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The Top 5 Things You Need to Know About Supply Chain Management

Supply chain management is changing. As industries look to the future, your business needs to stay ahead.

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The evolution in technology impacts every aspect of [supply chain management](#)—from how you source materials and services to how you deliver goods to your customers. How do you decide which technology could help you maintain a competitive edge?

“The challenge is to sift through the sea of hype that is out there around these technologies and identify technologies that are commercially viable,” says Andy Moses, senior vice president of global products at [Penske Logistics](#), a wholly owned subsidiary of Penske Truck Leasing and a global provider of [supply chain management](#) and logistics services.

Moses says companies need to first adopt operational technology based on their core offerings.

“For example, if you are operating a warehouse, you need a warehouse management system; if you are operating a fleet, you need onboard telematics,” he says.

There's a danger in becoming very excited about technology and forgetting what problem it's trying to solve, says Joel Beal, CEO of [Alloy](#), a San Francisco software company specializing in predictive analytics and demand forecasting for the supply chain.

“You should narrow down on the exact business problem you want to solve, and you need to start small,” he says. “Start with the highest-value opportunity.”

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1. Improving Forecasting With Predictive Analytics

As data first moved from analog to digital form, reporting capabilities greatly improved. Now, artificial intelligence can help businesses become forward- rather than backward-looking, by creating better-demand forecasts with predictive analytics.

“Based on information you know historically and what you’re doing now, and knowing the causal relationship, you can try to better forecast the future,” Beal says.

Research company Markets and Markets estimates the [predictive analytics market to more than double](#) between 2017 and 2022, growing from \$4.56 billion to \$12.41 billion. The company says increased interest in “advanced analytics for future estimations” is a key factor.



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—Joel Beal, CEO, Alloy

The next evolution in advanced analytics is prescriptive analytics, where some of the decision-making based on predictive analytics becomes automated.

“I think every company is somewhere along that journey [of using data], but my experience is that the vast majority are still struggling with collecting the data and being predictive,” Beal says.

2. Managing Risk With Artificial Intelligence

Businesses are adopting predictive analytics for [supply chain management](#) aspects such as sourcing and logistics. But they can also use data to control a variety of risks.

Richard Parke, head of international supplier organization for global supply chain risk management company [Avetta](#) in Orem, Utah, says machine learning—an application of artificial intelligence—can help extrapolate key trends and establish baselines to reduce risks. For example, Avetta's web-based platform connects more than 300 companies with 60,000 suppliers' safety history, track records, performance statistics and other data points.

“We aggregate the data across industries to isolate trends in safety performance and establish baselines and norms, and use predictive analytics to identify which types of trends and approaches can reduce and eliminate accidents,” he says.

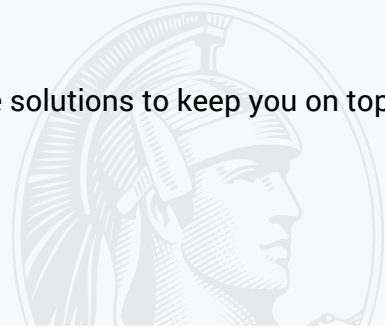
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In financial supply chain management, businesses can use the same technology to help identify partners who have long-term financial stability, and will pay their invoices and stay in business.

“If you bring in contractors and suppliers that don’t have the longevity or financial resources to stay within the supply chain, it becomes very disruptive to the supply chain operations,” Parke says. “Ensuring they have financial viability and enough capital to complete the job is very important.”

3. Boosting Productivity With the Internet of Things (IoT)

Employee productivity is among the supply chain management problems that technology is trying to solve.

“Devices and sensors [the Internet of Things] are creating the ability to manage assets and people more productively, which is important from a cost perspective,” Moses says.

Take the idea of smart goggles. Embedded software in IoT-enabled goggles would visually highlight the bin location area. It turns red if the employee reaches for the wrong bin, and green for the right one.

“You can use robotics, but what about [unpredictable volume spikes](#),” says Casey Adams, president of supply management company [Visible CSM](#), whose research and development warehouse is testing if those IoT goggles scale commercially.

Adams says that technology like IoT goggles could allow a company to quickly hire unskilled workers after an unpredictable event, like a jump in a product sale due to a social influencer posting on social media.

“This influencer no one has control over can drive some pretty intense volume spikes,” he says. “The retail world was not made for that—they usually knew what was happening.”

4. Increasing Visibility With Blockchain

The supply chain is incredibly complex—Beal points out that more than 200 companies could be involved in something as simple as a tube of toothpaste sold at the supermarket. As physical goods move from one destination to the next, tracking that movement across multiple companies, and often even within the same company, is a major challenge.

Some see blockchain, or distributed ledger technology, as an emerging solution. The adoption is in the very early stages—[Gartner predicts](#) that 90 percent of blockchain initiatives through 2020 will be in the proof-of-concept stage.

Loudon Owen, chairman and CEO of [DLT Labs](#), a Toronto, Ontario, blockchain startup, says the technology solves the challenge of having large-scale amounts of information in different places, securely, at the same time.

One application is in the [ethical supply chain](#). Owen brings up mining as one example.

“Whether you’re the miner or mining company, the transportation company, processing plant, trading company, manufacturer, distributor or consumer, you want to know if [the product] is ethically sourced, and that information needs to be shared, otherwise it simply doesn’t work,” he says. “Distributed ledger technology empowers everyone up and down the supply chain because there’s trust and transparency.”

5. Making the Tech Scale to Your Needs

Beal believes that many small businesses that want to take advantage of data-related technologies are ahead of the game.

“The bigger companies have the larger investment but it’s harder to be nimble and change the culture they’ve had for decades,” he says. “One of the strengths that younger companies have is they’re data-driven from the start. It’s in their DNA.”

How can you sift through the hype as you’re contemplating some of the emerging technology? Adams says smaller and mid-market businesses need to think in terms of return on investment and scalability.

“It helps to take a look at everything that can be done,” he says. “But just because it can be done doesn’t mean you should do it.”

Photo: Getty Images

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