



Making Manufacturing Data Work For You

Data Management and Manufacturing Analytics
with QualityWorX





Addressing the Need of the Hour

Are you looking to find the root cause of a problem that's halted your production line? Optimize test limits to avoid false fails? Prove compliance with a customer's standards requirements? See if you can reduce cycle time without impacting FTY? Whatever your need of the hour, you have to address it quickly and accurately.

That's the promise of Industry 4.0 – a connected factory in which data collected from tests and processes around the plant (or even across plants worldwide) is accessible, organized, stored, archived, and able to be visualized and analyzed. Problems are solved when they occur, not at end of line. Root cause identification and process optimization happen in hours – not days or weeks.

Can your data management solution do that? **Ours can.**

Data Management and Manufacturing Analytics from Sciometric

Sciometric's Data Management and Manufacturing Analytics solution includes all the key elements necessary for data-driven decision-making. And when your decisions are based on data instead of guesswork or trial and error, you know you can trust them.

When you have a connected factory, where data is at hand in real-time for the front-line people who need it to solve a critical problem, then you're operating in a true Industry 4.0 environment. We've been helping manufacturers make better use of their data for over a decade. Our approach to data analysis based on digital process signatures is market leading. You could say we were pioneering Industry 4.0 before it even had a name.

Bridging the Gap Between Data and Insight

Industry 4.0 is not just about collecting data. It's about collecting the right data and being able to do more with it – something that makes a difference to quality, productivity and customer satisfaction.

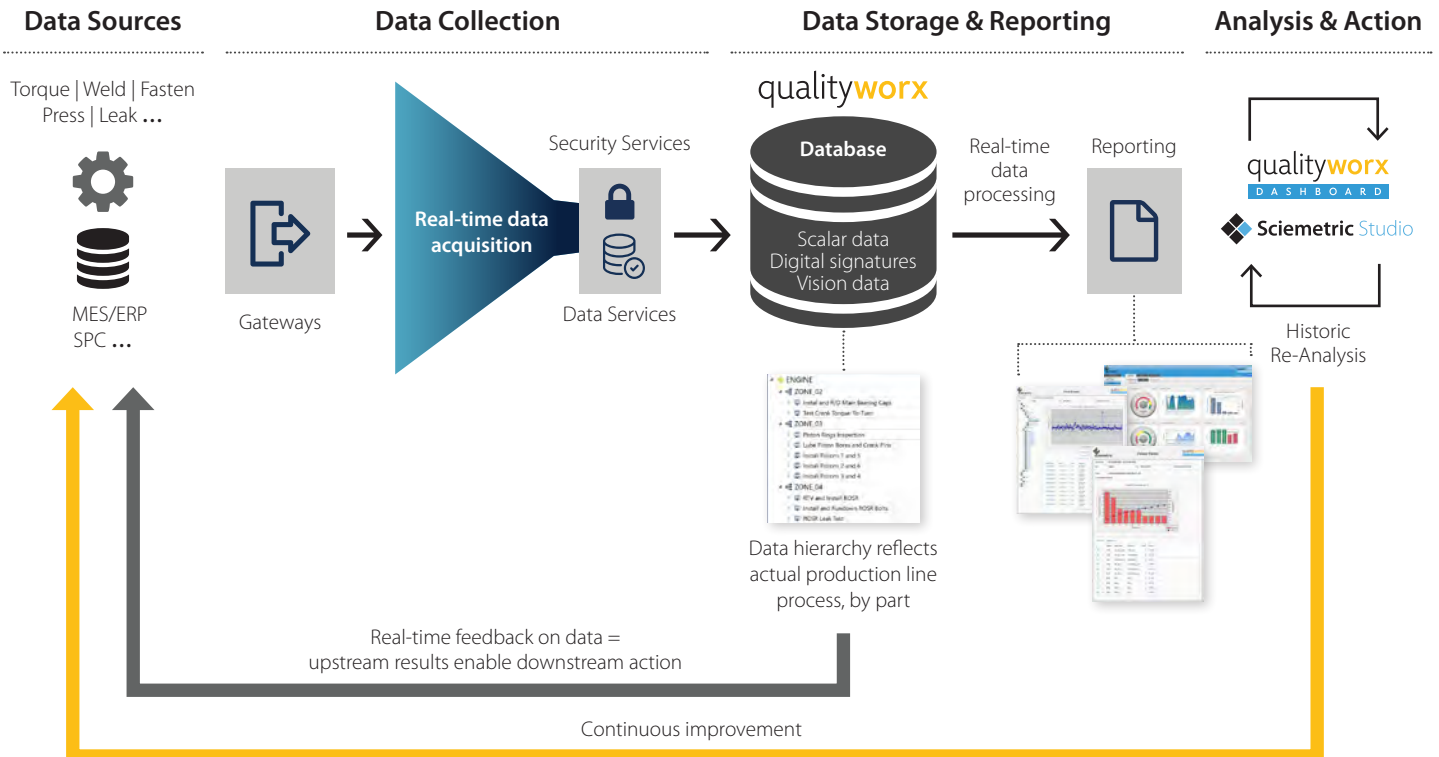
Manufacturing environments are full of proprietary and 3rd party software and systems – MES, ERP, SPC, PLM, OEE, and the list goes on. Each has its place, but there is a gap between the Big Data these systems produce and fast, trustworthy decisions based on analysis and insight. Our Data Management and Manufacturing Analytics solution fills that gap.




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Introducing QualityWorX

The foundation of our solution is QualityWorX, a software suite that addresses four critical elements for smart manufacturing.



- 1 Collect and Store**
Gather all your production data and centralize it in one repository – not silos around the plant.
- 2 Analyze and Report**
Compare and correlate data to easily spot outliers and anomalies. Use a flexible set of reporting visualizations to see the data in the way that makes sense for your needs and your role.
- 3 Act**
Make fast, data-driven decisions you can trust.
- 4 Improve**
Use historical data, or data from like stations or successful production lines to optimize other stations or duplicate production lines with faster runoff and time to market.



Collecting and Storing the Right Data

Production lines today are Big Data generators. Dozens of databases are filled with terabytes of information collected every second of every day. So how do you know when you have the right data and that you'll be able to access it when the need of the hour arises? Here's how to check:

Do you really have all the data?

Are you able to collect and centrally store all data types, including scalar points, digital process signatures, and even images from machine vision systems? Are you gathering data from the multitude of 3rd party and proprietary test and process machines across the plant? Sciometric's Data Management and Manufacturing Analytics software collects all the data generated on a production line, from any number of processes and tests. Our modular gateways can draw in data from almost any system you might have.

Have you achieved Batch of 1?

Does your solution eliminate data silos and provide a standardized view of production history? Other analytics tools can pull data from different systems, but QualityWorX aggregates it into a complete birth history for every part, organized by serial number, so every record represents a Batch of 1. You have full traceability to pinpoint root cause and prove compliance. Consolidating into a single repository also reduces network infrastructure and administrative overhead.

Are you able to keep pace with production?

Today's manufacturing lines are producing more and more data. If your data collection and analysis software can't keep up, then the actions you take will lag behind as well. QualityWorX has been optimized and organized to handle the increasing rates of production today. This scalable solution covers everything from a few stations to an entire production line, and lets you standardize how you look at data enterprise-wide.

From Big Data to Better Data

Manufacturing Analytics is all about how you use data from connected machines and processes to drive improvements across the factory. No longer is information the domain of data scientists in an ivory tower.

Fundamentally, your ability to turn Big Data into better, more useful data requires three things:



Make it easy to view the data

Reams of spreadsheets are a challenging way to visualize data, especially when they pertain only to a given process or production line. QualityWorX uses a simple tree configuration so parts and components are visible to the serial number, and you can easily see all the processes a part underwent on its way through the plant.



Analyze data in “real real-time”

Just as data is collected and stored at production volume rates, you need to be able to perform analysis as processes and tests are happening. That lets you pinpoint issues exactly when they occur so you can avoid issues further down the line (or even after product shipment) when they're more difficult and much more costly to solve. Sciometric Studio, the QualityWorX analysis tool, provides this timely, in-depth analysis.



Overlay and compare data

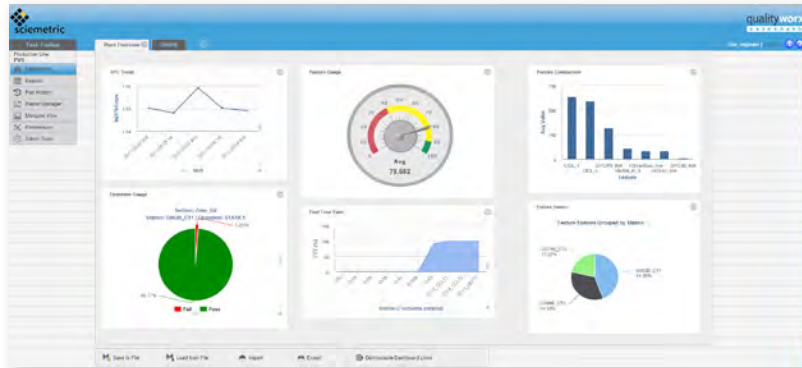
Finding a single defective part is one thing. Using previously collected signatures to quickly identify other parts affected by the same issue is even more valuable. Our solution not only collects a complete digital process signature for every process and test, it also allows you to overlay those signatures in a simple visualization. Outliers are obvious, which means you can find problems and improve your test strategy quickly and easily.

Industry 4.0 is about data democratization – putting useful data in the hands of each person who can use it to make a real difference in quality and productivity.

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DASHBOARD

QualityWorX Dashboard is a reporting platform that provides instant visibility into the manufacturing metrics that matter to you. This web-based application allows you to create a personal set of concise, at-a-glance summaries using selected, standard charting formats and a flexible set of key performance indicators for reporting.



QualityWorX Dashboard

This unified reporting environment is ideal for production managers who want an overall view, but the ability to drill down to individual serial numbers as well.



Drill down through three levels of detail

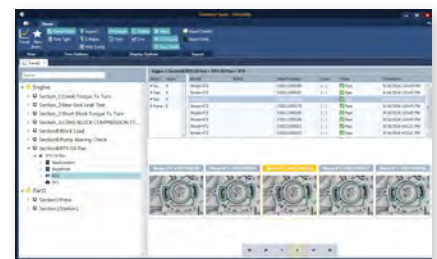
What kind of reports can I create?

- Part History
- First Time Yield (FTY)
- Summary Report
- Trend Browser
- Failure Pareto
- Failure Report
- Defect Pareto
- Repair Traffic
- Analysis Grid for custom analysis

Sciometric Studio

Sciometric Studio is a suite of next generation analytics desktop software for smart manufacturing. It provides manufacturing engineers with the in-depth analysis of production data (including scalar data points, digital process signatures, and machine vision images and data) they need to get answers quickly. With an intuitive, contemporary user interface, this software makes it easy to visualize, review, report on, compare and analyze manufacturing data to improve quality and yield.

Our manufacturing analytics solution includes a powerful what-if capability that removes guesswork from decision-making. Simultaneously analyze thousands of digital process signatures and rapidly simulate a broad range of test scenarios using historical data, or identify defects using line-wide trends and correlations. This advanced analysis capability eliminates trial and error, helping you optimize your manufacturing processes in hours instead of days or weeks, and make decisions you can trust.



Machine vision images and data



Waveform overlay trend

Learn more about bridging
the gap between data and insight at
sciometric.com/makedatawork

About Sciometric

Since 1981, Sciometric's process monitoring and quality management systems and software have enabled some of the world's leading automotive, medical and industrial manufacturers to gain visibility into and control over their manufacturing processes. On the production floor, Process Signature Verification (PSV) technology provides the most accurate determination of process health and part quality while collecting all data. Manufacturing managers use Sciometric's analytic tools to transform the data into actionable information to reduce costs, manage quality, and maximize yield while providing proof of process compliance and complete line-wide traceability. Visit sciometric.com for more information.

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