. The different avenues to share and review products online have enhanced the role of the customer. It has been said that consumers enjoy their products privately and dislike their products publicly. With those reactions easily shared online, the need for improved quality standards and monitoring has become vitally important

As a result of these forces, quality must take a more prominent, enterprise-scale role. The quality department has the unique advantage of owning all data needed to monitor, control, and improve the end quality of the produced piece — and to deliver Manufacturing Intelligence about a corporation's products.

With this knowledge, ownership of quality can be expanded enterprise-wide, providing a strong defense to protect the goodwill or brand of its employer and, in many cases, the lives and safety of its customers. As Gartner Inc. analysts note, "outside finance, there is no one business discipline that touches and impacts more organizational functions than quality."¹

"Outside finance, there is no one business discipline that touches and impacts more organizational functions than quality."¹

¹ Gartner Research, Hype Cycle of Consumer Goods, 24 July 2012, Analysis
By: Simon F. Jacobson; Ray Barger Jr.

A Realistic View of Quality

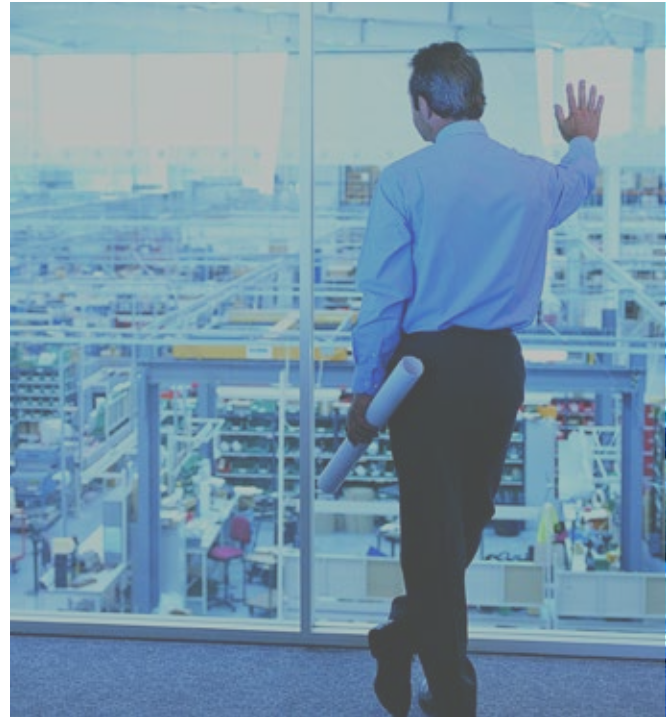
A quality system is a labyrinth of data, evolving as needed to meet growing compliance demands and technological advances. As a result, data is everywhere. Most companies have a wide variety of systems that house some type of quality data. Whether collected by an ERP or MES system, exported to spreadsheets, manually entered into paper forms, or gathered into other repositories, data is generally dispersed across a variety of different, non-communicating systems. This makes quality data challenging to coordinate and aggregate and exceptionally difficult to extract meaningful information from.

In most cases, there are few options for aggregating quality data so that the “big picture” of quality can be viewed. The variety of systems forces quality experts into complicated and time-consuming tasks of importing and exporting data into digital spreadsheets or some other system so that they can view the complete picture. Because of the required effort and the frequent need to involve the IT department, most companies do not even bother with importing and exporting data. Therefore, they have limited insight and receive little benefit from quality data across these systems.

The bottom line is that, overall, most companies lack quality Manufacturing Intelligence, and the repercussions impact everyone from the boardroom to the shop floor.

Today the technology exists to capture, retain, and distribute data related to all aspects of quality across an enterprise. So, why are companies still struggling with organizing and leveraging their quality data?

What’s standing in the way?



Problems with the Typical Approach to Quality Management

- › No Global Visibility
- › Lack of Traceability
- › Incomplete Plant View
- › Delayed Improvement Cycles
- › Shop Floor Overwhelmed
- › Poor Analytics

No Global Visibility

Every plant has data, but very few companies have an efficient means of data sharing, especially when the data is housed in disparate silos. A lack of standardization can make cross-plant and global quality comparisons extremely difficult if not impossible.

Without this ability, companies can’t identify and target efforts that ultimately lead to quality improvement and cost reductions. A February 2012 Gartner report, “Redefining Manufacturing Strategy in the New Era of Optimized Product Supply,”² emphasizes the notion that the focus of manufacturing operations has shifted from single sites to a complete network. According to analyst Simon Jacobson, the shift is “a result of companies understanding their process capabilities within manufacturing and how they contribute to the end-to-end supply chain.”

² Gartner Research, *Redefining Manufacturing Strategy in the New Era of Optimized Product Supply*, 13 February 2012, Analysis by Simon F. Jacobson.

Mounting Traceability Obstacles

With stricter traceability regulations from the FDA, including the Food Safety and Modernization Act (FSMA), which “aims to ensure the U.S. food supply is safe by shifting the focus from responding to contamination to preventing it”³, manufacturers across the United States are forced to navigate increasing obstacles to meet the specific requirements mandated by multiple governing bodies.

In most organizations, a beginning-to-end data structure does not exist. Disparate data sources and siloed repositories don't communicate, suppliers use their own quality systems and key performance indicators (KPIs), and components imported from other countries don't require the same high level of manufacturing standards. With this lack of standardization, it is nearly impossible to produce necessary audit documentation or respond quickly when product recalls occur and potentially damage a brand's reputation — or worse, cause harm or death to the public.

Incomplete Plant View

Even within a single plant, much data collection and analysis is done after the fact. Manual data entry and periodic batch checks often delay the discovery of quality issues until long after they arise and ultimately result in large quantities of scrap and rework.

Because companies typically do not have forward-looking quality systems, they have no way to predict problems before they occur. One global automotive OEM lost between \$85 billion and \$97 billion in sales due to the recall of two million automobiles in 2014. Waiting to see what five-alarm fire erupts each day may keep people busy, but it is a dated and reactionary practice that is devoid of planning and extremely expensive.

Delayed Improvement Cycles

The delay in the delivery of useful data that results from siloed repositories and manual data collection also delay improvement cycles. For quality, continuous improvement, and Six Sigma teams to prioritize improvement efforts, there must be a complete view of the items to be prioritized — or a comprehensive view of quality across an entire plant.

Effectively allocating improvement resources requires plant-wide comparative analysis with all the data in the same place to identify the opportunities for improvement. However, if data continues to reside in silos and is not integrated for a single, comprehensive plant view, continuous improvement efforts will inevitably fail.

Overwhelmed Shop Floor

Operators are busy. They have many duties and can't afford to spend much time interacting with a computer. However, critical sources of data come from the shop floor and are typically captured by those busy operators.

If the quality system is too complicated, too difficult to work with or fails to provide information that is valuable to the operators, the operators will not embrace the system. As a result, the entire quality initiative will fail — or at the very least, result in poor data collection habits and missed quality checks. To be successful, a quality system must be intuitive, simple, easy to run, and fast at performing data collection and analysis.

Poor Analytics

Data is power. The sheer volume of information and forward-looking insight captured in data collection can easily guide any manufacturer in the right direction for success. However, the key to unlocking this Manufacturing Intelligence is analyzing and interpreting the data, which becomes difficult when you have multiple types of software deployed across the enterprise.

Quality data resides in disparate systems, creating data silos that prevent easy and quick reporting. A significant amount of time is spent by both quality and IT professionals finding “the right data” and formatting it before it can be analyzed. Without the right data in the right place in the right format, the results of any analysis will be skewed, creating inaccurate trends and patterns that could significantly alter the trajectory of even well-laid plans.

³ U.S. Food and Drug Administration, The New FDA Food Safety Modernization Act (FSMA), <http://www.fda.gov/food/foodsafety/fsma/default.htm>.

Embrace the Possibilities

Manufacturing organizations can no longer approach Quality Management in crisis mode, never looking beyond the next immediate problem they have to fix. Manufacturers that want to compete effectively in the global economy have an imperative to find and take advantage of the opportunities hidden in their quality data.

Traditional factors in manufacturing environments present hurdles for changing the way data is collected and used. Lack of proper, enterprise-wide technology solutions as well as internal processes and challenges have a dramatic impact on a company's ability to monitor quality.

Fortunately, today's technologies and sophisticated analytics engines provide the means to overcome the roadblocks that prevent operational excellence — without imposing heavy burdens on staff, resources or budget.

Now is the time to Re-Imagine Quality in your organization.

To learn more, visit InfinityQS on the web at infinityqs.com.





About InfinityQS International, Inc.

InfinityQS International, Inc.® is the global authority on enterprise quality. The company's Manufacturing Intelligence solution delivers unparalleled visibility across the enterprise, from the shop floor to the boardroom, enabling manufacturers to re-imagine quality and transform it from a problem into a competitive advantage. Powered by centralized analytics, InfinityQS solutions provide operational insight to enable global manufacturers to improve product quality, decrease costs and risk, maintain or improve compliance, and make strategic, data-driven business decisions.

Headquartered near Washington, D.C., with offices in Seattle, London, Beijing, and Shanghai, InfinityQS was founded in 1989 and now services more than 40,000 active licenses with more than 2,500 of the world's leading manufacturers, including Kraft Foods, Ball Corporation, Boston Scientific, Graham Packaging, and Medtronic. For more information, visit infinityqs.com.

Corporate Headquarters

InfinityQS International, Inc.
12601 Fair Lakes Circle
Suite 250
Fairfax, VA 22033
USA

T/ +1-703-961-0200

E/ GetInTouch@infinityqs.com

EMEA Headquarters

InfinityQS Europe Ltd
730 Capability Green
Luton, Bedfordshire
LU1 3LU
United Kingdom

T/ +44 (0)1582 380560

E/ GetInTouch@infinityqs.com

China Headquarters

InfinityQS International, Inc.
2107B, Building No. 1,
G.T. International Center
Yongandongli,
Jianguomenwai Avenue
Chaoyang District,
Beijing, China 100022

T/ (86)10 6569 9909

E/ GetInTouch@infinityqs.com