



SAS® for the High-Tech Industry

Building success with The Power to Know®



"With SAS® for the high-tech industry, filter through mountains of disparate data and transform it into usable knowledge."



Michael Renella, Ph.D.
Director of Quality Engineering
Maxtor Corporation

Maxtor uses SAS® software to drive quality, get consistent answers and make confident decisions

Maxtor Corp. of Milpitas, Calif., constantly strives to send the best quality products out the door with the latest storage technologies, all the while meeting customer needs with on-time product delivery. What Maxtor wanted was to spend less time and money getting the job done. "There are many challenges we face in our industry, and price erosion is certainly one of them," says Michael Renella, Ph.D., director of quality engineering at Maxtor. "To combat these challenges, we set out to look at measures to increase efficiency and effectiveness, as well as other ways to make improvements to our internal processes and operations. Ultimately, we strive to continue to raise the bar in terms of quality products and happy customers."

SAS has become a key facet of this initiative. With SAS, Dr. Renella found new, faster ways to examine and address manufacturing, quality and other issues early on in the product development process. "SAS has been important to us because it helps us to quickly identify areas of concern that might arise within Maxtor. The information from SAS has also enabled us to deepen our involvement with individual suppliers, forging long-term relationships."

SAS provided Maxtor with an enterprise information delivery solution that could validate organizational and supplier information seamlessly, pinpoint potential issues more quickly, and update Maxtor employees faster. The real-time SAS solution delivers answers that translate to faster time to market, improved yields and better products for Maxtor customers. Hundreds of Maxtor employees now use the same tools with SAS across all phases of the business, spanning product conception, manufacturing and final customer delivery. SAS helps Maxtor turn raw data into information that drives business decisions and keeps Maxtor one step ahead of the competition.

"SAS gave us a solution that could help us meet our objectives and improve efficiencies across the organization," Dr. Renella says. The company rallied its main suppliers to collect the necessary data and used SAS to drill down and perform analysis. A clear methodology was established that makes it easy to assess the quality of each product and determine the exact causes of any quality audit failures before manufacturing is slowed or products go out the door.

Industry Expertise

SAS provides high-tech companies the power to know their customers, suppliers, organization and overall enterprise. Our solutions enable organizations to access vital information from their transactional systems, enrich it with external content and deliver it across the entire supply chain. From mainframe terminals, Windows clients, Web browsers and wireless devices, SAS offers high-tech companies the ability to filter through mountains of disparate data and transform that data into useful knowledge.

Here are just a few examples of how SAS is delivering value to high-tech companies:

- ABB relies on SAS for a comprehensive, worldwide view of purchasing.
- Altis Semiconductor improves performance, quality of service and profitability with SAS technologies.
- Bayer CropScience US uses SAS Supplier Relationship Management to enhance profitable supplier relationships.
- Cessna Aircraft uses SAS to increase its competitive advantage through activity-based management.
- Hewlett-Packard boosts its data-analysis capability and saves time with data quality solutions from SAS.
- Klune Industries relies on SAS to guarantee on-time delivery of parts to commercial and military customers.

- Phillips Petroleum Norway uses SAS to drive and communicate corporate goals throughout the organization.
- ST Microelectronics, the fourth-largest semiconductor company in the world, uses SAS to manage and optimize the complex data generated during its integrated circuit manufacturing process.
- Sun Microsystems solves a variety of Enterprise wide business management, analytical and reporting needs with SAS.
- WL Gore and Associates, renowned for its GORE-TEX fabrics, increases one product's already exceptional reliability by 70 percent with SAS.

The information technology (IT) field is filled with software that helps companies automate, track and execute their business transactions. SAS helps companies leverage their existing investments in infrastructure, operational databases and applications by providing a layer of business intelligence. SAS solutions for high-tech manufacturing deliver the most important commodity in today's business world—*The Power to Know*[®].

Whether you're tracking the performance of your entire enterprise, or trying to make sense of your supplier, customer, warranty or quality data, SAS offers a package of solutions designed for your business needs.

These solutions, based on industry best practices and more than 25 years of award-winning technology, are designed to integrate into your existing infrastructure. Moreover, you can tailor the applications specifically for your business needs. This strategy translates into shorter implementation times and reduced development costs without locking you into a "one-size-fits-all" solution.

The SAS Manufacturing Practice consists of dedicated managers, strategists and consultants who have worked in the manufacturing industry. This team is active in manufacturing forums and associations, working to ensure that SAS solutions not only meet but also anticipate the needs of the high-tech industry. SAS solves a range of business problems, whether they concern data and processes driven by e-business or traditional plant-floor challenges of unlocking knowledge from disparate ERP and supply chain management systems.

But it's not just about technology. At SAS, we sincerely believe in partnering with our customers to provide success at all levels. We offer training services, proven implementation methodologies and world-class technology solutions—all coordinated in a way that delivers rapid ROI. From the boardroom to the data center, SAS truly provides businesses with the power to know.



SAS® Warranty Analysis

Accurate warranty analysis is essential in the manufacturing industry. And whether your business collects its own warranty data or receives it from multiple third-party sources, SAS Warranty Analysis integrates that warranty data with key customer, production and geographic information in a manner that allows organizations to achieve a level of knowledge that translates into significant value. This solution enables companies to:

- Identify questionable warranty claims to detect fraudulent activity.
- Automatically detect emerging issues before they make it to the top of the issue list.
- Determine root causes quickly to focus resources on the right issue in the right place at the right time.
- Collaborate and implement best practices to increase the efficiency and effectiveness of problem-solving efforts.
- Forecast warranty costs to protect against financial risk.

SAS® Process Intelligence

Driving costs out of the manufacturing process to improve bottom-line profitability is crucial for survival in today's global competitive environment.

Delighting customers with world-class product quality and service leads to customer retention and growth.

History proves that organizations that

focus on integrating enterprise quality management principles significantly outperform competitors.

SAS Process Intelligence for Manufacturing provides that edge by combining the latest in data visualization technology with powerful SAS statistical capabilities, giving customers the ability to identify and understand process variability and product reliability.

Whether these processes reside on the manufacturing floor, in the research laboratory or in the customer service center, SAS provides tools for improving the quality of products, processes and services. SAS Process Intelligence for Manufacturing can help you:

- Respond to process deviations with reliable analytics that solve problems **the first time**.
- Develop quality practices that save time, cut costs and allow you to respond quickly to your customers.
- Distribute analysis tools so that everyone in your organization can contribute to overall process improvement.

“With SAS, we've been able to discover previously undetected data quality, aggregation and calculation issues in our existing sources and reports. Resolving these issues has improved information quality dramatically.”

- Consolidate multi-plant strategies to maximize return on your investment.
- Incorporate the lean and agile production techniques that are critical for competition on a world-class scale.

Customer Intelligence Solutions

SAS Customer Relationship Management Solutions are designed to give manufacturers the knowledge they need to develop and implement smarter customer strategies and maximize customer profitability. Built on our award-winning Intelligence Architecture, SAS' superior analytical technologies and proven methodologies and services allow you to better understand your customers.

Whether those customers are individuals or businesses, SAS analytic CRM solutions deliver fast, measurable value by enabling organizations to:

- Create reliable, high-value customer intelligence.
- Gain a panoramic customer view.

Carol Peterman
Usage Program Manager
Hewlett-Packard Image and Printing Group



- Maximize the return on your marketing campaigns.
- Improve customer acquisition and retention rates.

Supplier Relationship Management

SAS Supplier Relationship Management can help your organization implement sound supplier strategies, increasing competitive advantage through enhanced supply chain management. This comprehensive solution enables companies to collect, analyze and leverage all aspects of their supplier data and purchasing histories. Through the power of SAS, you'll gain vital insight into your supply base and purchasing history—critical information for optimizing your strategic sourcing and providing significant cost savings.

With SAS Supplier Relationship Management, your business can:

- Create an accurate overview of your organization's total spend.
- Select the ideal suppliers.
- Match business objectives with individual supplier performance.
- Identify cost-consolidation areas.

Performance Management

SAS Strategic Performance Management captures a company's corporate strategy and helps integrate, distribute and analyze information from across the enterprise that supports strategy implementation. Clear, concise

indicators provide information about plant production, sales, engineering design and financial performance through a single, multi-level scorecard. Using red-yellow-green indicators, managers gain a holistic view of performance and can drill down to examine trend information on individual metrics or performance across objectives to determine associated causes and effects.

And more . . .

SAS Strategic Performance Management is the driving force behind the only integrated suite of intelligence solutions from a single vendor that facilitates both strategic and operational decision-making. It lets businesses:

- Track, measure and execute manufacturing strategies.
- Share information across the organization for quick and efficient action.
- Create a single version of the truth that can be shared with any level of the enterprise, wherever it is needed.

SAS also offers a variety of other solutions that can help any organization gain—and maintain—a real competitive advantage:

- Six Sigma – Improve your Six Sigma initiative by gaining the ability to identify and analyze key issues, use experimental design and analysis techniques to determine root

causes of defects and track strategy and initiatives throughout the entire enterprise.

- Risk Management – Perform companywide risk management for measuring and managing market and credit risk in a manner that is the most appropriate for your organization's unique needs.
- IT Management – Manage IT needs at every level of the enterprise, uncovering detailed data about daily systems operation, analyzing performance data, implementing internal chargeback methodologies and tracking and analyzing Web traffic.
- Human Capital Management – Combine strategic information with workforce analytics to plan effective human capital strategies. Measure and compare your company's best practices in a Web-based, HR-specific decision-support environment.
- Financial Management Solutions – Plan, analyze and report on financial information, effectively implement activity-based management, and utilize accurate and timely information to drive strategic decisions and manage financial risk—all through SAS' total approach to financial management.
- Service Analysis – Identify opportunities to significantly improve service-level agreements by increasing first-call completions. Provide insight for predictive maintenance



to prevent unplanned down-times—and, ultimately, increase customer satisfaction and reduce costs of service.

- Activity-Based Management – Focus on activities in the costing process and transform that data into strategic operational and tactical information that you can use for better decision-making.
- Value Chain Analyzer – Generate the improved financial intelligence needed to make fact-based decisions for reducing costs and improving profitability, both within the organization and across the value chain, integrating supply and demand activities.
- Operations Research – Address a wide variety of business management and planning problems with our versatile, integrated management science solutions.
- SAS® Enterprise Miner™ – Simplify and streamline the process of data mining with this solution. Gain lasting competitive advantage through better business insights.
- SAS® Text Miner – Use this sophisticated set of text mining tools to uncover the underlying themes or concepts contained in large document collections.

Industry Memberships

SAS maintains active memberships in the following industry affiliations and associations:

- American Society for Quality (ASQ) www.asq.org
- American Statistical Association (ASA) www.amstat.org
- Automotive Industry Action Group (AIAG) www.aiag.org
- American Production and Inventory Control Society (APICS) www.apics.org
- Best Manufacturing Practices Center of Excellence (BMP) www.bmpcoe.org
- Institute of Electrical and Electronics Engineers (IEEE) www.ieee.org
- Institute of Industrial Engineers (IINET) www.iinet.org
- Institute for Supply Management (ISM) www.napm.org
- International Organization for Standardization (ISO) www.iso.org
- International Sematech (ISMT) www.sematech.org
- International Society for Measurement and Control (ISA) www.isa.org
- International Statistical Institute (ISI) www.cbs.nl/isi
- National Quality Institute (NQI) www.nqi.ca
- Original Equipment Suppliers Association (OESA) www.oesa.org
- Semiconductor Equipment Manufacturers International (SEMI) www.semi.org
- Society for Industrial and Applied Mathematics (SIAM) www.siam.org
- Society of Automotive Analysts (SAA) www.autoanalyst.org
- Society of Automotive Engineers (SAE) www.sae.org
- Society of Manufacturing Engineers (SME) www.sme.org





Pascal Chesneau
Data analysis manager
Altis Semiconductor

Altis Semiconductor improves product quality with SAS

Altis Semiconductor, formed in 1999 in Corbeil-Essonnes, France, is now one of the most important copper production high-tech companies in the world (0.18 μm and higher). The company has created a powerful and reliable quality control program using SAS solutions to improve the electrical performance of its products.

In the initial phase of implementation the Altis Engineering Department determined a need for automatic reporting systems. As explained by Pascal Chesneau, data analysis manager of the project: "We selected SAS solutions from the very beginning because of their capability in managing the automatic and interactive creation of menus based on automatic collection systems of all production data."

For the second phase, the objective was to create a system that allowed users access to all technical and logistical databases while making available dedicated professional tools for quality control and statistical analysis.

The project with SAS has allowed Altis Semiconductor to create a technical platform that is recognized by its users. For example, a SAS data mining solution allowed the validation of a model resulting in a 1.7 percent increase in performance, which represents considerable sums on high volumes.

Chesneau concludes: "SAS responded to our industrial problems by providing scalable, solid solutions that were accepted by all. We were able to join users and developers through a series of techniques and analysis tools. And all this contributed to the goal of reaching our objectives for quality of service, performance, and profitability."

About SAS

In today's competitive marketplace, organizations must focus scarce resources on the strategies most likely to yield success. SAS can help you achieve this focus.

We leverage the investments you've already made in operational systems and applications by adding a layer of intelligence you can't get anywhere else. SAS solutions and services empower your organization to transform raw data – from any source and across every channel—into usable intelligence about customers, suppliers, your organization and the overall performance of your enterprise. We call it SAS Intelligence, and we deliver it through our industry-leading data management and analytics.

Because all SAS solutions rely on the same open, extensible framework—the Intelligence Architecture—it's easy to link individual solutions and leverage existing technology to produce reliable information that decision-makers can act upon with confidence.

Whether you're focused on one facet of your business or committed to improving performance throughout the enterprise, SAS Intelligence can help you maximize profitability, minimize risk and achieve competitive advantage.

Solutions from SAS, the world's largest privately held software company, are used at more than 40,000 business, government and university sites around

the world. Customers include 90 percent of the Fortune 500. For more than 25 years, SAS has been giving our customers *The Power to Know*[®]. For more general information, visit us at www.sas.com.

For more specific information about SAS' solutions for the high-tech industry, visit us at www.sas.com/industry/mfg or call Americas Manufacturing Practice at (248) 354-3008 or our International Manufacturing Sales at (49) 6221-4160.



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