



Impact

“SAS has directly contributed an ROI of \$14 million on Six Sigma projects and an additional \$1.5 million on other projects. That’s an impressive result in less than two years, and we have anticipated ways to gain even greater returns in the future.”

— Ill-Chul Shin, Manager and “Master Black Belt” at POSCO’s Six Sigma Academy

Challenges

- **Process complexity.** As products become more sophisticated, the manufacturing processes to create them grow in complexity.
- **Disparate systems.** Different departments and divisions may use different systems or even different versions of the same system, making it nearly impossible to get one version of the truth.
- **Cost containment pressures.** There is constant pressure to reduce scrap and rework rates and to optimize equipment utilization in an effort to reduce costs and improve production flow.
- **Fragmented data.** Pulling together usable information from multiple systems (ERP, MES, etc.) is difficult and time consuming, and the data is often disjointed and redundant.

How can we identify quality issues sooner to reduce scrap and rework?

YOUR GOAL: Improve quality while containing costs

The price companies pay for poor product quality is steep. From costly rework and product recalls to a decline in customer satisfaction, eroding brand image and loss of shareholder confidence, the bottom line is that profitability suffers — often to the point where it threatens a company’s very existence. As such, it’s no surprise that every company’s goal is to produce high-quality products at the lowest possible cost.

However, regardless of the product being produced — electronics, automobiles, consumer packaged goods, pharmaceuticals, etc. — achieving that goal isn’t easy. With each new product development or improvement, complicated manufacturing processes get even more complex. Rather than viewing the business as a whole, siloed business units tend to view each step in the process — from product development, to procurement, to manufacturing, and so on — as discrete functions. As a result, supporting systems are fragmented, with data scattered among systems and formats that don’t talk to each other. Further complicating matters are the legacy systems — such as ERP, MES and SPC solutions — that most manufacturers use. Their limited scope and inability to handle large data volumes and complex calculations render them incapable of performing the kind of analyses necessary to go beyond correcting problems to preventing them from happening in the first place.

OUR APPROACH

Real quality improvement *can* be achieved while simultaneously containing costs — with the right combination of data integration, automation and analytics to create the most unbiased insight into processes on a large scale. SAS approaches the problem by delivering software and services to help you:

- **Gain visibility into quality processes** by accessing large volumes of data regardless of format or source — from legacy to modern MES, ERP and other systems — then transforming, standardizing and cleansing the data to prepare it for analysis.
- **Monitor the health of your processes** with a large-scale, automatic parameter checking against pre-defined or custom business rules in batch or on demand.
- **Reduce process variability** with state-of-the-art root cause analytics to weed out quality excursions, and unparalleled design of experiments.
- **Proactively address quality and performance issues** with early warning analytics that alert you to potential failures and latent defects *before* they become costly problems — and before they reach the customer.
- **Establish a closed loop system for sustained quality** by automating key processes and refining and integrating business rules for repeated use.
- **Align performance and quality strategies** by sharing appropriate information with whoever needs it so you can close the gap between targets and performance.

By automating certain labor-intensive tasks, SAS helps you adopt LEAN processes that can significantly reduce the time it takes to produce reliable analyses, while providing a basis for future improvement analysis.



**THE
POWER
TO KNOW®**

THE SAS® DIFFERENCE: Highest performance, lowest total cost of ownership

From data integration and storage, to simple and high-end analytics, to flexible and robust reporting, only SAS offers unmatched end-to-end capabilities for pulling data together, analyzing it and then making it available to those who need it throughout the entire organization. The SAS solution delivers:

- **Reduced costs.** State-of-the-art analytics and predictive modeling capabilities drive tighter controls and improved processes, resulting in decreasing scrap expenses and rework rates.
- **Early-warning analytics.** The system monitors thousands of parameters continuously and sends automated alerts to warn of potential quality issues before they become costly problems.
- **Flexibility.** The solution's data model can handle practically any type of data you may have, and is also customizable to incorporate any additional data types your organization may require.

Unlike smaller niche vendors that can't cope with a growing data volume and are unable to deliver the expected response times, the SAS solution is scalable to meet your growing needs, both today and tomorrow.

CASE STUDY: POSCO

■ Situation

In its quest to become the leading steel producer, POSCO needed to update its 30-year-old business practices in order to reduce scrap and improve overall throughput, output and quality. To accomplish these goals, the company sought to implement a corporatwide Six Sigma strategy.

■ Solution

SAS helped the company implement a comprehensive solution that:

- Brings together all relevant data in a data warehouse.
- Applies advanced analytics to uncover hidden interdependencies among processes.

■ Results

- As a direct result of the SAS solution, the company realized an ROI of \$14 million in less than two years.
- Even greater returns are expected in the future.

■ The vision

Superior data integration

What if you could access all relevant data from every system and level throughout your supply chain so you would have the most complete picture of performance at any point in time?

World-class quality control

What if your quality control engine not only could run hundreds of thousands of control charts simultaneously, using variables and constraints that you define and change as needed, but also could automatically alert stakeholders when a process goes out of control?

State-of-the-art root cause analytics

What if you could easily analyze quality issues to determine their root causes and identify areas for improvement in an interactive, intuitive way?

Early-warning analytics

What if you could find out about potential quality and performance issues and defects far enough in advance to address them proactively before they become costly problems?

Closed-loop quality system

What if you could continually refine business rules and implement process improvements throughout the supply chain so the entire organization could benefit from a continuous learning cycle?

Self-service reporting

What if you could monitor performance levels at every location in your supply chain simultaneously, and then drill down for detailed information on any individual area?

SAS FACTS

- *Manufacturing Business Technology* magazine has named SAS to its annual Global 100 rankings in the Business Performance category.
- The SAS® Enterprise Intelligence Platform was honored by *START-IT* magazine as one of 2008's "Top 50 Technologies" for manufacturing.

Learn more about SAS® software and services for manufacturing at: www.sas.com/industry/mfg



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