InfinityQS®
Quality Re-imagined

Quality and the Missing Puzzle Piece

Data Integration Scenarios
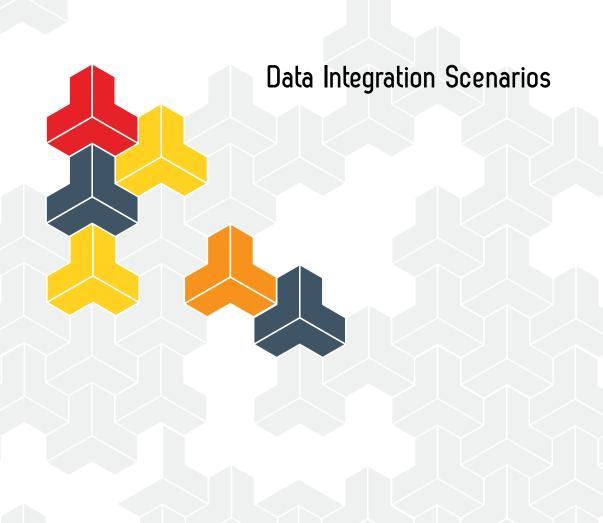
Quality chaos?
It's only natural

At its core, quality control is all about quality consistency. Machine by machine, line by line, plant by plant, or process by process, immediate insights into the consistency (or lack of it) of your output helps managers meet customer expectations, achieve performance objectives, and fulfill compliance and regulatory requirements.

Unfortunately, in the real world of mergers, multiple plants, and mixed computing platforms, quality consistency is often replaced by quality chaos. Growing businesses become the victims of their own success, accumulating different tools and techniques that produce confusion when everyone — from the shop floor to the executive suite—wants clarity and control.

In this eBook, you'll gain insights into how to resolve the quality control puzzle and answering the central question: How can businesses like your own create one consistent quality picture when so many of your individual quality pieces don't fit together?

After reviewing the most common causes of data dis-integration, Quality and the Missing Puzzle Piece will propose a practical solution for data integration that provides huge quality returns without imposing expensive "rip-and-replace" costs.

How did we get here?
First, take a deep breath.

No one person or group of people is to blame for the proliferation of quality data pieces that do not fit together.

Over time, successful enterprises have aggregated different tools, different software, different lines, and different plants, each speaking its own language—one the others don't understand.

Although the dis-integration of quality control is nobody's fault, it is everybody's problem. With the rapid increase of globalization and the outsourcing of almost all component parts, a growing business must take a hard look at its quality landscape to achieve centralized visibility and control, and take corrective action now.

So what's standing in the way?

A complex mix of processes, people, and technology that have emerged independently and now defy consistent data collection and quality control.

How did we get here?
Processes

Cause: Legacy systems

Consequence: Designed to provide immediate feedback on local quality conditions, the previous generation of quality controls was never designed to "speak" to (or with) other quality controls. Today, many such systems are unable to integrate with others, and the people who control these systems may be unwilling to share vital information they feel obligated to control.

Cause: Mergers and acquisitions

Consequence: Most current manufacturers represent a heterogeneous blend of multiple locations, different databases, various quality systems, and diverse IT structures. Such variation impedes visibility by making it difficult to aggregate data and compare results.

Cause: Outsourcing

Consequence: Many contemporary manufacturers are assemblers of components acquired through extensive supply chains; as quality control moves upstream, downstream control becomes more difficult.
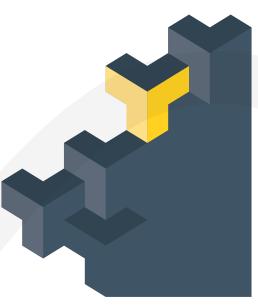
How did we get here?
People

Cause: Corporate "feudalism"

Consequence: Different plants and locations employ different teams, each of which has evolved its own culture. Unfortunately, it's often human nature to favor parochial habits over the greater good; too frequently, "change" is what people do only after exhausting all other options.

Cause: Conflicting territory

Consequence: Who owns quality data — IT or Quality? When these professionals insist on holding on to their respective silos, the executives who manage them (and the line operators who rely on their judgment) fail to get one integrated system that enables visualizing and controlling quality.

How did we get here?
Technology

Cause: Coexistence of the old and new

Consequence: Older equipment is commonly not replaced but complemented by new equipment. Over time, side-by-side production lines contain a mix of old and new machines manufacturing the same products. Different processes and operating nuances require varying controls to ensure the same output, resulting in different metrics, which can make comparative analyses difficult or impossible.

Cause: Conflicting data formats, complex data chain

Consequence: It's the Tower of Babel for the digital age — a proliferation of data formats, spread across a broad data chain. Without a common language, it seems impossible to create an integrated quality picture under centralized control.

Data Source Types

It's easy to sympathize with IT and Quality professionals when one acknowledges the extraordinary range of data sources, including:

Data collection devices:

› Scales

› Hand-held devices

› Vision systems

› Coordinate Measuring Machines (CMMs)

› Programmable Logic Controller (PLC) devices/ sensors

Database standards:

› Proprietary

› Third-party designed

› External/vendor

Software formats:

› Flat files

› Streaming data

› System transfer

› OPC servers

Centralized Data
Fix everything-without fixing ONE thing

Here's the dilemma:

You can't achieve meaningful quality control without consistent visibility into all of your quality data sources. But it's not practical to impose ONE standard—by ripping and replacing all your equipment or via expensive hardware or software upgrades — for all your different lines, facilities, and supply chain vendors.

Fortunately, you don't have to.

Instead, you can lead all your components toward one point of control: a centralized, unified data repository. This centralized data repository brings all your data to one place, creates one point of visibility, and produces uniform metrics and reporting protocols for effective decision-making and validation.

The centralized data repository serves as an intelligent clearinghouse that can accept data from multiple sources while reporting activity through a consistent set of metrics. By combining input flexibility with output standardization, the centralized data repository delivers insights into manufacturing operations and quality-improvement opportunities across the entire enterprise. Effectively, the centralized data repository enables global quality oversight and helps management identify the greatest opportunities for quality improvement and defect reduction on a global scale.

The virtues and values of a centralized data efficiently resolve the urgent challenges of the quality-control puzzle.

Centralized Data
Processes

Virtue: Standardization while maintaining flexibility

Value: The centralized data repository acts as an intermediary translator that accepts device inputs in their existing form without requiring modification to their native formats, yet still produces reports and dashboards that are standardized in their representation.

Virtue: Integrate data globally

Value: The centralized data repository gathers data, regardless of location, without requiring upgrades to existing data collection systems or the installation of new devices for communicating with a new quality system; its flexibility is inherently scalable.

Virtue: Speed

Value: When quality systems remain fragmented, gaining enterprise-wide insights means manually reconciling spreadsheets and other reports. The centralized data repository automates data collection from every source, providing instant insights into both current and historical trends.

Virtue: Eliminate IT and Quality conflict

Value: The centralized data repository does not require either IT or Quality to change the ways in which they prefer to work. Both their systems can remain in place.

"The implementation of InfinityQS® ProFicient™ is creating visibility across our global manufacturing base and elevating the level of trust in our data."

Zack Tran, Project Manager, General Cable

Centralized Data
People

Virtue: Overcome isolated quality "fiefdoms"

Value: In isolation, each Quality team can provide meaningful management only to local processes. However, once integrated into the centralized data repository, the data each team produces can contribute to an executive understanding of overall enterprise performance. Through the centralized data repository, executives can compare equipment, lines, and plants; identify weaknesses to overcome and best practices to amplify; and target the most optimal opportunities for improvement.

Virtue: Timely executive insight and action

Value: Executives gain visibility without having to call meetings among far-flung Quality staffers. Armed with up-to-date information, they can take direct action faster and with greater confidence, identifying with pinpoint precision areas in the enterprise where quality improvement activities would most benefit the organization.

Gain visibility without having to call meetings among far-flung quality staffers.

General Cable Gains Global Consistency

Big picture:

As a Fortune 500 manufacturer with more than 14,500 employees in 26 countries, General Cable needed to control plant-to-plant process variations.

Puzzle pieces:

57 manufacturing facilities, over 100 monitoring applications, and numerous collection devices including micrometers, microscopes, scales, cameras, and more.

Successful solution:

General Cable built its centralized data repository with InfinityQS ProFicient, standardizing processes across its supply chain while increasing visibility and production consistency.

Results:

The company gained control of its raw material usage and reduced operational inefficiencies associated with rework, giveaway, production delays, and customer complaints.

Centralized Data
Technology

Virtue: **Centralized database**

Value: The centralized data repository offers one point of visibility and control without disrupting current systems.

Virtue: **Reconciliation of all data, regardless of source**

Value: Buying, installing and maintaining unique drivers for each data collection source would be time-consuming, prohibitively expensive, and unnecessarily complicated. The centralized data repository provides connectivity tools unrestrained by data formats. Instead, these tools touch common communication protocols that almost all measurement devices leverage—such as serial streams, TCP/IP protocols, and ASCII files — making it a flexible and efficient way to gather data.

Virtue: **Mobile and BYOD enabled**

Value: In a world where informed decisions must be made quickly by professionals who could be located anywhere, mobile enablement is a necessity. The centralized data repository can both collect data and share dashboards from and on any mobile device.

Virtue: **Available on premises, through license, or via the cloud.**

Value: The centralized data repository can be deployed on your own business terms, through whichever means of access best fits your quality needs and network standards.

> "We can now assimilate data from different systems and device locations into one centralized repository for easy analysis and decision making."
>
> **Jack Kraemer**
> **President and COO**
> **GSI Technologies**

GSI Technologies Drive Improvements

Big picture:

GSI Technologies, a manufacturer of functional printing and industrial graphic products, outgrew its in-house Quality systems, threatening the high levels of quality and service its customers relied upon.

Puzzle pieces:

ERP, document control, inspection equipment, and data collection devices such as scales and multi-meters.

Successful solution:

Through InfinityQS ProFicient, GSI built a centralized data repository capable of configuring data for all the unique parts the company used and representing that data in the control charts their end users required.

Results:

Plant floor operators now have real-time visibility for proactively tackling spec challenges, while managers have gained improved data and analytics for product development and more efficient ways to demonstrate regulatory compliance.

Get effective integration without expensive standardization

The centralized data repository is not a speculative solution, but a practical reality for 2,500+ InfinityQS clients worldwide. With InfinityQS, our clients can create and manage a centralized data repository that integrates any number of data sources and quality control pieces into one centralized platform for management intelligence, insight, and innovation.

See how InfinityQS can deliver your own centralized data repository, effectively and efficiently, with a one-on-one demonstration. Our certified Six Sigma Green Belts will be happy to guide you through a detailed exploration, customized to your requirements, at your convenience.

CONTACT US:

INFINITYQS.COM

1-800-772-7978

GETINTOUCH@INFINITYQS.COM

About InfinityQS International, Inc.

InfinityQS International, Inc. is the global authority on data-driven manufacturing quality. The company's Manufacturing and Quality Intelligence solutions deliver 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 statistical process control (SPC) 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, and Beijing, InfinityQS was founded in 1989 and now services more than 2,500 of the world's leading manufacturers, including 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

InfinityQS International, Inc. | Washington DC | Seattle | London | Beijing | **www.infinityqs.com**