



## Business 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,  
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.
- **Missing collaboration.** Most often, reporting and analytics don’t seamlessly integrate with workflows and case management to document findings and solutions for knowledge sharing.



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

### YOUR GOAL: Improve quality while containing or even reducing costs

The price that 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 that don’t talk to each other and formats that don’t match. 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 or even reducing 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 large-scale, automatic parameter checking against predefined 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 with 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 real closed-loop system for sustained quality** by automating key processes and refining and integrating business rules for repeated use through workflows and case management.
- **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 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, to workflows and case management 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 and to foster collaboration across the enterprise. 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 and rework rates and minimized cost of quality.
- **Early-warning analytics.** The system monitors thousands of parameters continuously, sends automated alerts to warn of potential quality issues before they become costly problems and initiates workflows to start problem resolution.
- **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. Workflows and case management can easily be customized to adopt changes in processes and the organization alike.

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, and 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.



SAS Institute Inc. World Headquarters +1 919 677 8000

To contact your local SAS office, please visit: [www.sas.com/offices](http://www.sas.com/offices)

SAS and all other SAS Institute Inc. product or service names are registered trademarks or trademarks of SAS Institute Inc. in the USA and other countries. ® indicates USA registration. Other brand and product names are trademarks of their respective companies. Copyright © 2010, SAS Institute Inc. All rights reserved. 103362\_S61512.1110

#### ■ What if you could ...

##### Integrate all of your data

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?

##### Implement 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 and automatically start problem resolution workflows?

##### Use state-of-the-art root cause analysis

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

##### Provide 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 and sustainably before they become costly problems?

#### ■ You can. SAS gives you THE POWER TO KNOW®.

### SAS FACTS

- SAS was named a Progressive Manufacturing 100 Technology Partner in connection with The Dow Chemical Company's placement on the 2009 Progressive Manufacturing 100 list from *Managing Automation Media*.
- *Manufacturing Business Technology* named SAS to its annual Global 100 rankings in the Business Performance category.

Learn more about SAS software and services for manufacturing at: [www.sas.com/industry/fsi](http://www.sas.com/industry/fsi)