Improve Grid Reliability With Predictive Analytics

The Issue
Faced with an aging infrastructure and new sensor data, utilities are under pressure to optimize asset replacement costs, improve operating efficiencies, maintain strict budget control, and meet regulatory requirements for adopting renewable and smart grid technologies. Even as they invest heavily in maintenance and repairs, “an analysis of utility generation, transmission and distribution assets suggests opportunity exists to improve the efficiency of the grid and the utilization of its assets”.

Utilities are continuing to invest in new sensor technologies that, with the right big data strategy, enable them to move from a reactive or condition-monitoring mode to a predictive planning mode. Addressing service needs as they occur rather than proactively anticipating them ends up costing more in the long run – in terms of personnel, equipment and customer satisfaction. It also has an adverse effect on customer satisfaction and reliability indices.

Our Approach
With predictive asset analytics, utilities can proactively mitigate events that cause outages and run assets at peak performance. SAS provides software and services to help utilities:

- **Improve asset performance** by predicting and planning for problems before they escalate to cause unexpected shutdowns.
- **Reduce prolonged outages** to enhance your reputation with customers and regulatory agencies.
- **Strengthen compliance** by avoiding health, safety or environmental violations and the resulting financial penalties.
- **Gain a contextual view of asset health** by performing comparative analysis of KPIs to break down data silos and incorporate best practices from around the organization.
- **Optimize costs** by identifying and addressing issues sooner, from routine equipment maintenance to workforce planning.

With state-of-the-art analytical modeling, visualization and alert-initiated workflows, SAS helps you align performance strategies and close the gap between target and actual performance of reliability metrics.

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The SAS® Difference:
Optimize costs and avoid disruptions with predictive asset analytics

SAS helps utilities harness the power of big data from highly instrumented assets. With SAS, you can:

- **Predict future maintenance needs for critical assets.** SAS offers a comprehensive library of descriptive and predictive models that address a wide variety of data sources using a high-performance engine enabled to handle high data volumes.

- **Get a single source of insights for grid assets.** We have extensive experience working with and integrating data, including unstructured text data, from maintenance records and leading asset management vendors, GIS, ERP vendors and historians.

- **Gain a holistic view of asset performance.** SAS gives users a complete predictive analytics solution encompassing data management, analysis, visualization and reporting with the ability to model down to individual assets.

- **Develop customized predictive models in-house more quickly.** With machine learning and rapid GUI-driven modeling capabilities, SAS enables analysts to respond to changes in the asset infrastructure without engaging expensive external resources.

- **Ensure continuity and process documentation.** SAS helps utilities collect and capitalize on the knowledge of their aging workforce by enabling them to document effective processes that ensure system maintenance and performance continuity.

### What if you could …

<table>
<thead>
<tr>
<th>Optimize cost performance</th>
<th>Monitor and measure the health of the entire system</th>
<th>Pinpoint exact causes</th>
<th>Anticipate future events</th>
</tr>
</thead>
<tbody>
<tr>
<td>What if you could optimize both man-hours and maintenance costs by pinpointing problems more accurately and aligning resources more effectively?</td>
<td>What if you could overcome barriers imposed by siloed operational systems and gain true visibility into asset performance and business impact?</td>
<td>What if you could identify the root cause of asset performance issues by applying advanced analytics to data, in motion or at rest?</td>
<td>What if you could predict events that cause outages?</td>
</tr>
</tbody>
</table>

**You can. SAS gives you THE POWER TO KNOW®.**

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**SAS Facts**

- SAS helps customers at more than 75,000 sites improve performance and deliver value by making better decisions faster.

- SAS works with more than 250 utility customers worldwide and 100 percent of the US Fortune Global 500® Utilities.

- Gartner positions SAS as a *Leader in the Magic Quadrant for Advanced Analytics Platforms.*

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1 Gartner, Magic Quadrant for Advanced Analytics Platforms, Gareth Herschel, Alexander Linden, Lisa Kart, 19 February 2015. Gartner does not endorse any vendor, product or service depicted in its research publications, and does not advise technology users to select only those vendors with the highest ratings or other designation. Gartner research publications consist of the opinions of Gartner’s research organization and should not be construed as statements of fact. Gartner disclaims all warranties, express or implied, with respect to this research, including any warranties of merchantability or fitness for a particular purpose.

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