



SAS® Warranty Analysis

Reduce warranty costs and improve product quality and brand reputation

Overview

In the battle for customers, warranty service has become a critical differentiator for manufacturers, as robust warranties imply high quality and companies that stand behind their products. When customers must return products for service during the warranty period, they expect a speedy and satisfactory resolution. Failure to meet customer expectations is a significant challenge that can have a dramatic financial effect if you lose market share to competitors who can deliver more satisfactory warranty service or back up their warranties with a higher-quality product.

Because of the multitude of variables, warranty data is dense and complex. It also is typically collected for the purpose of paying service providers, not for improving product quality, detecting suspect claims or increasing customer satisfaction. However, if you can identify critical emerging issues and shorten the detection-to-correction time, you can improve your products, increase customer satisfaction, reduce service costs and calculate warranty reserves more accurately.

To reduce warranty costs, build customer loyalty and differentiate themselves, smart manufacturers have increased their focus on post-sales service, and they are relying on analytics to make sense of their warranty claims and field performance data.



Challenges

- New issues grow in the field for months before they are detected.
- Warranty claims and resolutions cannot be tracked in a timely manner.
- Warranty costs and poor customer satisfaction ratings are increasing.
- Historical/supplier information is hard to integrate and analyze, so it is difficult to prepare for future issues.
- The massive amounts of quality and warranty data are difficult to integrate.
- Business analysts and executives do not have ready access to information.
- Root cause analysis takes too long.
- Feeding warranty claims information back to design and manufacturing takes too long.
- Processes are ineffective and manually intensive.
- Customer and technician text-based comments are underutilized.



A true warranty analysis solution for identifying emerging issues sooner

The solution

SAS® Warranty Analysis integrates warranty data with key customer, product, manufacturing and geographic information, enabling organizations to increase the efficiency of problem-solving efforts for improved quality and customer satisfaction. With this solution, organizations can:

- Automatically detect emerging issues before they have a significant effect on performance.
- Quickly prioritize issues so that problem solvers can focus on what is most important.
- Define which combinations of attributes are driving failures so resources can be focused on the right issues in the right place at the right time.

Benefits

Decrease warranty costs

Simply reporting on warranty data is not sufficient in today's marketplace. Instead, you must proactively analyze your data to surface emerging issues, quickly identify problems and determine their root causes. Advanced analytics and data mining techniques with an automated workflow help organizations reduce warranty costs by:

- Detecting issues earlier.
- Accurately forecasting the potential cost of warranty issues.
- Quickly pinpointing where problems are occurring.

Automatically detect issues earlier

SAS Warranty Analysis helps organizations recognize emerging issues before they become huge, costly problems, and enables them to start the problem-solving process months earlier.

The solution:

- Simultaneously monitors production period, time in service and claim period.
- Identifies new issues in the field without analysts having to look through hundreds or thousands of charts.
- Flags higher-than-normal failures and notifies the appropriate analyst or engineer.

Reduce detection-to-correction time

SAS Warranty Analysis provides engineers with the information they need to request parts and conduct tear-downs. The solution:

- Defines the combinations of attributes that are driving field issues.
- Filters out normal variations to focus problem solvers on the significant differences.

Minimize the size and cost of recalls

By understanding which product, customer and usage attributes are driving the failures, organizations can focus recalls on attribute combinations that are at risk, reducing the size and scope of recalls. SAS Warranty Analysis:

- Detects problems and identifies fixes before they become product recalls.
- Helps reduce the shipment of faulty products in the future.

Capabilities

Data integration

With SAS Warranty Analysis you can consolidate data sources into a single repository for tracking, analysis and reporting. Having access to all data enables a more comprehensive approach to identifying problems. In addition, a standard, extensible data model is common to all SAS service solutions and includes an interface with dashboards and scorecards designed for the service chain. SAS Warranty Analysis now supports data marts in third-party databases, including Teradata, Oracle and MySQL.

Warranty dashboard and scorecard

The Web-based, point-and-click dashboard can be used to access the latest information on key warranty performance indicators, drill into performance trends and disseminate strategic information across your organization, including e-mail subscriptions to emerging issues and watch lists.

Integrated warranty business rules

By applying business rules such as sales lag profiles, usage distributions, maturity calculations and seasonality adjustments, you can address the variations and complexities of warranty data and even use other applications such as the SAS® Add-In for Microsoft Office (a component of SAS® Enterprise BI Server and SAS® BI Server).

Text mining and analysis

SAS Warranty Analysis transforms text-based data into a meaningful format ready for use in data exploration, clustering and statistical modeling. You can extract and categorize essential information from reams of text-based data, combine it with structured data and analyze it to gain valuable knowledge about critical service and product issues. Advanced features such as related-word search enhance problem definition and root-cause analysis.

Emerging issues system

Automatically detect upward shifts in claims, calls or other activity through an emerging issues system. The system automatically determines the critical values and simultaneously monitors changes across production period, usage and time of claim. Issues with criteria that surpass critical values are flagged. They can be distributed appropriately and comments attached so that current progress is easy to ascertain. Users also can subscribe to e-mail alerts for issues that affect them.

Reporting and analysis

Combine and subset data using comprehensive, easy-to-use filters, then prioritize and define issues with a standard set of interactive, warranty-focused analyses. Problem solvers can quickly understand where to focus their efforts.

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The SAS® Difference

While many vendors claim to have warranty analytics solutions, they are really just reporting packages. There is a huge difference between warranty data reporting and warranty analysis. Any reporting tool, from the most sophisticated solution down to a basic spreadsheet application, can tell you what happened (e.g., report on how many claims for which products were submitted by what servers). But to see into the future and find emerging issues before they become huge, costly problems, you need a true warranty analysis solution. Only SAS offers a solution specific to warranty analysis, with an automated workflow for identifying and acting upon emerging issues, including:

- **Detection** – identifies the problem early on.
- **Prioritization** – puts the problem into perspective, calculating how much it will cost if nothing is done.
- **Definition** – identifies which variable combinations drive failures and isolates failure models to enable true root-cause analysis.

SAS is the market leader and only technology vendor with true domain expertise in warranty analysis. We've built our industry-leading analytic capabilities and intellectual capital directly into the solution. You get a true warranty analysis solution with a singular focus – not just an analytical tool that can be adapted for warranty data.

Advanced warranty analysis

Advanced users can choose from hundreds of powerful analytic techniques to uncover additional knowledge, all from an environment that does not require programming.

Report library

Information can be made available across the enterprise or can be limited to specific users or groups. Interactive reports can even be shared with suppliers, service providers and customers, allowing them to analyze their own products and performance.

Related SAS® offerings

- **SAS® Predictive Asset Maintenance** enables predictive and preventive maintenance of assets with minimal disruption to production. As a result, you can maximize the use of maintenance resources to meet operational goals for profitability, safety and environmental compliance.
- **SAS® Quality Lifecycle Analysis** integrates all relevant data in one place, allowing user communities to analyze quality and yield issues in a timely manner. A standardized state-of-the-art toolset enables companies to drive root-cause analysis, improvement actions, reporting and monitoring in a repeatable way. Users can concentrate on finding causes and solutions instead of discussing the validity of data.

About SAS

SAS is the leader in business analytics software and services, and the largest independent vendor in the business intelligence market. Through innovative solutions delivered within an integrated framework, SAS helps customers at more than 45,000 sites improve performance and deliver value by making better decisions faster. Since 1976 SAS has been giving customers around the world THE POWER TO KNOW®.

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