



## Business impact

A global automaker used SAS to improve service parts forecast accuracy by 20 percent in the US and 15 percent in Japan.

## Challenges

- **Lack of visibility.** With millions of SKUs spread throughout the service chain, it's difficult to gather data on all factors that impact demand (e.g., units in operation, product mix, stock-outs, service contracts, etc.).
- **Inconsistent data.** Incompatible processes and systems, inconsistent naming conventions and volumes of structured and unstructured data make for data inconsistencies that prevent us from getting the information we need.
- **System limitations.** Existing systems (ERP, spreadsheet-based, etc.) are disjointed, can't handle large amounts of data, and require time-consuming, error-prone manual intervention.
- **Inaccurate forecasts.** Standard forecasting models that generate high-level forecasts based on historic demand can't project future demand accurately at the frequency and level of detail needed.
- **Disconnected field service and inventory components.** The inability to integrate people and parts leads to forecasting errors and inefficiency throughout the entire service chain.



## How can we meet targeted service level commitments while lowering inventory costs?

### YOUR GOAL: Reduce inventory costs while improving customer satisfaction

Changes in the global economy have forced companies across multiple industries to look to their service organizations for a new way to earn revenue. Today, excellent service has become a critical differentiator as well as an alternate means of generating a stable, high-margin revenue flow that can mitigate marketplace fluctuations.

This shift has brought new challenges. For example, a business may increase reserve stock at more convenient locations to fulfill service-level response times and availability and meet customer service objectives. As new service contracts grow, so does reserve stock, leaving businesses with excess and obsolete inventory—and huge write-offs.

Better customer service at optimized inventory levels has become a universal goal—albeit an elusive one. Most companies still rely on inventory segmentation strategies and deterministic inventory planning, primarily out of an inability to optimize across their entire networks. Other factors—capacity constraints, complex lot size rules, sporadic demand patterns, short product lifecycles, new product introductions, etc.—can lead to excess inventory that then must be scrapped, sold at steep discounts or written off.

### OUR APPROACH

As more industries see service as a critical differentiator, businesses are realizing the impact that optimizing and automating service parts management can have on profitability and performance. But obstacles on both the supply and demand sides can drain profits and thwart attempts to achieve better customer service and optimized inventory levels at lower cost. We approach the problem by delivering software and services that help you:

- **Effectively manage data on millions of SKUs.** Gather and consolidate huge data volumes in every echelon of the service chain; then transform, standardize and cleanse the data (reconciling inconsistent naming conventions, removing redundancy, etc.) to prepare it for accurate forecasting.
- **Generate accurate forecasts at every level**—top-down, bottom-up, middle-out. Produce a variety of statistically based forecasts (short-term, long-term, new parts, end-of-life, etc.) at frequent intervals, using a service-specific data model.
- **Achieve multi-echelon inventory optimization.** Calculate optimal inventory levels and policies throughout the entire service chain based on constraints you specify (e.g., service levels, lead times and costs) by product, location, category, SKU, etc.
- **Share information throughout the service chain.** Use executive dashboards, KPI scorecards, snapshots, and templated and customizable reports—designed specifically for the service chain—to align service parts strategies by sharing information with executives and service professionals in a format they can understand.

Based on an integrated platform designed specifically for quality and service intelligence, the solution enables you to pull together the people, systems and processes necessary to achieve higher quality, lower costs and better customer service.

## THE SAS® DIFFERENCE: Powerful forecasting and true multi-echelon optimization

SAS goes well beyond the standard EOQ policies touted by most vendors by helping you create an accurate forecasting environment designed specifically for service parts. While typical ERP systems attempt to optimize sequentially—leading to inflated demand forecasts and stock overages—SAS enables true multi-echelon optimization by letting you optimize inventory levels simultaneously for every SKU at every location in your network.

With SAS, you can achieve immediate cost savings of 5 percent to 15 percent, while maintaining or increasing your service level commitments. Our solution lets you:

- **Gain visibility** across the entire service network and **overcome data discrepancies** caused by inconsistent naming conventions and disjointed systems and processes.
- **Determine how much and what kind of inventory to have at each location**, as well as when and in what quantities to place replenishment orders.
- **Efficiently and accurately forecast new and end-of-lifecycle parts**, and perform fully automated time series forecasting for every part at any location in your network.
- **Optimize slow-moving items** by applying specific algorithms for intermittent demand.

Designed for complex global environments, the SAS solution suits the growing forecasting needs of companies that rely heavily on their service networks, regardless of company size or market complexity.

### CASE STUDY: A major global automaker

#### Situation

The company's complex service network included multiple distribution centers and remote locations using different systems and processes. Millions of SKUs and scattered data added more complexity, making it nearly impossible to generate accurate forecasts and optimize inventory at each location. Despite a stellar service record, the company grappled with excess inventory, huge write-offs and frequent stock-outs.

#### Solution

SAS helped the company:

- Utilize production data—including causal factors and industry data—from multiple sources both inside and outside the company.
- Automate highly accurate forecasts for all parts, including new and end-of-lifecycle parts, at any location.
- Automatically alert planners and distribute reports to users in planning and inventory control in a format they could use.

#### Results

- Improved service parts forecast accuracy by 20 percent in the US and 15 percent in Japan.
- Reduced inventory levels by half (as well as cutting associated costs) while maintaining an instant delivery rate of 99 percent.

### The vision

#### Effective data management

What if you could access all relevant data on every SKU from anywhere in your network – parts manufacturers, distributors, third-party logistics or repair centers – and reconcile inconsistent naming conventions so the data was ready for analysis?

#### Accurate forecasts at every level

What if you could frequently generate millions of accurate forecasts down to SKU level, including new and end-of-lifecycle products, without manual intervention?

#### Multi-echelon inventory optimization

What if you could optimize inventory levels simultaneously – taking into account all supply and demand variables – for every single SKU at every location in your service network, with the choice of a top-down, bottom-up or middle-out optimization?

#### Information sharing throughout the service chain

What if you could align your service parts strategies by sharing information in a timely way with executives and service professionals throughout your partner network in their preferred format?

### SAS FACTS

- The patent-pending SAS® Forecast Server earned a Product of the Year award from Technology Marketing Corporation's *Communications Solutions* magazine in 2006.
- SAS has been in business since 1976 and today has customers at more than 40,000 sites worldwide.
- SAS customers make up 96 of the top 100 companies on the FORTUNE Global 500®.

Learn more about SAS® software and services at: [www.sas.com](http://www.sas.com)



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SAS Institute Inc. World Headquarters +1 919 677 8000

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