


# Operational Insight: Information That Drives Excellence

A person's hands are shown holding a tablet computer. The background is a blurred industrial or factory setting with various equipment and materials. The text is overlaid on the left side of the image.

Discover untapped opportunities  
for cost reduction, quality  
improvement, and brand  
enhancement.

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## Take Quality to a Higher Level

Tired of performing short-term quality fixes only to see the same problems pop up again and again? Fed up with dealing with emergencies but never really getting ahead of the quality curve? Wish you had time instead to look at the “big quality picture” and identify the biggest improvement opportunities? Most quality managers would like to break this frustrating cycle, but that goal can seem hopeless — if you stay stuck in the standard “firefighting” mode of most Quality Management systems.

But with true enterprise-wide visibility into the quality data you already have, you can shift from reactive mode and transform into a proactive, strategic guru.

It's a radical shift in mindset. But when you can see and analyze all the quality data across your enterprise, all in one place, you gain the operational insight you need to identify systemic problems and make the greatest impact on company performance. From there, things only get better: with the right solution, you can start asking — and answering — the big questions that can take product quality to the next level and move your business ahead of the competition.

The status quo isn't good enough anymore. Today, it's essential to go beyond “good enough” and seize every opportunity to gain a competitive advantage in your industry.

As a quality professional, most of your time is likely spent focusing on the negative. If quality slips, checks aren't performed, or issues aren't addressed, the consequences can range from tedious to disastrous: waste or rework, recalls, angry customers, regulatory fines, even long-term damage to your company's brand.

Of course it's vital to solve quality problems as quickly as possible, when and where they occur. Many companies have installed Quality Management systems that provide data to help you put out those fires. But only those solutions that deliver true enterprise-wide visibility can provide operational insight that you can use to *prevent* problems from occurring and make large-scale improvements throughout your entire enterprise.

In this paper, we explain why it's critical for manufacturers to adopt a new vision of what quality means in their operations. The status quo isn't good enough anymore. Today, it's essential to go beyond “good enough” and seize every opportunity to gain a competitive advantage in your industry. When you have insight into every level of your organization, you can stop focusing on the negative and see the positive.

Re-imagining what quality means is not easy. Let's take a look at why it's important and the mental shift it takes to get there.





# The Problems with Fixing Problems

Welcome to the life of a quality manager: All emergencies, all the time. Whatever industry you work in, most days are a version of the same story. Something doesn't meet specifications. Whether because of machine failure or process divergence, the produced product isn't meeting your quality standards. Somewhere along the line, there's a problem, and it's up to you and your team to figure out what went wrong and how to fix it — *now*.

The trouble with the status quo is that there's no way out of the cycle. You spend so much time addressing urgent issues that you have no time to think long-term. There's no time to consider how quality data could be used to strategically make large-scale improvements that benefit all production lines in all plants. Even if you want to do so, you must overcome multiple hurdles before you can shift from reactive to proactive. At the heart of this challenge is how your company collects and stores quality data.

## **Data Collection and Storage: It's a Disaster**

If your company is like most, then there are lots of systems that store bits of information that are critical to understanding overall quality. The issue appears in the form of multiple types of data, generated by multiple systems, and stored in multiple locations. No single system stores it all. From ERP and MES systems to spreadsheets and paper, quality information is scattered and de-centralized.

When a problem occurs, you need to determine where the problem originated. That means reviewing data that provides traceability specific to when, where, and how the issue occurred. Some of this data might be written on paper, some stored in the MES system, and some entered in spreadsheets. You must hunt down each separate piece of data to try and fit the puzzle together. Depending on the amount of data collected, that hunt can be time-consuming, overwhelming, even impossible.

## **Breaking the Cycle**

It's easy to see why quality professionals rarely have time to do anything but chase down whatever emergency has cropped up that day. But what if all of your quality data was centralized? What if those different systems automatically saved the critical information you need into that centralized system? If that happened, then you could:

- › Consolidate quality information in one place
- › Review quality data from across the enterprise
- › Get faster, easier access to the data you need
- › Generate previously unknown insights that could improve quality across all plants

## An Ounce of Prevention

A solution that unifies your data from all its diverse sources and presents it in one centralized, easy-to-access data hub provides true visibility. It enables automated analysis and reporting about what's happening in any process, in real time — across your entire enterprise. (We go into more detail about how this works in the white paper *Enterprise Visibility: See the Opportunities You've Been Missing*, available at [www.infinityqs.com](http://www.infinityqs.com).)

When combined with your quality experience, that visibility enables an approach that goes beyond after-the-fact firefighting and leads to real understanding of the workings of your whole organization.

The most exciting part? Insights across the enterprise that can allow quality professionals to drive large-scale quality improvement and cost reduction. When data is centralized, you can easily analyze data specific to any combination of plants, regions, products, processes, shifts, employees, jobs, lots, production orders, suppliers — and just about any other criteria — and do so from anywhere. No more running around gathering paper, working with spreadsheets or trying to transpose and normalize data to support data analysis.

With critical quality information at your fingertips and available in the same format, you can create reports that tell you where to prioritize your efforts. You can more quickly solve most crises, leaving time to shift into proactive mode, allowing you to strategically use quality information to generate the greatest organization-wide benefits.

Imagine viewing how your entire enterprise or factory is performing on a single report. Do so by just opening a browser on your tablet or smart phone and seeing region and/or plant-specific summaries and details (**Figure 1**).

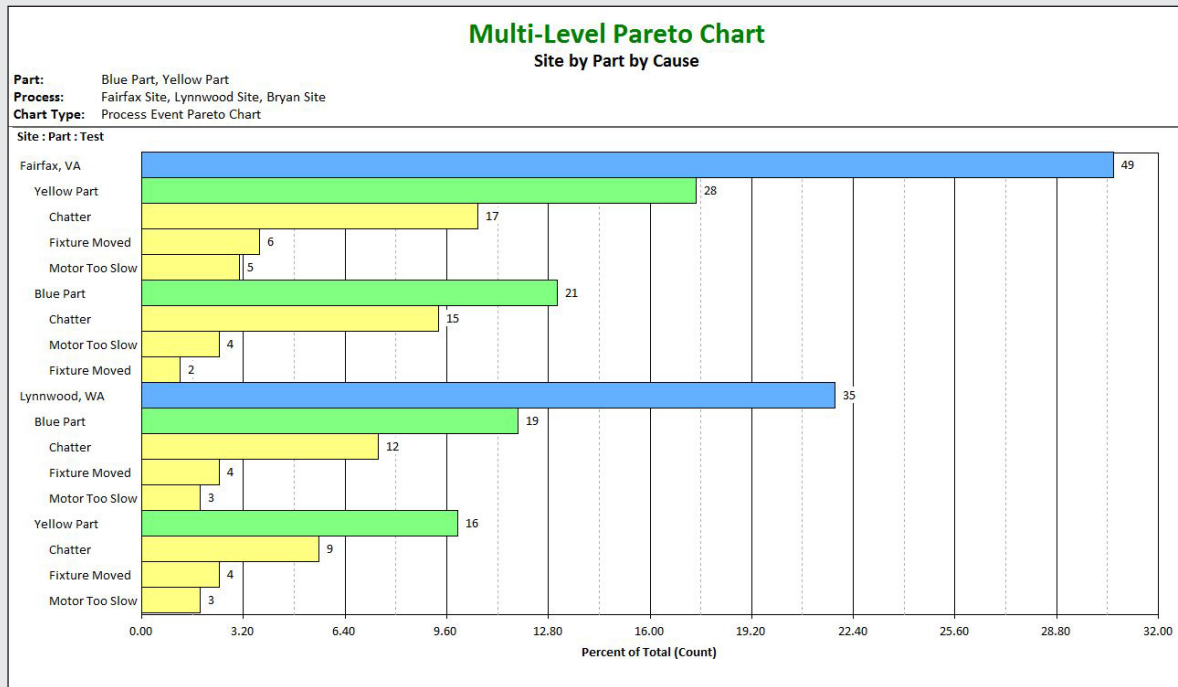
When combined with your quality experience, that visibility enables an approach that goes beyond after-the-fact firefighting and leads to real understanding of the workings of your whole organization.

Figure 1: Get immediate, real-time visibility across the entire plant.

| <b>Factory At A Glance</b><br><b>Allows Remote Monitoring of Active Production</b> |           |                                     |                       |           |        |        |        |          |      |      |
|--|-----------|-------------------------------------|-----------------------|-----------|--------|--------|--------|----------|------|------|
| <b>Green Row:</b>  |           | No alarms                           |                       |           |        |        |        |          |      |      |
| <b>Yellow Row:</b>   |           | Open events in previous subgroup(s) |                       |           |        |        |        |          |      |      |
| <b>Red Row:</b>  |           | Event in most recent subgroup       |                       |           |        |        |        |          |      |      |
| Part   | Process   | Test                                | Last Entry            | Subgroups | Pieces | Mean   | Range  | Est. SD  | Cp   | Cpk  |
| Yellow Part  | Lathe 167 | OD - Loc B                          | 1/25/2017 10:47:24 AM | 25        | 75     | 1.7500 | 0.0015 | 0.000914 | 1.82 | 1.82 |
| Yellow Part  | Lathe 167 | OD - Loc A                          | 1/25/2017 10:47:24 AM | 25        | 75     | 1.2490 | 0.0007 | 0.000399 | 4.22 | 3.34 |
| Yellow Part  | Lathe 167 | OD - Loc C                          | 1/25/2017 10:47:24 AM | 25        | 75     | 1.5016 | 0.0016 | 0.000923 | 1.81 | 1.23 |
|  |           |                                     |                       |           |        |        |        |          |      |      |
|  |           |                                     |                       |           |        |        |        |          |      |      |
| Yellow Part  | Lathe 225 | OD - Loc B                          | 1/25/2017 10:41:07 AM | 11        | 33     | 1.7481 | 0.0009 | 0.000533 | 3.13 | 1.95 |
| Yellow Part  | Lathe 225 | OD - Loc A                          | 1/25/2017 10:41:07 AM | 11        | 33     | 1.2490 | 0.0003 | 0.000198 | 8.48 | 6.77 |
| Yellow Part  | Lathe 225 | OD - Loc C                          | 1/25/2017 10:41:07 AM | 11        | 33     | 1.4984 | 0.0014 | 0.000854 | 1.95 | 1.32 |
|  |           |                                     |                       |           |        |        |        |          |      |      |
|  |           |                                     |                       |           |        |        |        |          |      |      |
| Blue Part  | Lathe 167 | OD - Loc A                          | 1/25/2017 10:40:04 AM | 13        | 39     | 2.7522 | 0.0013 | 0.000782 | 5.33 | 1.20 |
| Blue Part  | Lathe 167 | OD - Loc B                          | 1/25/2017 10:40:04 AM | 13        | 39     | 1.4998 | 0.0024 | 0.001420 | 1.17 | 1.13 |
| Blue Part  | Lathe 167 | OD - Loc C                          | 1/25/2017 10:40:04 AM | 13        | 39     | 1.4991 | 0.0061 | 0.003599 | 0.46 | 0.38 |
|  |           |                                     |                       |           |        |        |        |          |      |      |
|  |           |                                     |                       |           |        |        |        |          |      |      |
| Blue Part  | Lathe 225 | OD - Loc A                          | 1/25/2017 10:41:24 AM | 12        | 36     | 2.7400 | 0.0015 | 0.000871 | 4.78 | 3.83 |
| Blue Part  | Lathe 225 | OD - Loc B                          | 1/25/2017 10:41:24 AM | 12        | 36     | 1.4981 | 0.0019 | 0.001094 | 1.52 | 0.94 |
| Blue Part  | Lathe 225 | OD - Loc C                          | 1/25/2017 10:41:24 AM | 12        | 36     | 1.4988 | 0.0030 | 0.001744 | 0.96 | 0.72 |

Pull up charts, graphs, and analyses to begin unraveling cross-plant problems and determine the best tactics for fixing them (Figure 2).

Figure 2. Multiple levels of visibility mean you no longer need to hunt for information.



### Insight by Leaps and Bounds

This level of extensive and unified data availability opens up new possibilities. Because you now have more time in the day, you can devote some of it to analyzing aggregated historical data to look for patterns. Access to data across all equipment, processes and production lines makes comparing data throughout facilities a snap.

A solution that makes data **readily available** and **easy to analyze** can produce immediate results. The InfinityQS solution features an easy-to-use and easy-to-read interface that can deliver real-time information on the shop floor or to your tablet or any laptop. And easy-to-configure, flexible, targeted reports can pull in aggregated historical information not just from across a line, but from across your entire plant — even from multiple plants — without requiring expensive hardware purchases or ripping and replacing existing systems.

## Broaden Your Quality Horizon

Here's where things get interesting — assuming your Manufacturing Intelligence (MI) solution provides true enterprise-wide visibility. By studying variances across time, you can determine exactly what might be causing a problem — but you can also discover opportunities to *improve* quality not just across one line, but across the whole plant, and even across the entire enterprise.

With the level of visibility that a centralized, unified database provides, you can suddenly see which processes or practices provide the best consistency and efficiency. When seen at a macro level, such useful and actionable insights about your processes and operations — delivered visually through easy-to-interpret charts — enable you to start developing and applying best practices consistently across all your plants, lines, processes, and products.

Your questions change from “What on earth do we work on to make the greatest improvement in quality?” to:

- › Which regions/plants/lines have the highest/lowest defect rates?
- › What single global quality issue, if eliminated, could generate the greatest bottom-line benefit?
- › Which processes or sites are most or least efficient?
- › What global quality success, if replicated, could dramatically improve enterprise performance?
- › Which regions/plants/lines should be leveraged to produce specific products at the highest quality and lowest cost?
- › Which suppliers are meeting/not meeting my quality needs? What are the issues?
- › Which regions/plants/lines consistently make the highest/lowest quality products?

When seen at a macro level, actionable insights about your processes, logistics, and operations enable you to start developing and applying best practices consistently across all your plants, lines, processes, and products.

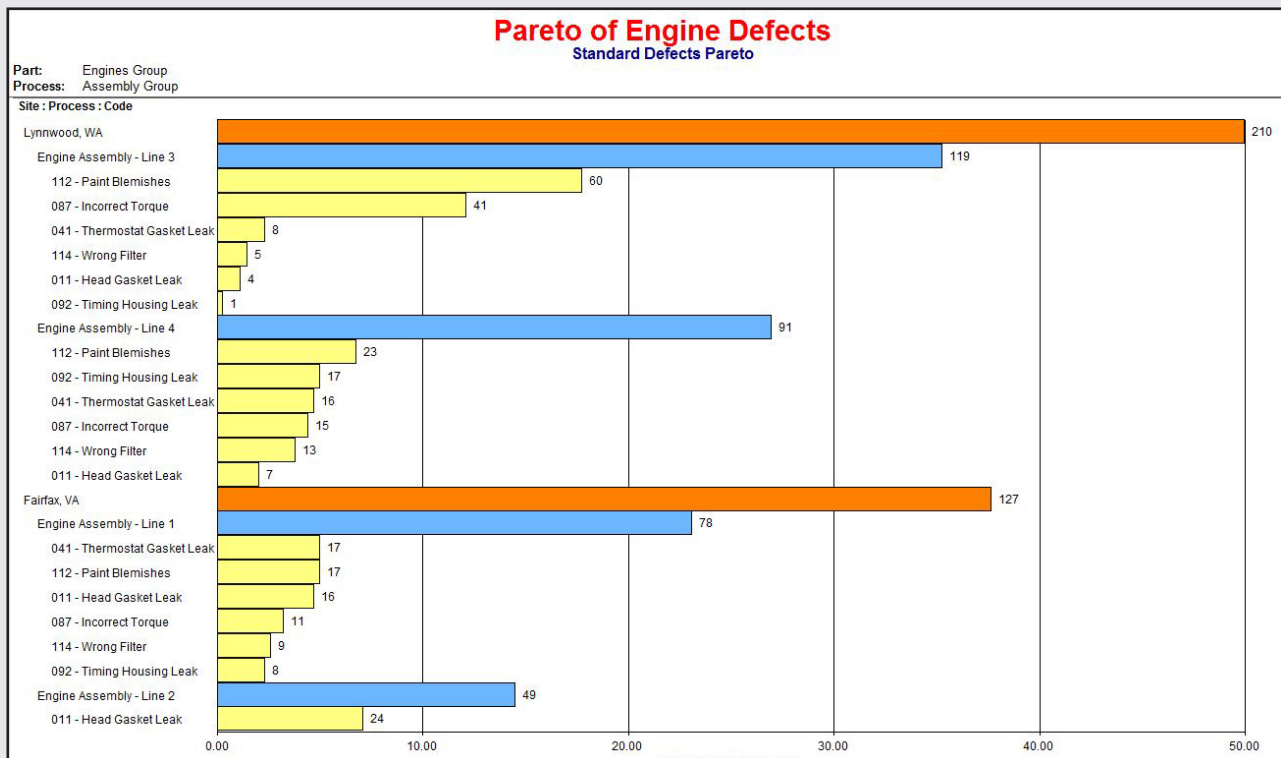


To answer these questions, look for an MI solution that features a top-notch analytics engine and intuitive reporting options to sort through the data. The idea is to make your data more easily consumed and understood. When you demo products, ask for a good look at reporting and how data from many different plants can be aggregated, viewed and analyzed.

For example, suppose that you're collecting defect data at multiple manufacturing sites and want to determine which sites are having the most issues. Can you get that information quickly?

Better still, can you identify which issues are to blame? You can — *if* you're using a quality solution that supports strategic operational insight.

**Figure 3. Strategic, operational insight enables multiple levels of cost and resource recovery.**



Through charts like the one in **Figure 3**, you can immediately see which assembly line is producing the most defects — and thus which line offers the greatest opportunity for reducing defects and related waste and cost. In addition, you can identify *specific* defects. From this information, you can determine which defects can be corrected most quickly for the most benefit, and which are bigger issues that demand more time or money to fix.

If you can get that level of insight from one chart showing the assembly lines in two plants, imagine the insights that you can reap from this level of visibility into all the lines in all the plants throughout your entire enterprise. This aggregated data offers improved visibility into your operations, enabling you to make smart operational decisions that can literally save millions.



## A Better Way

For today's quality professionals, the short-sighted *fix-it* mentality has got to go. Why wait for the red flag? Get insight that can move your company and your profession into the future.

When you gain a high level of insight into your operations and quality data, you can solve problems more quickly, prevent problems more easily, and open up a new realm of possibilities for your company. You're no longer stuck in reactive mode, putting out fires as problems crop up. You're using your quality data to plan ahead, perform better — and outpace the competition.

### 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](http://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](mailto: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](mailto:GetInTouch@infinityqs.com)

#### China Headquarters

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

T/ (86)10 6569 9909  
E/ [GetInTouch@infinityqs.com](mailto:GetInTouch@infinityqs.com)