

SAS in the Manufacturing Industry: Exploiting the Potential

PERSPECTIVE #MIVC67R9
Pierfrancesco Manenti

IN THIS PERSPECTIVE

IDC Manufacturing Insights was invited to Inside Intelligence 2009, SAS' industry analyst conference.

SAS is well known for its business intelligence, analytics, and advanced statistical analysis capabilities, particularly in finance and banking. However, SAS has a well-developed industry solution approach, and the company has offered targeted industry solutions to the manufacturing sector since 2000.

This Perspective describes solutions developed and being offered by SAS for demand forecasting, service parts optimization, warranty management, aftermarket services, predictive maintenance, and manufacturing sustainability.

SAS, however, is still not well known by many manufacturers.

SAS Overview

Although SAS is seeing some effects of the economic downturn, the company is one of the more resilient IT vendors around today. In 2008, SAS maintained its 32-year record of continued growth, which started when it was founded in 1976. While competitors are laying off employees, SAS talks about employee retention, and is not currently planning any layoffs.

SAS' success results from its close relationship with most of its customers. In fact, 70% of the company's revenue stems from existing customers. Mostly, SAS sells direct to customers, with partners responsible for just 28% of revenue.

The company provides applications for data integration, analytics, and reporting. These applications are deployable via traditional product licences, hosted application or software as a service (SaaS). SAS believes it is its analytics capability that generates true value and differentiation. For example, the company's eight-level maturity model provides an overview of its capabilities:

- **Levels 1–4:** These levels essentially support a reactive management approach to business issues. SAS provides the ability to analyze historic data through standard reports, ad hoc reports, drill-down queries — online analytical processing (OLAP) — and alerts. These tools answer questions, such as: What happened? When did the problem occur? Where is the problem? What actions are required?
- **Levels 5–8:** These levels enable a proactive, forward-looking management approach to business issues. SAS provides tools, such as statistical analysis, forecasting, predictive modelling, and optimisation. They answer questions such as: Why is it happening? What if these trends continue? How does this affect my business? How do we improve?

SAS' Industry-Specific Approach

These days, enterprise IT purchasers are no longer technology geeks but business managers seeking solutions to business challenges. Thus, SAS has moved from an IT focus to a business solution focus, and is increasingly offering solutions tailored to particular industries. Particularly in Europe, SAS traditionally sold into banking and financial services, an industry that accounts for 42% of the company's global revenue. Given the recent financial crisis, relying merely on financial institutions markets is clearly a risky proposition. However, thanks to its past investments, SAS can now benefit from its well-developed industry diversification strategy.

The manufacturing industry represents the third largest source of revenue for SAS after financial services and insurance, and the public sector. Among the manufacturing subindustries where the company is more active are automotive, high tech, industrial equipments, consumer packaged goods (CPG), food and beverage, and pharmaceuticals.

Nevertheless, Manufacturing Insights believes that SAS still has very good opportunities for growth, and to further penetrate the manufacturing industry.

SAS' Industry-Specific Solutions

SAS' internal surveys suggest that manufacturers are looking for the following applications:

- Industry-specific solutions, 39%
- Supply chain solutions, 31%
- Performance management solutions, 13%

SAS' current solution for manufacturing, SAS for Manufacturing and Supply Chain, supports the entire value chain, namely, sourcing, production, demand management, and service.

Within the SAS for Manufacturing and Supply Chain framework, three new applications are becoming available:

- **SAS Predictive Asset Maintenance:** Covering production processes, this new solution was released in 1Q09.
- **Service Parts Optimization:** A new version of the application will be released in 4Q09.
- **SAS Warranty Analysis:** Covering service processes, this new solution will be released in 4Q09.

The company's current focus on these three applications clearly shows that SAS has a sound understanding of what are the most relevant challenges facing manufacturing today:

- **Asset Maintenance** — As we highlighted in our recent report, *Surviving the Recession: Exploiting Existing Fixed Assets* (Manufacturing Insights #MICO51R9, March 2009), in a down economy, manufacturers are unlikely to invest in new plants and equipment. Thus, asset maintenance becomes increasingly important to maintain asset uptime and productivity. In addition, manufacturers tend to over maintain equipment. Modern asset management practices can reduce costs and improve equipment uptime. In the next few months, Manufacturing Insights will be issuing a series of reports on asset maintenance practices, including the studies, "Operational Excellence Survey: How Manufacturers are Surviving the Recession" — where the importance of achieving maintenance excellence represents an essential step to achieving operational excellence — and "It's all About the ROA: Creating Modern Asset Management Practices" — where modern asset management practices are deepened through case studies and enterprise asset management (EAM) IT application profiles.
- **Aftermarket services** — New product purchases decline in a recessionary economy. Hence, enhancing aftermarket services for existing installed products generates additional revenue for manufacturers and cost savings for customers. SAS believes the average manufacturer obtains 30% of revenues from aftermarket services, yet such services generate 40% to 50% of their profits. In addition, sales of spare parts and consumables tend to be more robust during an economic decline, and on average last for seven years after the original sale. The challenge for manufacturers is that managing production and distribution of spare parts requires a supply chain quite different from that of finished products.

- **Warranty management** — These processes pose significant challenges to manufacturers. Extending warranties is one way for manufacturers to differentiate their products. However, warranty costs have become a significant burden, particularly in the automotive industry. Moreover, few manufacturers can measure the impact of warranty lengths and costs on initial sales and customer satisfaction. In addition, manufacturers need to better manage the warranty process, and better identify root causes through more granular product genealogy data.

Examples of SAS Solutions in Manufacturing

SAS also presented some interesting case studies:

- **One of the leading construction machinery manufacturer's** main goal was to maximize cash flows while reducing costs. For this manufacturer, warranty management had been a key pain point and discussion topic for some years. Mostly, the discussion revolved around service quality and customer satisfaction. With the economic downturn, the warranty management discussion evolved into finding a better trade-off between customer satisfaction and cost containment. The company has thus recently made a significant investment in SAS Warranty Analysis to help with their warranty transformation initiative, specifically in the areas of warranty claims administration analytics and field quality analytics. Leveraging its existing long-term relationship, SAS' consulting team estimated that its warranty analysis tool would save the company a nine-digit dollar amount over three years. During implementation, SAS also identified additional savings in related areas, such as reducing the cycle time for dealers to implement corrective actions. Now, this company is installing SAS' Service Parts Optimisation solution.
- **Korean steel manufacturer Posco's** challenge was to predict equipment breakdowns and prevent them from occurring before they stopped production. At the same time, Posco did not want to maintain equipment "just in case", as not only was this expensive, but also stopped production. Using SAS Predictive Asset Management could reduce maintenance costs as equipment was only maintained when it was about to fail, which also extended equipment replacement cycles. Plant uptime improved, partly due to reduced maintenance downtime, and partly due to higher levels of equipment reliability, which in turn increased productivity.
- **A major aircraft manufacturer** is another proof point, as this company reduced maintenance costs, while meeting tough U.S. Federal Aviation Administration (FAA) requirements.

Potential Areas Within Manufacturing

However, there are some additional areas within manufacturing, such as manufacturing intelligence and sustainability, we believe SAS could and should exploit more aggressively:

- **Manufacturing intelligence** — Analytics or performance management on the shop floor is often called manufacturing intelligence. This discipline uses data collection and analytics to identify opportunities for improvement in operational performance. Manufacturing intelligence essentially reveals what is working and what is not, and in many cases, highlights problems that can be resolved with relatively small changes. In our opinion, SAS does not recognize adequately the potential and importance of manufacturing intelligence. SAS' view is that companies have been measuring and monitoring operations for many years, and the available solutions are merely commodities. We disagree. One major trend is that manufacturers are focusing on operational excellence, the basics of manufacturing. Admittedly, in the last few years, effective manufacturing management has become something of a lost art, but given the current economic environment, companies are realizing operational excellence can be a significant competitive weapon.
- **Environmental sustainability** — Among the solutions that SAS presented, SAS Sustainability Management deserves attention. Although, there was strong initial interest for such solutions, SAS found that the economic crisis caused its customers to focus on survival, rather than sustainability. Admittedly, SAS says it is not seeing significant traction in its markets today. Our research presents a different picture particularly in the manufacturing industry. Although, some manufacturers regard sustainability as yet another regulatory burden, many are gaining operational cost efficiencies from their sustainability initiatives. Sustainability initiatives utilize strategies to reduce, reuse, and recycle energy, raw materials, water, and emissions, thus improving operating efficiencies by reducing operating costs and resource consumption. Manufacturing Insights' research indicates a strong correlation between superior profitability and environmental excellence. In addition, embracing the green cause is a strong driver today to build new business — note that today, green products ramp up faster. In our opinion, SAS should push SAS Sustainability Management more strongly in the manufacturing industry, particularly in Europe where government pressures are stronger than elsewhere in the world. This should be relatively easy, given the case studies that SAS can present, for example:
 - **High tech manufacturer Cisco** has a number of plants using SAS Sustainability Management application to evaluate Cisco's environmental footprint. The plants leverage SAS' ability to forecast emissions and what-if analysis to evaluate sustainability project proposals.

- **A leading steel maker in the Far East** is partnering with SAS to extend its Sustainability Management application to combine analytical and optimization processes to better control emissions and resource consumption.

Essential Guidance

In many industries, manufacturers find it difficult to differentiate their products, as production equipment, raw materials, components, and human resources are, more or less, equally available to all. Thus, superior manufacturing and business processes, that is, operational excellence, is one of the few remaining points of differentiation.

The key enabler of operational excellence is analytics. These tools provide insights into how processes behave, and such insights form the basis of superior monitoring, control, optimization, innovation, and process improvement.

However, such initiatives tend to solve a couple of problems and then die, as people move on to other projects. To address this, the following are required:

- Top management commitment to the use of analytics
- The creation of a cross-functional team to design and deploy analytics solutions
- Enterprisewide deployment of analytics solutions, rather than a piecemeal, departmental deployment
- Investment in training
- Commitment to maintaining the analytical models.

Suggestions to SAS Going Forward

Unlike many other business intelligence (BI) vendors, SAS has significant statistical and analytical capabilities. The company has a good understanding of the techniques. Also, the company has a very good position and understanding of supply chain practices.

In our opinion, what is required going forward is a better understanding of the myriad applications — beyond mere demand forecasting — where such statistical and analytical techniques can have a dramatic impact. This is particularly true today for plant floor operations.

In doing so, however, SAS also needs to speak the language of the plant floor; that is, to understand production processes and terminology. Otherwise, the company's applications and people will lack credibility on the plant floor. Nevertheless, the value of such solutions is high and the project costs are relatively low, suggesting that SAS should better market its solutions to manufacturers.

LEARN MORE

Related Research

- *Operational Excellence: Establishing Common Operating Metrics Through SaaS Applications* (Manufacturing Insights #MIAS52R9, June 2009)
- *Dassault Systemes: Long-Term Vision Balanced by a Healthy Dose of Pragmatism* (Manufacturing Insights #MIVC62R9, June 2009)
- *Business Strategy: MES Strategies Part 1 — Importance and Challenges of Real-Time Manufacturing Execution* (Manufacturing Insights #MICO01R9, May 2009)
- *The Modern Supply Chain: Inventory Optimization Competitive Assessment* (Manufacturing Insights #MI218001, May 2009)
- *Eco-driving: Fiat's eco:Drive Software Helps Reduce 15% of CO2 Emissions* (Manufacturing Insights #MIAS51R9, May 2009)
- *Operational Excellence: The Next Frontier to Survive the Recession* (Manufacturing Insights #MICO52R9, April 2009)
- *EMEA, Automotive and Discrete Manufacturing Industry Update: January to March 2009* (Manufacturing Insights #MIVC61R9, April 2009)
- *EMEA, High-Tech Industry Update: January to March 2009* (Manufacturing Insights #MIVC60R9, April 2009)
- *EMEA, Process Manufacturing Industry Update: January to March 2009* (Manufacturing Insights #MIVC59R9, April 2009)
- *EMEA, Consumer Product Manufacturing Industry Update: January to March 2009* (Manufacturing Insights #MIVC58R9, April 2009)
- *Surviving the Recession: Exploiting Existing Fixed Assets* (Manufacturing Insights #MICO51R9, March 2009)
- *EMEA Manufacturing 2009 Top 10 Predictions* (Manufacturing Insights #MIVC01R, February 2009)
- *Process Plant of the Future: Building on the Oil and Gas Vision* (Manufacturing Insights #MI216583, February 2009)
- *Global PLM Study: Implementation Landscape and Investment Priorities* (Manufacturing Insights #MI216189, February 2009)
- *Photovoltaic Cell Manufacturing Rising Like the Sun — How to Sustain Strong Global Growth at Q-Cells: A Case Study* (Manufacturing Insights #MIHT51Q, February 2009)

- *Involving the Consumer in Product Design: The Sanity of Crowds* (Manufacturing Insights #MIPL51R, February 2009)
- *Competitive Analysis of Top 5 Hardware Vendors to the European Manufacturing Industry* (Manufacturing Insights #MIVC06Q, February 2009)
- *SaaS ERP System With Oracle at Farwest Steel Corporation: A Case Study* (Manufacturing Insights #MIVC52R, January 2009)
- *European Perspectives on Green Values: From Shop-Floor Level Operations to the Heights of the Boardroom* (Manufacturing Insights #MIAS55Q, November 2008)
- *EH&S (Environmental, Health and Safety) Solution at Tenaris: a Case Study* (Manufacturing Insights #MIPM51Q, November 2008)
- *How Much Does Innovation Matter?* (Manufacturing Insights #MIAS54Q, November 2008)
- *Global PLM Study: Observations and Lessons Learned* (Manufacturing Insights #MI214465, October 2008)
- *Profitable Proximity — Enablers Revisited!* (Manufacturing Insights #MI214406, September 2008)
- *Modernizing Your Supply Chain: The Execution Imperative* (Manufacturing Insights #MI212394, June 2008)
- *Infor in EMEA: Pragmatism and Innovation Combined* (Manufacturing Insights #LC60Q, June 2008)
- *Microsoft and the In-Car Technology Opportunity* (Manufacturing Insights #MIAS53Q, May 2008)
- *Oracle Showcases "Power of the Portfolio" in EMEA* (Manufacturing Insights #LC58Q, May 2008)

Copyright Notice

Copyright 2009 Manufacturing Insights, an IDC company. Reproduction without written permission is completely forbidden. External Publication of Manufacturing Insights Information and Data: Any Manufacturing Insights information that is to be used in advertising, press releases, or promotional materials requires prior written approval from the appropriate Manufacturing Insights Vice President. A draft of the proposed document should accompany any such request. Manufacturing Insights reserves the right to deny approval of external usage for any reason.