

AI and Analytics: The Importance of Visualization and Data

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If the concept of “visualization” seems like a new age neologism that’s too far out for today’s supply-chain managers to fully embrace, consider this: tomorrow’s manager will regard any company that hasn’t started on this strategic journey to be hopelessly antiquated.



This is particularly true when it comes to capturing big data for deep-dive analytics, says Karin Bursa, executive vice president of Logility.

“Major universities and colleges are producing newly minted, tech-savvy graduates to replace Boomers at a steady rate every year,” she says. “This cultural transition is placing those young people with the business acumen to take on supply-chain leadership roles that are reliant on high-

technology adaptation across all major industry sectors.”

Daniel Bachar, product marketing director of advanced analytics for Logility, agrees. He says these “digital natives” will be empowered by their companies to take a more creative approach when it comes to predictive forecasting and proactive solutions.

“By automating decisions where we can, and providing the needed analysis to determine the best ap-

proach, we are able to free up the personnel to implement the hands-on work and think about the business more creatively,” he says.

The strong visualization of meaningful data is also crucial to a business’s success with artificial intelligence and analytics. It creates an engaging user experience that presents information in a highly intuitive way.

Given the transition in the current supply-chain talent pool, it’s

important to keep up with the digital natives entering the workforce and their expectations.

“Young professionals will navigate data and scenarios in a different manner compared to a company veteran who has been in that role for 20 years, and grew up with data presented in a less granular way,” says Bursa. “Visualization of data and serving information in a more intuitive way is key. This is done by tapping into new data sources and leveraging artificial intelligence and machine learning.”

As one company realizing tangible ROI and business value using this approach, Bursa cites Tillamook, the farmer-owned dairy co-op founded in 1909. This iconic manufacturer was able to increase forecast accuracy from 70% to 85%, while ramping up fill rates from 95% to 99%.

Furthermore, says Bursa, “inventory turns were up by 75%, and there was measurable reduced spoilage. Since 2017, they saw a decline in obsolescence of finished goods by \$3.4 million.”

Overcoming Resistance

Industry analysts believe supply-chain managers might finally be developing the focus needed for digitization of networks and operations.

According to the consultancy Capgemini SE, most large organizations today grasp the importance of supply-chain digitization, though some have spread their investments too thinly and are struggling to scale pilot initiatives.

A recent Capgemini report surveying 1,000 supply-chain executives

found that while half consider digitization to be among their top three corporate priorities, 86% are still struggling to get projects beyond the testing stage. This represents a clear gap between expectations of what supply-chain digitization can deliver, and the reality of what companies are currently achieving.

Because of that lack of focus, only one in seven organizations successfully scale initiatives from a pilot stage, says Cyndi Lago, Capgemini’s vice president of supply chain. “Transformation efforts need to be driven by C-suite leadership and senior management, who advocate and provide strategic focus on objectives and what to prioritize.”

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Furthermore, she says, recent market disruptions could serve as motivation for a stronger focus on deploying key initiatives at scale, and securing leadership buy-in for the transformation.

“We might start seeing increased investment as leaders realize supply-chain digitization is integral to achieving wider business objectives — for example, to increase

transparency and improve customer satisfaction — that help mitigate disruptions,” concludes Lago.

Solving Business Problems

Meanwhile, the adoption of machine learning is gaining traction, as organizations encounter exponential growth of data volumes and advances in computational infrastructure.

This trend delights Bachar, who notes that it can solve business challenges such as ensuring personalized customer treatment, making supply-chain recommendations, engaging in dynamic pricing, and allowing for the precise allocation of inventory based on customer behavior.

“Because ML uses mathematical models to extract knowledge and patterns from data,” he says, “it can be a powerful tool.”

A digital twin is another vital component of AI and data analytics. It creates a digital representation of physical capabilities that is used to model and evaluate multiple scenarios for businesses in a proactive fashion across multiple time horizons. By applying predictive and prescriptive analytics, businesses can determine what’s likely to happen and take appropriate action, in the process transitioning from a reactive to a proactive approach.

The technology isn’t hampered by a generation gap. “One doesn’t have to be young to realize the huge advantages this has over multiple spreadsheets,” says Bachar. “Even veteran supply-chain managers know by now how prone to error they are.”

Furthermore, spreadsheets are incredibly time intensive. Having to

drill down to the fine details of a supply chain using four or five iterations can take forever, while everyone in management must buy into the conclusion — even if it's wrong.

AI Is Essential

Tim Payne, vice president of supply chain planning for Gartner, argues that AI should be at the heart of any company's digital planning roadmap.

"It's the basis by which planning decisions can be horizontally and vertically aligned, which is key in supply-chain planning," he says. "At the same time, it supports the automation of these planning decisions to various degrees."

Payne adds that companies must work with solutions providers to develop a "twin" model, while continuing to collaborate on its refinement.

"This is also important if a company wants to move into using AI to support prescriptions while determining the future it wants to pursue," he says.

Supplier scorecarding is beneficial for manufacturers and suppliers of both finished goods and raw materials, allowing them to cross-reference interactions between current and potentially new partners. As a result, says Bachar, "There's constant and ongoing exposure across the supply chain."

While it might seem odd that the consumption of data can be both intuitive and conventional, Bachar says it makes perfect sense when visualizing. "Managers are learning to optimize data in a number of new ways, while trying to arrive at a single version of the truth," he adds. "We now realize that you can

have a ton of data, but it doesn't always add up to a good story."

Nor does it provide much of a snapshot. "A picture often paints a thousand words," Bursa says. "By modeling a digital twin, supply chain managers can relate the narrative to decision-makers. A complex and sometimes multiple set of ideas can be conveyed by a single still image which illustrates its meaning or essence more effectively than a mere verbal description."

For Bursa, the old adage "time is money" still applies. "When evaluating a transport or supply-chain offer based on price, you need to be especially vigilant," she says. "With an offer that seems like a great bargain initially, there might be added expenses lurking in the background."

For example, she says, a procurement officer might look at an offer from both a tactical and strategic perspective that goes beyond the mere objective of getting a good price.

It's vital to employ multiple sourcing scenarios, says Bachar. "By drilling down to multiple trend horizons in any given supply chain, you can determine if price optimization can be sustained over time. Given the external competitive forces lurking out there, this is crucial information."

The narrative ends with "data storytelling" as an alternative to spreadsheets, which "are time consuming and often lead to the wrong conclusions," says Bursa.

In a single document, a supply-chain manager should be able

to measure, at a glance, statistics on sales items quantified by margin, quantity, and billings. At the same time, sales by customer type should be accompanied by a sales and budget forecast.

"That's what we mean by 'visualization,'" concludes Bursa. "The whole picture that emerges is designed to marshal forces for inventory control, dollar value, and key features of sales and operations planning. It gives the company's entire executive team a clear evaluation of volume metrics, overall margin of assets, and how to place human resources in a pivotal position."

Resource Link:

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