

An End-to-End Supply Chain Resiliency Solution Using Al-Powered Digital Twins

Connecting demand plans and forecasts with SAS and Cosmo Tech



Business Impact

Both manufacturing and consumer goods leaders know that the factory of the future is agile and insights need to be available in real time. Technology alone won't magically resolve current supply chain disruptions and slowdowns. But one tool, the AI-powered digital twin, can help businesses mitigate future problems before they turn into crises.

An agile supply chain is a competitive advantage and represents a powerful use case for digital twins. Manufacturers can use digital twins to apply machine learning across numerous data streams to simulate the real-time movement of goods, material flows, inventory positions and warehouse operations. Among enterprise organizations that have implemented IoT projects, 62% plan to use digital twins, according to a <u>Gartner study</u>.

The Challenges

- Maintaining production quality and reducing wastage.
- Meeting shifts in demand while minimizing lost sales.
- Making the best use of available resources.
- Controlling costs and margins.
- Anticipating risks and managing disruptions across the entire supply chain.
- Minimizing environmental impact.

Business Need

While demand forecasting is a critical part of supply chain planning, many manufacturers rely on a relatively small number of demand analysts and planners to generate large numbers of statistical forecasts. Given the relatively small number of forecasters, organizations should explore automation to complete each demand planning cycle. A 2021 Forbes Insights survey of 1,000 retail and consumer goods executives revealed that manufacturing companies could use intelligent automation supported by machine learning to automate repetitive work activities. This would free up demand analysts and reduce the time it takes to complete the process by as much as 47%. A cohesive digital supply chain twin provides additional advantages, including proactive and predictive planning, greater operational efficiency, reduced expenses and increased profits.

Our Joint Approach

SAS and Cosmo Tech offer an end-to-end supply chain resiliency solution built upon two key pillars:

- The SAS® Intelligent Planning Suite running on SAS® Viya®, which efficiently organizes data, predicts consumer demand, detects anomalies, adapts to emerging events, and empowers data-driven decisions at scale.
- The Cosmo Tech 360° Simulation Platform a digital supply chain twin for sourcing, inventory, production, risk and integrated business planning (IBP).

Together, we directly connect demand planning and forecasting with production and inventory planning. Our proven approach democratizes access to digital supply chain twin simulation and data analytics for enterprise customers.

By using this solution on the Microsoft Azure marketplace, companies can tap into the best experience and value as they seek to run their simulation and analytics workloads in the cloud. This secure, scalable and cost-effective solution delivers maximum detection, investigation and reporting capabilities while minimizing wasted time and effort.



What Are Digital Twins?

Digital twins are replicas ranging from physical objects to complex ecosystems. A digital twin of an organization replicates its ever-evolving functions, including physical entities, financial assets, human resources, processes, workflows and constraints. Using digital twin simulation technology, companies can test unlimited scenarios that demonstrate the impacts of different decisions on operational efficiency and KPIs.

Read more on sas.com: <u>Modern Manufacturing's Triple Play:</u> Digital Twins, Analytics and IoT

What is SAS[®] Viya[®]?

SAS Viya is an AI, analytics and data management platform that runs on a modern, scalable architecture.

- Get insights quickly with reality-tested Al.
- Balance cost and agility with a cloud-native platform and built-in automation.
- Democratize access with low-code and no-code interfaces.
- Deliver results in seconds, not hours, with massively parallel processing.
- Make repeatable, explainable, transparent and trustworthy decisions with built-in governance.

Benefits

Demand Planners

- Easily check the feasibility of an optimized demand plan.
- Get an immediate understanding of the feasibility of a demand plan.
- Adjust feasible stock-out plans.
- View all potential influencers of demand according to available production resources.
- Raise alerts to supply/production planners and IBP managers.

Supply/production planners

- Easily access the most accurate and updated demand forecasts and plans.
- Adjust production resources and capacities to solve potentially limiting bottlenecks - including impacts due to overtime, added shifts and subcontracting then alert procurement managers.

Procurement managers

Solve issues with material shortages that affect service levels by testing and comparing alternative sourcing and transport plans (adding new suppliers, increasing supplier volumes, accelerating delivery, etc.).

IBP managers

- Gain complete visibility into the end-to-end planning process.
- Find the best trade-off capacity, bridging the gap between demand, supply and production planning as dynamically as possible.
- Optimize service levels, costs and environmental impacts.

IT and analytics experts

• Keep digital twin models up to date by using intelligent filtering of IoT and other data sources.

To find out more about this partner solution,
talk to an industry specialist or request more
information, visit sas.com/contact.





At SAS, we love bold questions. And when we combine our analytics leadership with the innovative technology and expertise of our partners, we help our customers turn data into answers. That's the kind of curiosity that moves the world forward. That's the **Power of the Partner**.

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