SUPPLY CHAIN INSIGHTS

THE PREDICTIVE ENTERPRISE: PROGRESSING TOWARDS THE HOLY GRAIL

Business has a long way to go to fully tap the gold mine that is supply chain data…but leaders are making exciting progress

Hypothetical situation: You are responsible for your company's smartphone sales in the United States. On Monday morning, you wake up, power up your tablet, and using the latest data analytics, you instantly see a real-time analysis of your sales in every state, how much you're spending on transportation, and where you have lagging sales, stagnant inventory or other business "pain points".

Based on this information, you dynamically adjust your production schedule, the marketing budget, sales promotions, inventory positions and locations, transportation routing – and intelligently decide to back off in one area and ramp up in another. As a result, you capture new or potentially lost sales, speed up inventory flows, improve service, avoid product obsolescence and improve your company's bottom line.

If this scenario sounds futuristic, think again. This is what supply chain big data can do for an enterprise. Thanks to new data analytics and visualization applications, companies are rapidly embracing – and benefiting from – the new discipline called supply chain data science.

Supply chain data science above goes beyond simply monitoring transactions within the internal boundaries of the company. It also includes gathering, analyzing and incorporating external sources of information, both structured and unstructured, into the mix. This covers everything from traditional visibility report-backs from the supply chain, to alternative sources of data - like news feeds, weather predictions and social media.

By bundling these internal and external data sources, and layering on sophisticated analytics combined with human "interpreters", leading companies have begun to evolve toward a more predictive business model. What does this mean? Rather than manage the enterprise based on weeks-old information – and make decisions based on old data – organizations can now gather and analyze supply chain data in real time, mine that information for patterns, trends, and problems, and use this intelligence to "predict" such critical variables as demand, supplier risks, material shortages, consumer behavior trends and so on.

"We're starting to combine information in different ways to gain new insights," reports Gary Keatings, Vice President, Solutions Design, DHL Supply Chain. "That's data science. It requires three key skill sets: technical and functional knowledge around the [functional] domain (e.g., warehousing, transportation, inventory, finance, IT); and then a third skill in mathematical knowledge of algorithms to combine data into new insights. All of this is based on collaboration – between the domain experts and the data scientists."

Just the beginning

Where is industry on the evolutionary curve toward the predictive enterprise? "We are right at the beginning," says Keatings. "But we are climbing up the value chain…quickly."

Moving towards a predictive operating model requires implementing some key foundational steps. The first is assuring the accuracy, completeness and timeliness of supply chain information – and getting to an empirical "single version of the truth" of what's going on in the business. This is no small undertaking, given the complexity of supply chain data feeds combined with multiple disparate information systems that are typical in global companies.

The second foundational step lies in implementing the technologies and methodologies for blending this information with value-added insights, to create a current-state supply chain dashboard. This dashboard shows what's working, and what's not in the supply chain. The "what's not working" part gets plugged into messaging and alert protocols tailored to multiple device platforms – tablets, smartphones and the like – so managers can always stay on top of the current state. This intelligence 'feed' enables better decisions made more quickly and so increases the agility of the enterprise in responding to business conditions.

"We can tap into our messaging gateways, take shipment dispatch and request information, and harvest that data to provide near real-time metrics and key performance indicators (KPIs) about on-time shipping and on-time delivery. So we take raw data, run it through a pattern recognition application and turn it into KPIs for our customers."

The early payoff

Organizations that have mastered the foundational elements of supply chain analytics report a high return on investment across the enterprise. According to Gartner Inc., better analytics produced tangible benefits in such areas as product quality, revenue, asset utilization, product launches and order cycle time.

Much work remains to be done to fully move toward a predictive operating model. But the payoff for tackling this task is powerful - higher margins, increased profits and sustainable competitive advantage. "It becomes a question of science," says Richard Sharpe, CEO of software solutions company Competitive Insights. "Does the company want to move from decisions partially supported by data and opinions – a kind of educated guessing - to an environment where decisions are solely based on real-time facts coupled with business insight? That question should drive the whole conversation."

To read our white paper, **The Predictive Enterprise: Where Data Science Meets Supply Chain**, please click here.