Market Insight Report Reprint

SAS Institute partnering with Semtech and Microsoft to tackle some of the world's toughest quality-of-life challenges

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Introduction

Today, the typical news cycle is dominated by events that reflect society's struggle with global challenges including climate-change-driven weather catastrophes and the race to vaccinate the global population from COVID-19 variants. Technologies that help to virtualize the physical world can play a direct role in either solving the root cause of these issues or contributing to solutions that work to minimize bad outcomes. In these cases, the KPIs and target outcomes are as important as they get: saving lives and protecting future generations. While using IoT technologies as a data foundation for analytics targeting tough global challenges with local specificity and precision is not necessarily a new idea, SAS and its partners believe their collaboration can solve the complexity issues that conspire to derail these types of projects before they see the light of day.

THE 451 TAKE

The importance and potential benefit of solving the types of global quality-of-life issues that SAS is targeting with its partners is not debatable. Bringing innovation and effective solutions to these society-wide challenges can also enhance brand and reinforce solid corporate citizenship. The tough question comes down to how these problems might be solved under the real-world constraints of cost/funding, readiness and integration of underlying technology and IT architecture, and overall manageability and user interface. SAS's analytics tools and Microsoft's Azure platform provide a powerful combination for IoT data ingestion, analysis and presentation designed to deliver role-specific outcomes. On the connectivity side, SAS is working with LoRaWAN IP and device leader Semtech – LoRaWAN is a suitable technology for many of the scenarios but may fall short in some instances depending on sensor type, location and data generation. To address the connectivity challenge, we'd like to see the inclusion of cellular connectivity options layered in as part of future blueprints, especially as 5G networks come online globally. Our understanding is that these connectivity partner enhancements will be part of upcoming releases along with additional global integration service provider partnerships.

Details

SAS Institute announced in the spring that it was developing blueprints and frameworks that bring together hybrid cloud services from Microsoft, the LoRa sensor ecosystem and LoRaWAN network connectivity powered by Semtech technology, and its own advanced analytics and data management capabilities. The target: addressing some of society's most costly and difficult challenges. The hypothesis SAS brings (and we agree with in concept) is that the appetite is high to solve these problems with digital technologies, but such projects often break down under the weight of cost and integration complexity or get hung up in multi-agency red tape and never see the type of scale and broad implementation necessary for real success. While the cost element will remain a challenge, the political motivation to address the impact of climate change could be viewed as a gathering tailwind, especially in the public sector across much of the developed world.

SAS has developed three specific use cases for the following areas: infrastructure resiliency for flood preparedness and prediction; global food supply via livestock health monitoring and feed optimization; and digital logistics for biologics cold chain integrity. For the cold chain solution, SAS is working with Stress Engineering, a Texas-based engineering services firm, in addition to Microsoft Azure. The blueprints are designed with a common set of organizing principals: a purpose-built ecosystem and the use of flexible and open technologies to create secure and scalable offerings that deliver faster time to value. While it's not the first time these words have been used to describe an IoT product, the frameworks SAS has worked up are well-designed and consistent.

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Each of the blueprints includes a portfolio of use cases. For instance, for flood preparedness, the blueprint includes sensors tracking flow/volume of rivers and streams, bays and canals, tidal coasts, bridges and dams, and rain/snow conditions. That data is then collected via an 'edge ecosystem and data upload,' which currently specifies the use of LoRaWAN-connected sensors and network infrastructure. The sensor data is then fed to 'cloud services and cloud intelligence,' where several Microsoft Azure Cloud Services can then be applied or invoked including IoT Hub, Maps and Weather, Event Hub and Synapse Analytics. SAS then picks up again with a series of advanced analytics services running on Azure virtual machines to normalize and clean data and use machine learning to predict outcomes or feed inference models. Finally, SAS ensures that data is transformed into actionable insight through a 'management experience' leg where event/incidents are predicted and then quickly routed via predefined logic with role-based context to the most appropriate stakeholders via a mix of alerting channels and a web-based management portal.

The major issue from our point of view is that LoRaWAN connectivity may be not be readily available, or the performance may not be feasible for some geographic locations or device types – cameras, for instance. In these cases, SAS has indicated it will readily bring in cellular connectivity options as required and is working to formalize partnerships in this area. Ultimately, it seeks to be agnostic at the connectivity layer. But specifying LoRaWAN at this stage of the maturity cycle and for the initial set of offerings appears to be working well in getting sales activity moving because it's economical and quick to deploy. We note that the partnership with Microsoft is not exclusive, and other cloud services can be swapped in for Azure if a customer requires such accommodation.

In terms of go-to market strategy and reach, these offerings will be primarily sold by either Microsoft or SAS direct sellers and/or channel partners, such as managed service providers. Semtech, while mostly working in the background of these engagements, is helping to coordinate sensor or network infrastructure providers experienced in working with these types of projects. SAS also plans to go to market with global systems integrators that have experience working within specific vertical markets or horizontal areas like cold chain management. So far, SAS has won business with the town of Cary, North Carolina, and with a large Indonesian utility for flood prediction and preparedness. SAS says the pipeline to deals is brisk and accelerating with municipalities, universities and other entities around the world. Furthermore, SAS is driving North Carolina's COVID and flu response preparedness with the NC Policy Collaboratory, using its cold chain integrity offering.

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