The steps and obstacles to tracking even a single item’s path from supplier to end user are manifold. In the defense arena, they are often multiplied, compounded by security requirements and troop movement over remote, treacherous terrains, such as those in Afghanistan or Iraq. Having a way to measure their supply chains’ performance would enable defense agencies to better monitor and adapt their needs, said Steve LeSueur, contributing editor for Custom Media at 1105 Government Information Group, during an April webcast about supply chain analytics and management.

“In particular, I’m talking about such capabilities as an ability to perform root-cause analysis when disruptions occur as well as an ability to identify key trends in supply chain patterns,” he said. “Now, the goal, of course, is not measurement for measurement’s sake but to use analytics to react faster to problems and risk, reduce cycle times and improve overall supply chain management.”

Globalization might be linking people and things more rapidly, but supply chains have become more intricate, uncertain and unpredictable, said Patrick Sims, principal solution engineer at SAP. “Given that complexity, we have a lot of fragmentation in terms of our ability to optimize what we’re getting out of them from a practical perspective,” he said. “We would think that next-generation supply chains would need to be a lot more flexible and tolerant to this unpredictability and uncertainty. The supply chains no longer enjoy the status of static design. Instead, the supply chains are going to have to modeled and remodeled on a constant basis.”

The bottom line: Supply chain analytics that compile and compare data across varied environments can significantly improve supply chain management by reducing cycle times, alerting managers to areas of concern before they become problems and balancing supply budgets. To illustrate this, Sims and three of his colleagues at SAP showed how analytics could work in the real world.

“Everyone needs to get the most out of their supply chains and their supply chain networks,” Sims said. “Many of the practices that we’ve seen over the past several years have failed to deliver the promised value. Folks really need to be able to coordinate and organize their activities across that entire fragmented supply chain in order to optimize their performance.”

Weapon systems managers have additional need for organizing their supply chain portfolio because they’re working with public money and under tight regulations, he said.

“Obviously trying to optimize the supply chain so that we can make our aircraft and our tanks and our armor and our trucks live longer, if you will, is certainly something that’s key,” Sims said. “Weapon system managers have a very large number of complicated responsibilities, and many of those are really geared toward a varied and extensive business intelligence problem…. To ensure they can successfully carry out those responsibilities, they’re going to have to be able to organize their portfolio and automate as much as they can from an analytics and metrics standpoint, minimize the change management issues that we have in this very complex environment, and really [have] as much of a consolidated picture from a business intelligence standpoint on the entire supply chain as they can get.”

Minimizing Missing Links

Jim Long, director of customer business content at SAP Labs, used the example of a made-up company in the setting of an actual event – the earthquake in Japan in March. Kureha is a company in the quake zone that has a 70 percent global market share on a key resin used to make batteries for mobile devices such as laptop computers. Supply chain managers whose product list contains such devices or other components that go into the batteries could have a leg up on avoiding problems if they could know as it happened that Kureha was not only affected but so severely that it was shut down. Armed with this knowledge, managers can take swift action to avoid supply chain disruptions.

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– Patrick Sims, principal solution engineer at SAP

The goal of SAP Labs’ new Supplier InfoNet, billed as a cloud-based business social network to predict supplier risk and manage operational performance. The solution has three prongs: pooled KPI benchmarks that enable managers to compare their experience with that of other agencies, the ability to predict trouble using aggregated data and machine-learning tools, and access to the sub-tier supply base (i.e., your supplier’s suppliers) to pinpoint potential problems, Sims said. It collects key performance indicators, accessible via InfoNet’s compatibility with SAP BusinessObjects Business Intelligence Solutions and Supply Chain Management. It comes pre-delivered with more than 300 KPIs based on the Supply Chain Operations Reference (SCOR) model and can integrate with transactional systems that are within and outside SAP. The company’s enterprise information management tool set handles the extraction, transformation and loading from a variety of sources into one cohesive reporting data warehouse, Sims said.

“In our world, the defense world, the various issues of who’s going to let you have live access to what different systems are certainly at play,” he added. “We would certainly recommend from a corporate standpoint that the supply chain analyst would be able to get at least the minimum – some XML data files or Web service feeds that we’d compile into an ongoing, constantly running data warehouse.”

InfoNet crawls the Internet to aggregate data such as real-time news alerts, financial reports, government data, regulatory requirements such as the Weapon Systems Acquisition Reform Act of 2009, geographic coordinates and demographic figures such as which entities are women- or minority-owned.

“When it comes to supply chains, you’d be amazed what in the models can drive a positive or a negative prediction,” said Ron Needham, vice president of SAP Labs, part of the company’s Global Business Incubator Group. “We wanted as much attribute information as we could capture in order to predict more effectively.”

Customized Coordination

To use InfoNet, supply chain managers would set up a list of all the suppliers the agency works with and pair their KPIs with the agency’s own targets, said Vineet Seth, senior director of product management and marketing at the Labs. For example, if they agency aspires to a 95 percent rate for on-time delivery, any supplier who matches or exceeds that is shown on screen in green. Conversely, companies that rate 85 percent or less are red. Anything in between is yellow. Clicking on a company name brings up details statistics about the supplier in a box on the right-hand side of the screen.

Information flows through a series of notifications. The home page screen details urgent issues, including what supplier is in trouble, where it is located, the commodity it provides and a description of the problem, such as quality vs. quantity and severity.

Supply chain managers can customize their views in several ways. For instance, they can look at the chain as a heat map, so named “because I can very quickly see where the hot pockets are in my supply base,” Seth said. In that configuration, suppliers are depicted as blocks with the size based on how much you spend with or earn from them. Again, a traffic-light-colored system shows which suppliers are missing the KPI threshold.

Putting It All Together

The key feature of the analytics package, Sims said, is the ability to constantly model and remodel all the data in your supply chain based on your current business and economic realities. “It will provide you full visibility into the supply chain, give you the ability to generate your own metrics, identify the pertinent to you supply chain patterns and trends, and do that all based on, at least as a starting point, a variety of SCOR model metrics.”

In the future, SAP plans to tweak InfoNet so that it doesn’t focus solely on the negative but can also help forecast where supply needs might increase. “We sometimes tend to focus on bad things that are in the supply chain, but we also want to concentrate on positive news as well, because if you think about it the flip side of this supplier world is the customer demands side of the world, so can we predict customer demand,” Sims said.

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