ARTICLE

Navigating turbulent times with a supply chain control tower

There is a new generation of control towers, far more robust than what we have seen in the past. COVID-19 has served to highlight just how important supply chain agility is.

The key building blocks for the modern supply chain control tower includes data from key supply chain partners, robust supply planning, and a master data management/data harmonization layer that helps to normalize the data and can then feed accurate data to the planning engine or team members. With these building blocks in place, companies can navigate supply chain disruptions with an agility that they have never had in the past.

Recently, I've gotten briefings from Infor® on its supply chain planning and supply chain collaboration network solutions. Infor, it turns out, is one of the few suppliers that can provide all three of these pillar solutions; in short, it can provide a modern control tower solution where the customer has but one vendor to address if problems arise.

Most of the writing done on the new generation of supply chain control towers has been focused on the need for concurrent planning. But the ability to get data from across the end-to-end supply chain, harmonize it, and use it to make better decisions is equally important. Infor's end-to-end trading partner data platform is the focus of this article.

Infor Nexus Knowledge Graph

Infor's supply chain collaboration network (SCCN) solution maps parties, places, and products into the SCCN's digital twin.

The Infor Nexus supply chain collaboration network solution

A supply chain collaboration network (SCCN) is a collaborative solution for supply chain processes built on a public cloud and with a many-to-many architecture, that supports a community of trading partners. Infor Nexus™ is one of the better-known solutions in this market. 65,000 companies use the platform. $1 trillion in trade is managed over the platform and $50 billion in payments is transacted here.

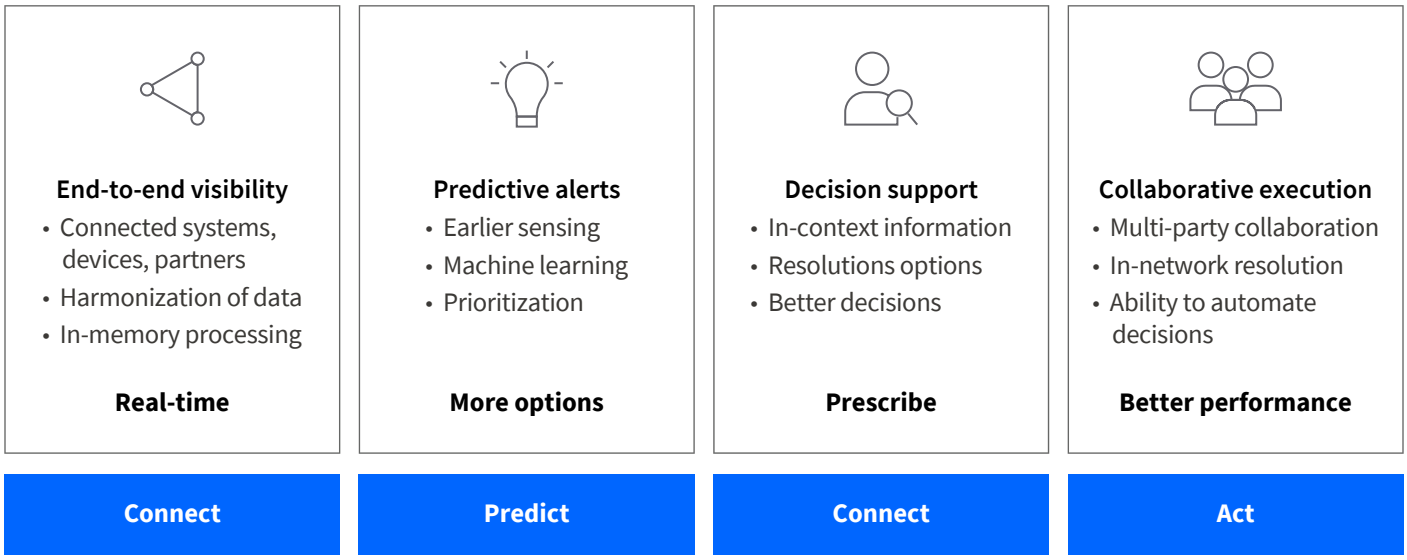
A SCCN allows a company to get data useful for planning, sourcing, manufacturing, logistics, returns, supply chain risks, and supply chain finance. Basically, a SCCN that can get data feeds from across the plan, source, make, deliver, risk, and finance categories allows companies to have an end-to-end view of their supply chain. Being able to get these alerts with fewer data exchanges lowers IT complexity and speeds implementations. In Infor's case, its SCCN also contains a digital twin: an end-to-end model of the supply chain.

Matt Simonsen, Director of Product Management for the Infor Nexus solution, explained that Nexus uses a "knowledge graph" to map parties, places, and products into the digital twin. Every transaction writes to this in-memory digital twin. What does this mean in practice? An in-memory solution allows for big data to be accessed very quickly.

What does a knowledge graph do? A knowledge graph does not start with a model of the supply chain, it creates that model based on what the data shows to be true. Mr. Simonsen said, "we don't start by having a model that says the ports are here, the suppliers are located here, and so forth. It is a supply chain model built on the fly based on what is really occurring in the network." A knowledge graph model is more accurate. That is because these types of models are based on what the data shows is really happening versus what a supply chain manager thinks is happening.

But the Nexus model can also provide the kind of data that digital twins that are based on a static planning model struggle to provide: true lead times (and other supply chain throughput/cycle time metrics). These parameters are critical for the creation of optimum plans. Lead times in planning systems are often measured, input into the system, and assumed to be true from that point forward. The Nexus system can measure the changes that are occurring and keep the lead times up to date.

The changes measured in Nexus can be based just on the data of one company. For example, when my company orders from a certain supplier in Asia to be delivered by a particular carrier, the lead time is 24 days. This kind of data could be provided by a point-to-point data exchange solution.



But the network can do this and more. If a company wants to work with a new supplier, and that supplier is in the network, onboarding is easier.

Also, certain types of alerts are better if they are based on network data rather than a company's own data. For example, how long does one particular ocean carrier take to move goods from the port of Tianjin to Long Beach? If the answer is based on the data from all parties in the network, then the alert is more accurate. And the more data that is used, the better predictive alerting will be. Predictive alerting needs to be based on big data. "Earlier sensing leads to more agility," Mr. Simonsen pointed out. "Many find out too late that a shipment is delayed. Their only choices are to expedite the shipment or admit to the customer it will be late."

Visibility without decision support has limited value

Knowing that something bad is going to happen, if you can't do anything about it, only serves to ruin your day. Supply chain personnel need to know what they should be working on. The Nexus solution allows various supply chain personnel, both internal to a company and among key trading partners, to get alerts that are pertinent to their responsibilities.

The work to resolve a problem is often executed in applications. The more applications that must be used, the more difficult it is to respond. In many cases, problems can be resolved in the Nexus solution.

Infor is building out the options on what a person with a designated job could do to resolve a problem or opportunity. In some cases, the resolution can be executed on the spot. In some cases, collaboration with partners or other internal departments is necessary to make and execute the best decision. Infor enables collaboration and execution with internal and external partners in its SCCN.

When a solution to an exception situation is based on prebuilt rules in an execution solution, we speak of an "orchestrated" solution. When a planning engine provides an answer, we have an "optimized" solution. Because both SCCNs and planning solutions model the end-to-end constraints and costs, determining which solution to use to solve an exception situation depends upon timing. SCCNs are better suited to address exception situations in the immediate and near-term execution window. Planning solutions are better suited to address exception situations in the medium to longer term timeframe. Learnings from SCCN orchestrations are shared with planning solutions to optimize future planning with real-world feedback.

Infor is working to more tightly integrate its SCCN and planning solutions. "Our goal, Mr. Simonsen concluded, "is to update the supply chain planning model based on what is happening in the network model."

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