

## Global Transformation: Put Quality Data into Action



Take quality from a cost to a profit center and reap the rewards of re-imagination.

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**Knowledge is power, as the saying goes. Your brand can gain power when you combine enterprise-wide visibility into your quality data with strategic operational insight. The results include new and unexpected means of global competitiveness, reduced costs and defects across the supply chain, and one of the most transformative capabilities of all: turning quality from a cost to a profit center.**

Today's manufacturing environment has seen years of disruption. Change is necessary if you expect to succeed. The competition is more grueling than ever, and every penny counts. The big question for many manufacturers is which actions have the greatest potential for benefit, with the least amount of risk? The answers are more accessible than you might think—and have the potential to transform your business.

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## Global Questions, Transformative Answers

Transformation doesn't just happen. First, you need a solid understanding of which changes need to be enacted. To clearly see the issues that stand in your way and to define the causes and solutions, you need two things:

- › **Enterprise visibility.** Your quality data represents an untapped wealth of information about your operational processes: strengths, weaknesses, and opportunities. With unified, centralized access to all the quality data from each production line and every manufacturing site, a strategic vision of the entire enterprise begins to take shape. To learn more about enterprise visibility, see the white paper "Enterprise Visibility: See the Opportunities You've Been Missing" on the [Resources page at www.infinityqs.com](http://www.infinityqs.com).
- › **Operational insight.** Unleash the power of enterprise visibility by combining analysis tools and operational expertise to pin down the issues that are specific to your industry and your organization. The insight you gain can provide a solid direction for the upcoming transformation. To learn more about operational insight, see the white paper "Operational Insight: Information That Drives Excellence," [also available on our Resources page](#).

When you simplify the collection, analysis, and notification of real-time data, you can catch, solve, and even prevent problems as quickly as possible. But when you unify and evaluate historical data, you gain the power to improve overall quality levels.



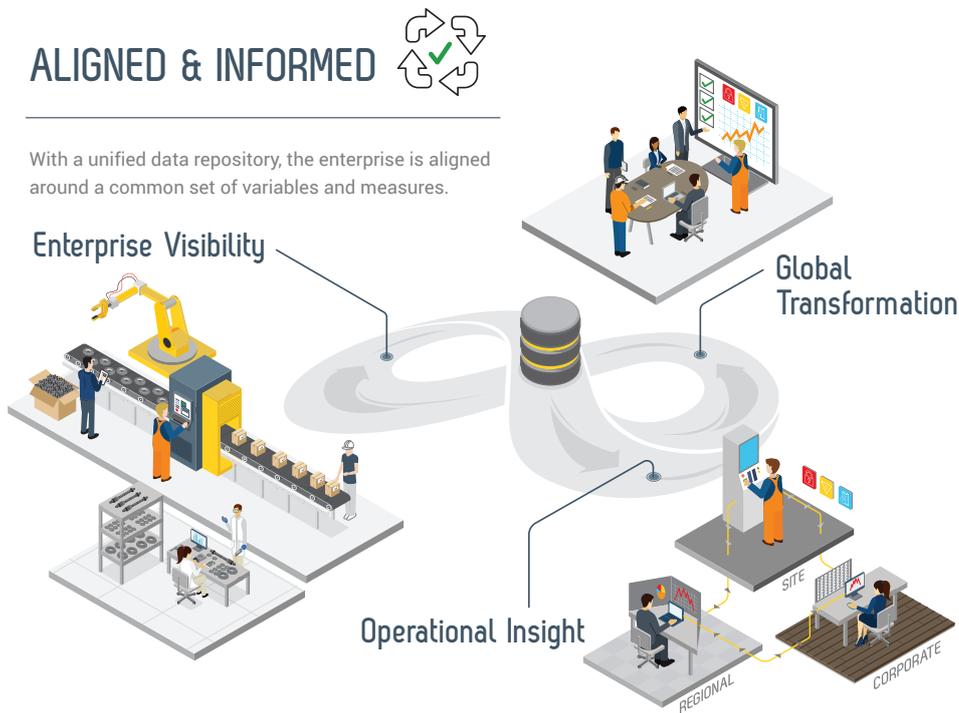
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## Strategic Decisions, Measurable Results

When you use visibility and insight to change the conversation around quality, new opportunities open up. Instead of expending so much time and energy firefighting low-level quality issues, you begin to see opportunities for quality and process improvement. This big-picture quality information means great things for the various teams in your enterprise:

- › **Quality engineers** can identify where the highest defect levels occur and which production lines need the most attention.
- › **Operations managers** can locate deviations from standard operating procedures as well as the strengths and weaknesses of various operational approaches.
- › **Six Sigma teams** can view quality data across all plants and prioritize their projects to quickly improve costs and quality.
- › **Executives** can intelligently apply budgetary dollars to generate the greatest return on their quality investment in the shortest amount of time.

Big changes start as a series of smaller improvements that create a climate of data-driven strategy and change.



How can something as simple as your quality data lead to such revolutionary results? Like most transformations, these big changes start as a series of smaller improvements that create a climate of data-driven strategy and change:

- › **Operational efficiency.** Many issues with product variation—a major cause of inefficiency and costs—stem from the foibles of human nature. Perhaps various operators think they each have a “special knack” for setting up a production line, leading to an over-controlled process that produces less consistent product and results in lost setup time. By reducing such variables, operational efficiency can be greatly improved.

- › **Reduced maintenance costs.** Many manufacturing processes use tooling, chemicals, or components that produce a statistical “tell” when they aren’t working at full efficiency or when they are approaching failure. By using quality data to catch these tells before a failure occurs, you can plan, schedule, and perform line maintenance without the expense of overtime or express parts delivery—and with minimal downtime.
- › **Reduced scrap and rework.** When you catch problems before they happen, or when you have the insight to quickly pinpoint and solve problems if they do occur, you foster an environment of continuous improvement that minimizes—and in some cases, eliminates—the need to scrap or rework faulty products.
- › **Improved communication.** When everyone across your organization—from the production line to the boardroom—is using the same data to make decisions and has immediate access to that data from any location, the corporate level and site level always get the same story. Conversations can happen more quickly and more effectively, and everyone becomes more engaged in supporting a common goal: improving product quality.
- › **Engaged management.** With a system that enables all users to explore data and gain insights, quality data reaches beyond the quality team and can benefit each site in every region across your company. Instead of waiting for outdated daily or weekly reports, managers can view historical data during meetings and harness the knowledge of their staff. These data-driven meetings and decisions can empower everyone in the organization to change how information is accessed and create an atmosphere where bottom-line results can be achieved.
- › **Strategic thinking.** When quality managers know that all the necessary data is being captured, alarms are being responded to, and employees are directly engaged and empowered, they can spend more time focusing on how to strategically improve product quality while spending less time fixing mistakes.

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These are some of the examples of what organizations can achieve when using a true enterprise quality system. The InfinityQS solution helps manufacturers revitalize their business by re-imagining what they can do with their quality data. Those who embrace this strategic quality mindset can achieve incredible results.



# Real-Life Success

The idea of transforming today's quality data into tomorrow's strategic decisions and operational victories might *sound* great; but what does that transformation really look like?

To spark your imagination, here are some real-life examples of actual, measurable results from InfinityQS clients.

## Pinpointed Problems: Saving a Production Plant

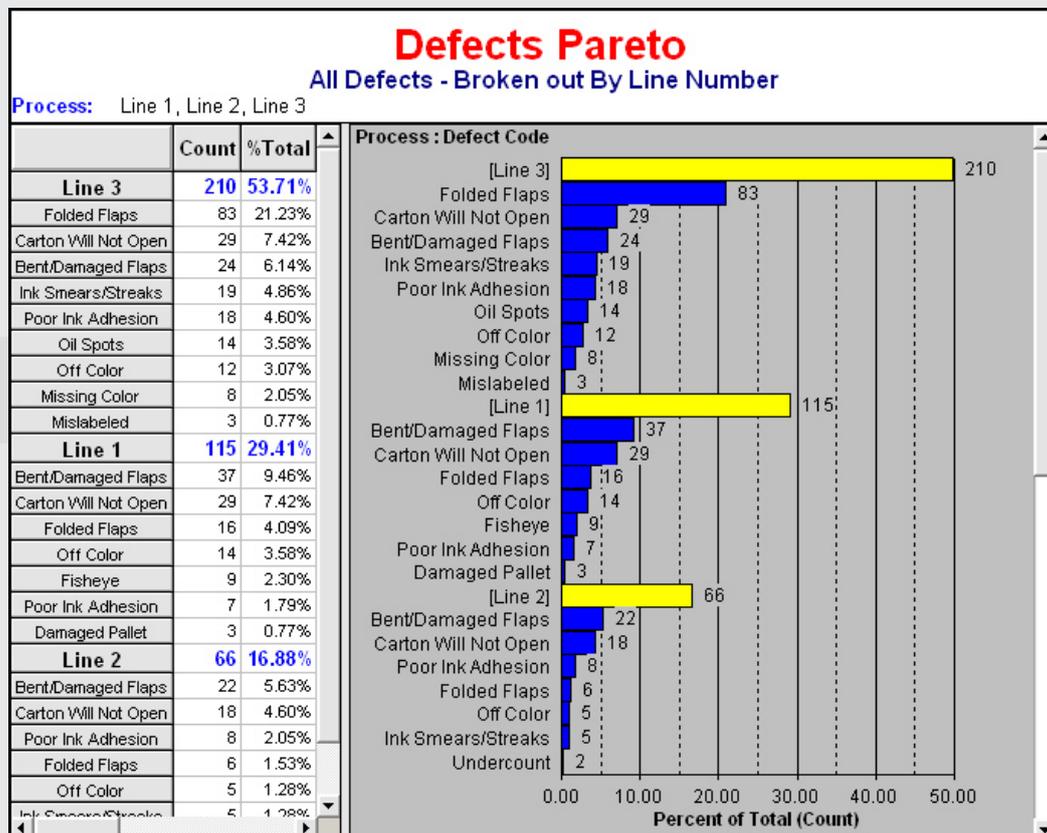
A folding carton company had dire quality problems at one of its plants. The facility struggled with issues ranging from the highest number of complaints to the worst overall product quality among more than 20 facilities throughout the organization. As a result, corporate headquarters was threatening to close the facility.

The plant produced hundreds of different product codes across multiple production lines, each including printing, die cutting, folding, and gluing processes. The new plant manager was determined to eliminate quality issues, but he didn't want to act on anecdotal information or opinion. Instead, he decided to use quality data evidence to pinpoint the sources of quality issues throughout the plant.

The plant's quality team started by setting up an acceptance sampling plan at the end of each production line. There, inspectors would randomly inspect a small number of cartons every hour and log defects into InfinityQS software. Not only did this give inspectors information necessary for accept/reject decisions on the shop floor, but it allowed them to accumulate and summarize defects data from the finished products.

After a couple of weeks of collection, the data was aggregated to reveal the most prevalent overall defects and illuminate quality issues unique to products, production lines, processes, and shifts. In essence, the data was converted into actionable information with powerful, easily understood summaries like the Pareto chart that **Figure 1** shows.

Figure 1. When data is unified in a single repository, it's possible to directly compare information across processes and lines.



With the operational insights provided by charts like the one above, the management team was able to identify specific areas where changes could dramatically reduce defects. Each day, the management team met to summarize data, understand it, and take action to improve operations. The results were nothing short of astounding.

As a result of their focused action, the management team was able to achieve Six Sigma quality levels on all primary product characteristics—in less than six months. Defect levels were reduced by more than 80%, and customer complaints—which had numbered as high as 100 per month—were eliminated completely. The plant achieved the lowest ever parts-per-million defect rate across the enterprise and went from being the poorest quality plant to the one producing the highest quality throughout the company. Customers were ecstatic, plant quality was transformed from “worst to first,” and corporate decided against closing the facility.

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### **Unknown Opportunities: Finding Hidden Profits in a Food Plant**

In the food industry, consistently filling packages to specified weight requirements is vital; too much fill negatively impacts profitability, while under-filling can potentially lead to regulatory issues and damage to brand reputation. But for one InfinityQS customer with more than 200 products and a three-shift, 24-hour operation, in-spec weight variances didn't present a problem; they presented a massive opportunity.

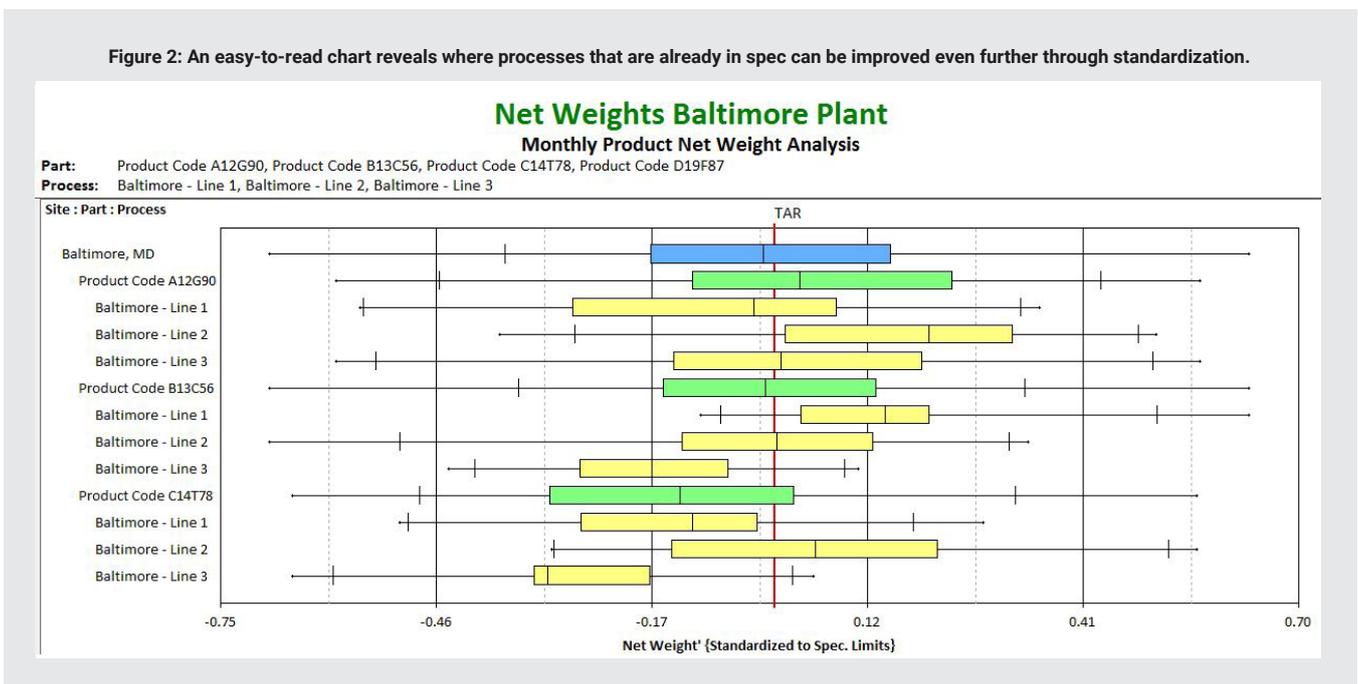
InfinityQS spent several days onsite at one of the company's many plants, performing a thorough site assessment and evaluating quality data and operational processes. For each of the company's top 14 products, InfinityQS summarized net weight data over a 12-month period, comparing performance across all of their different production lines.

Using this information, InfinityQS created some important “what-if” scenarios.



- › **What if the company did nothing with their processes and only reduced fill weights by 5%?** By reducing fill weight by just 5%, the company would see annual raw material savings of approximately \$160,000. However, the concern that underweight packages might be produced made this first question moot.
- › Instead, **what if variability in weights was reduced across all production lines?** After aggregating net weight data across only the top 14 product codes, InfinityQS found that each product ran differently on each line, as the sample data in **Figure 2** shows. One line ran higher than the others while another ran weights lower. Products ran differently across shifts, from week to week, and from month to month, and variation in weights was affected by numerous factors. The differences were not drastic and only a very small number of products actually fell out of spec. But in total, all of the sources of variability negatively impacted overall plant performance, which is typical of organizations that don't have the ability to visualize and summarize data across their enterprise.

**Figure 2: An easy-to-read chart reveals where processes that are already in spec can be improved even further through standardization.**



After evaluating the potential reduction in variances that could be achieved by working proactively to *standardize* manufacturing methods, procedures, setups, and processes, we found some interesting results. Conservative estimates indicated that the company could enjoy annual raw material costs savings of **more than \$3 million** through a series of simple standardization and process control methods.

That dramatic savings was estimated for just one plant, and one variable (net weight) for only 15 of the organization's 200+ products. How could this company achieve such incredible, transformative results? By aggregating and visualizing large amounts of data, extracting meaningful insights from it, and *acting* on the rich information they got by re-imagining how quality data could be used.

## Got questions? Get answers.

How can your organization achieve results like the ones in these examples? Although results vary across individual scenarios, these general guidelines can help you get started.

- › **Start with summaries.** When most people think of quality, they think of control charts and histograms. Although these tools are great for teams that work directly with products, the only way to gain deeper insights is through summarized information that crosses products and processes to enable companies to see their largest opportunities.
- › **Look for exceptions.** Look for the production lines, products, shifts, tooling, and so on that have the most issues. Finding exceptions is an excellent way to start using the quality tools, data aggregation, and normalization that top-notch enterprise quality solutions, such as those from InfinityQS, can provide.
- › **Look for savings.** Don't focus only on process-improvement opportunities. You may find that the processes with the largest improvement opportunities run the lowest volume or run the product with the lowest profit margins. By combining quality data with financial or production data, you can understand the true cost of poor quality and determine where to focus improvement efforts for the greatest financial impact.
- › **Look for "free" data.** Many companies have valuable data tied up in production systems, human-machine interfaces (HMIs), programmable logic controllers (PLCs), or other equipment. Sometimes getting this data is as simple as asking the equipment vendor how to output that data to an IP address, text file, database, or open platform communications (OPC) server. If so, you can collect and analyze that data with the rest of your quality data, potentially revealing additional savings.

You're already collecting the data. You're already reviewing and analyzing the data. Why not take the next step—and *transform* your operations?

InfinityQS is available and ready to help. Visit <http://www.infinityqs.com> for more information, case studies, and video. Or contact us for a demo and see exactly how the InfinityQS solution can transform *your* business.

### About InfinityQS International, Inc.

InfinityQS International, Inc.<sup>®</sup> 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).

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