How can we use our structured and unstructured big data assets to improve our products and lower operating costs?

Business Impact

"SAS High-Performance Analytics can turn any data – including big data – assets into quicker, better business decisions and, ultimately, competitive advantage."

Dan Vesset
Program Vice President
IDC's Business Analytics research

Challenges

- **More complex analytical processes.** The need for more analytical models and functions – and more frequent model refreshes – may overwhelm traditional IT infrastructures. This can delay modeling results, which will negatively affect timely decision making.
- **Big data issues.** Massive volumes of structured and unstructured data are too unwieldy for current infrastructures. That means that large quantities of data are omitted from many analyses, which impacts the accuracy of the results.
- **Scattered data sources.** It's a challenge to bring all relevant data together – from multiple, siloed sources – and make it ready for analysis.
- **Lack of scalability.** Current IT infrastructures may be unable to meet growing analytical needs – such as quickly integrating new data sources, performing iterative analytical data preparation, retraining analytical models, etc. – in an ever-tightening time window.

THE ISSUE

Monitoring tens of thousands of assets in widely distributed environments 24/7 is a huge undertaking for global service organizations. Add to that the IT workload associated with integrating, cleansing and scoring data from assets under service, and it's no surprise that it can be a huge struggle. Traditionally, IT had to invest in expensive storage appliances and databases to cope with the data. However, associated operating and maintenance costs are almost prohibitively high. And the influx of unstructured data and new data sources, such as telemetry and RFID, are further taxing infrastructures. As a result, many organizations haven't integrated these new sources into existing analysis processes. What's more, engineering and marketing communities have difficulty consuming the data. But if you could integrate these new sources of product and production data with archived data, you could gain a more precise understanding of failure modes and root causes of failures – *and* be able to do something about them.

Today's products have become increasingly complex. Hundreds or thousands of sensors and intelligent electronic control systems produce data that could quickly identify and provide deeper insight into the root causes of failures in the field. Looking ahead, this data could become the foundation for more advanced analytics and predictive models that could automatically alert you to impending failures or performance deficiencies far enough in advance for you to take corrective action.

OUR APPROACH

Remove the barriers that keep you from analyzing structured and unstructured big data assets, and eliminate the restrictions your existing computing infrastructure imposes. With SAS® High-Performance Analytics products, you can:

- **Spot opportunities, detect emerging issues and make the right choices – quickly and confidently.** Analyze numerous scenarios simultaneously. Get more accurate, detailed results. And respond faster to changing conditions in your assets, processes, products, the weather, etc.
- **Solve your most complex problems, and explore issues and opportunities thoroughly.** Use the best modeling techniques – including telematics data analysis and large-scale asset model scoring. Perform more model iterations. And use *all* available structured and unstructured data – not just a subset.
- **Get insights faster than ever before.** Process analytical models in a fraction of the time it used to take. And make important, time-sensitive decisions with confidence.
- **Get the most out of your resources – people and money.** A scalable IT infrastructure for analytics takes full advantage of in-memory processing. As a result, you can test new ideas. Evaluate more scenarios. All without constraints.

Bottom line? SAS High-Performance Analytics products give you more accurate insights. In minutes, not hours.

THE SAS® DIFFERENCE: The Power to Know® – faster than ever

Make better decisions within tight time frames. Solve more complex problems than you ever thought possible. Use big data and sophisticated analytics in a distributed, in-memory environment. Our suite of SAS High-Performance Analytics products includes in-memory software for statistical analysis, data mining, text mining, optimization, econometrics and forecasting. With SAS, you get:

- **The only in-memory offerings that process big data analytics to extract time-sensitive insights.** Only SAS High-Performance Analytics products solve complex problems by applying truly sophisticated analytical techniques – not just query, reporting and descriptive statistics within an in-memory environment.
- **A solution that addresses the entire model development and deployment life cycle.** Unlike other offerings, SAS High-Performance Analytics products let you develop new models and put them into action fast, so you can extract more value and insights from your structured and unstructured data.
- **More than 37 years of proven technology – faster.** SAS customers at more than 65,000 sites around the world can now run SAS high-performance analytic procedures in a distributed, in-memory environment. This ability to quickly extract value from big data opens up a vast array of possibilities never before imagined.

SAS® HIGH-PERFORMANCE ANALYTICS PRODUCTS FOR MANUFACTURING

Large-scale asset model scoring

Easily integrate the huge volumes of asset tag data associated with large production asset populations. Score data in real time using predictive models to predict – and prevent or mitigate – adverse events. As a result, maintenance engineers can keep asset-intensive processes up and running. And this leads to significantly lower operating costs.

Telematics data analysis

Combine telematics and on-board diagnostic data with warranty, sales and manufacturing quality data, as well as operating parameters, on-board sensors, and usage and environmental information. You'll gain a deeper understanding of the main causal and influential factors that lead to failures and performance problems.

- **Automotive manufacturers** could correlate on-board diagnostics data with information on service visits, driving habits and environmental conditions. They could then proactively distribute service bulletins and make design changes within model years.
- **Agricultural manufacturers** could use geographical positioning information and usage, weather and sensor data to make real-time predictions of impending failures and maintain the highest possible service levels.

What if you could …

React to situations more quickly and confidently

What if you could drive down product costs and significantly improve the customer experience by fully understanding the root cause of problems and implementing corrective actions in the form of design changes and service announcements?

Go beyond traditional analytic approaches

What if you could develop highly accurate predictive models that would enable you to avoid adverse events, thus leading to greatly improved performance of large asset populations and significantly lower operating costs?

Quickly derive high-value insights

What if you could gain sufficient insight into how your product performs under various usage conditions and use that insight to make design improvements within the product's life cycle, as well as influence future designs?

Get more out of your IT resources

What if you could add new sources of structured and unstructured data, and build more specific models based on more variables, as well as use the right model for the job – not just the one that will finish the process in the allotted time with the fewest errors?

You can. SAS gives you The Power to Know® – faster than ever.

SAS FACTS

- SAS has been in business since 1976 and today has customers at more than 65,000 sites worldwide.
- SAS has more than 37 years' experience analyzing warranty and service contract data for industries around the globe.
- More than 2,000 manufacturing companies worldwide use SAS.

Learn more about SAS software and service for manufacturing: sas.com/industry/mfg

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