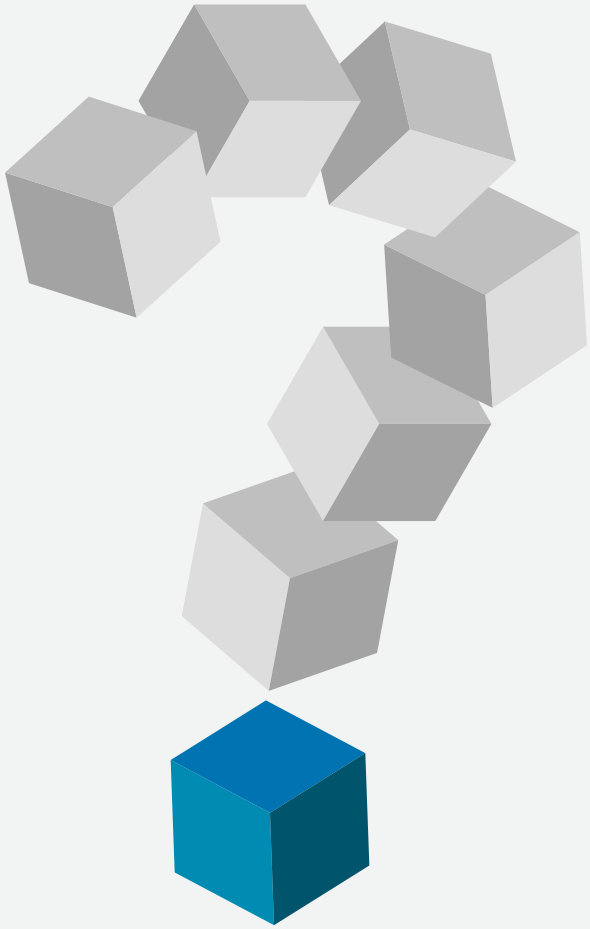
GEP® INSIGHT DRIVES INNOVATION

THE COGNITIVE SUPPLY CHAIN

WHAT DOES IT TAKE TO BUILD ONE?



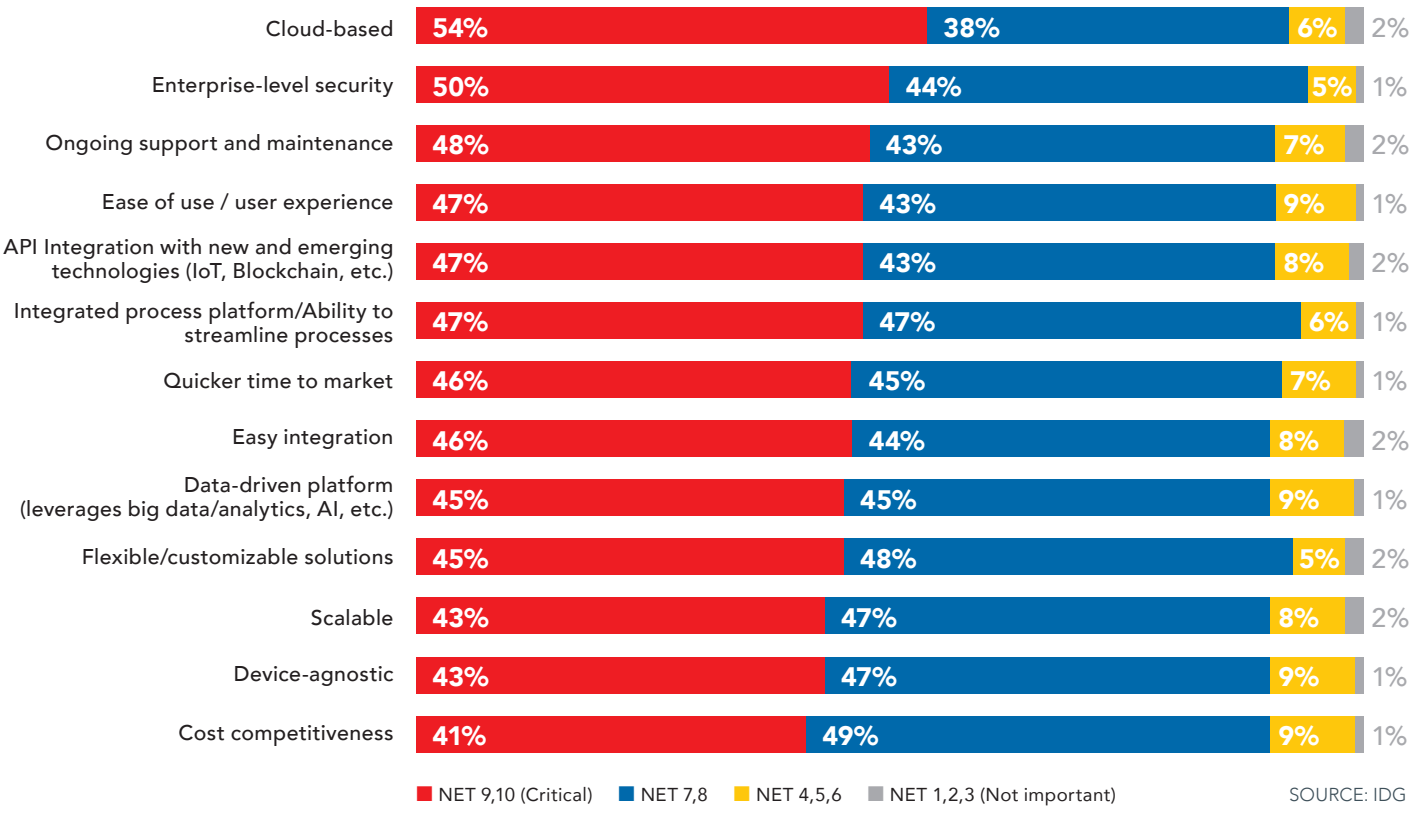
CIO FROM IDG

On the supply side of the equation, data is coming from partners' ERP systems as well as Internet of Things (IoT) sensors on manufacturing equipment and in-vehicle GPS systems. Organizations are also tapping into new sources of information such as weather reports and news about labor unrest; raw materials shortages; and, nowadays, countries' gradual "reopening" schedules and activities.

Managing all this big data involves tackling "**four Vs**":

- **VOLUME.** During 2018 alone, digital storage platform suppliers added more than 700 exabytes of storage capacity to the worldwide installed base, according to IDC's Global StorageSphere report. The data explosion includes a large volume of supply chain information from warehouses, financial and procurement apps, logistics and distribution companies, and materials suppliers, among others.
- **VELOCITY.** Data is entering organizations' storage and processing platforms at lightning speeds, straining systems that must sort, direct, and extract value from this data.
- **VARIETY.** Structured data can come from a wide variety of ERP, CRM, and financial systems and can be coded in a range of formats. At the same time, unstructured data—from documents to emails and video streams—also plays a bigger role in SCM operations than it did previously.
- **VERACITY.** Data is of little value if it is inaccurate, out of date, corrupt, or suspect in some other way. With SCM data coming from many different sources, confirming its overall veracity is essential.

IMPORTANCE OF CHARACTERISTICS WHEN EVALUATING SOLUTIONS TO MEET DIGITAL SUPPLY CHAIN OBJECTIVES (10-POINT SCALE)



SOURCE: IDG

CLOUD COMPUTING AS THE FOUNDATION

The solution to the data collection, transformation, and analysis challenge—and to many other SCM needs—is increasingly based in the cloud. Respondents to a recent IDG survey on supply chain transformation indicated that "cloud-based" was the most important characteristic for evaluating SCM solutions.

For some, the cloud will initially be used to store the huge amounts of data they're collecting in massive data lakes, which are emerging as a key feature of the new supply chain network. Companies are also tapping cloud-based services to transform and analyze the data found in those broad and deep data lakes.

In essence, "anywhere/anytime" cloud services can provide the global reach and open-ended scalability and power that today's SCM operations require. Those services can also help provide the high-level aggregation and analysis that legacy ERP solutions cannot.

The central company's ERP system often can neither collect data from supply chain partners' systems or ERPs nor aggregate that data to produce a common, end-to-end view. Organizations need solutions that can move beyond the limitations of individual ERP systems without disrupting the existing IT infrastructure.

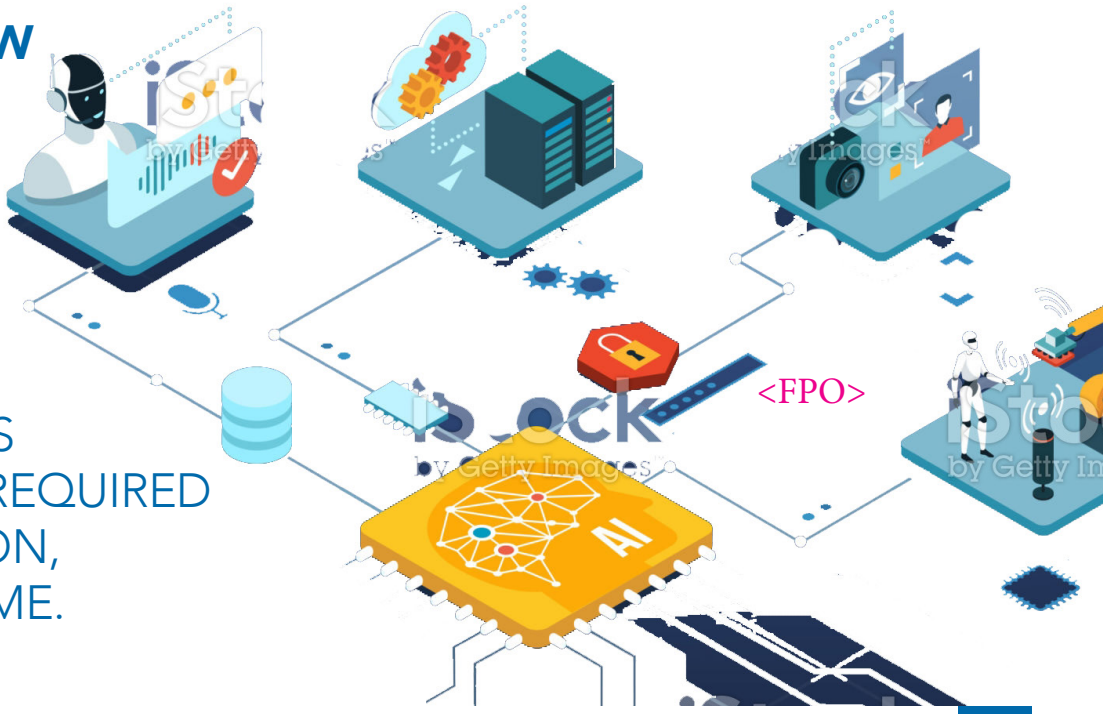
Cloud-based SCM services can deliver cross-supply-chain connectivity and visibility and can offer the ability to collect and normalize data flowing in from a wide variety of legacy ERP systems and other applications.

BIG DATA ANALYTICS, ENHANCED WITH AI AND MACHINE LEARNING

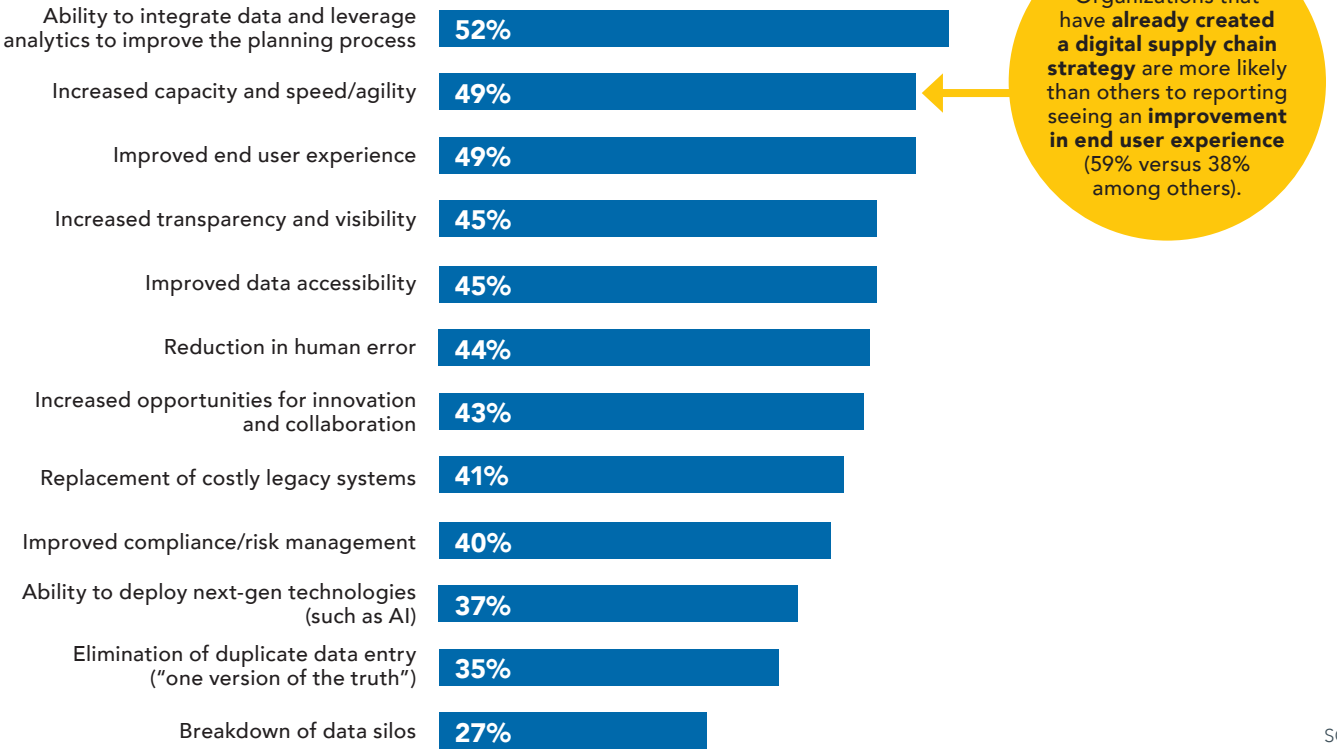
Via the cloud, data from across the supply chain and from customer purchases can be stored in data lakes, mined, and analyzed to understand historical trends and predict future demand.

Many organizations are already exploiting this capability. When asked what benefits were accruing from their adoption of a technologically advanced supply chain strategy, 52% of the IDG survey respondents cited the "ability to integrate data and leverage analytics to improve the planning process." In fact, that benefit was their top choice from a list of a dozen benefits.

BY ADOPTING NEW DIGITAL TOOLS, INCLUDING AI AND MACHINE LEARNING, ORGANIZATIONS CAN AUTOMATE MANY OPERATIONS THAT PREVIOUSLY REQUIRED MANUAL EXECUTION, EXPERTISE, AND TIME.



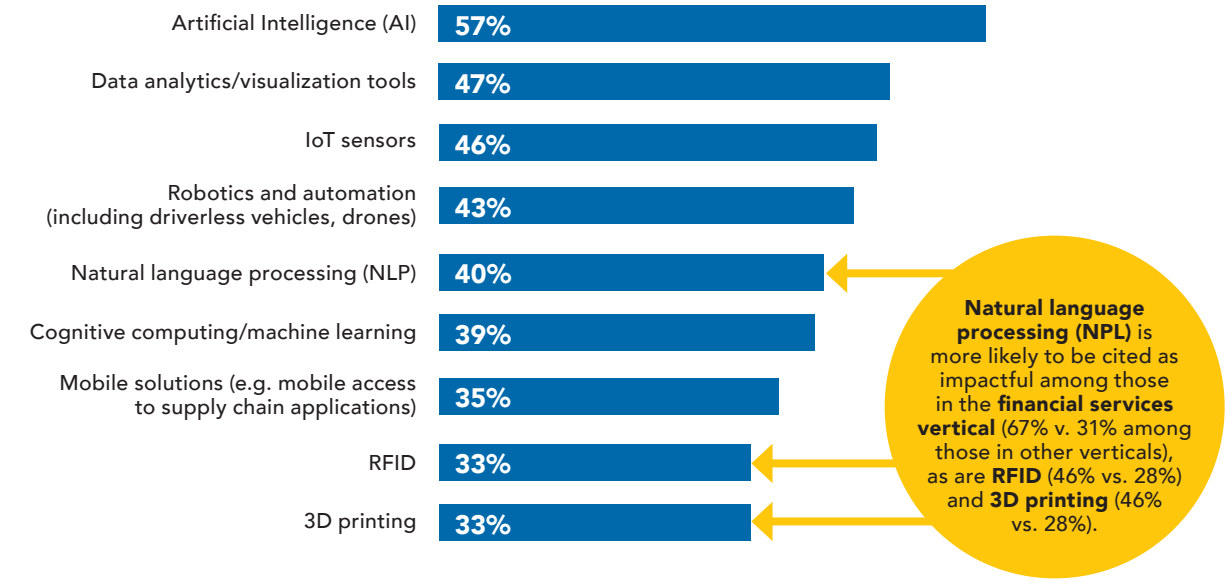
BENEFITS EXPERIENCED TO-DATE FROM EFFORTS TO ADOPT A DIGITAL SUPPLY CHAIN STRATEGY



SOURCE: IDG

Survey respondents also expect data analytics and visualization tools to remain critical elements of their SCM operations: Nearly half (47%) said these technologies would have a big impact on their supply chain in the coming two years.

EMERGING TECHNOLOGIES EXPECTED TO HAVE THE BIGGEST IMPACT ON THE SUPPLY CHAIN (SELECT FIVE)



SOURCE: IDG

Even so, the expected impact of data analytics and visualization tools ranked second in this regard, trailing a technology whose near-term impact is expected to be even greater: artificial intelligence.

In practice, AI-associated technologies such as machine learning and pattern recognition will work hand-in-hand with predictive analytics.

But the intersection of AI and the supply chain will extend beyond predictive analytics and demand forecasting. AI will help manufacturers automate their factories and warehouses by powering robots, managing inventories, and identifying process inefficiencies, for example. AI will also transform logistics and transportation operations by guiding self-driving vehicles and mapping the least congested, most direct routes. In short, AI will become the primary engine powering the cognitive supply network.

COMPUTE- AND DATA-INTENSIVE TECHNOLOGIES WILL FUNCTION WITHIN A CLOUD-BASED INFRASTRUCTURE, GIVING COMPANIES THE SCALABILITY, STORAGE, AND COMPUTATIONAL POWER THEY NEED WITHOUT INVESTMENT IN ON-PREMISES INFRASTRUCTURE AND SKILL SETS.

TRANSFORMING THE SUPPLY CHAIN WITH ADVANCED TECHNOLOGIES

GEP, a global provider of procurement and supply chain management software, solutions, and services, offers organizations all the necessary elements to plan and execute digital supply chain transformation. The company's customer base includes more than 450 Fortune 500 and Global 2000 companies representing more than 30 industries and vertical markets worldwide.

Along with consulting expertise and numerous managed services, GEP offers a range of software solutions that leverage cutting-edge technologies and capabilities. For example, GEP NEXXE™ is an AI-powered, cloud-native digital supply chain management platform that helps enterprises respond to rapidly changing market dynamics with real-time visibility and control over the end-to-end supply chain.

The company offers a comprehensive supply chain planning suite of tools that generates goal-optimized plans to achieve business outcomes such as profitability and customer satisfaction. GEP's next-generation supply chain planning solutions improve forecasting, reduce risk, boost supply chain agility, and drive business transformation across the enterprise.

For more information about GEP, visit **www.gep.com/software**.

CREATING THE STRATEGIC COGNITIVE SUPPLY NETWORK

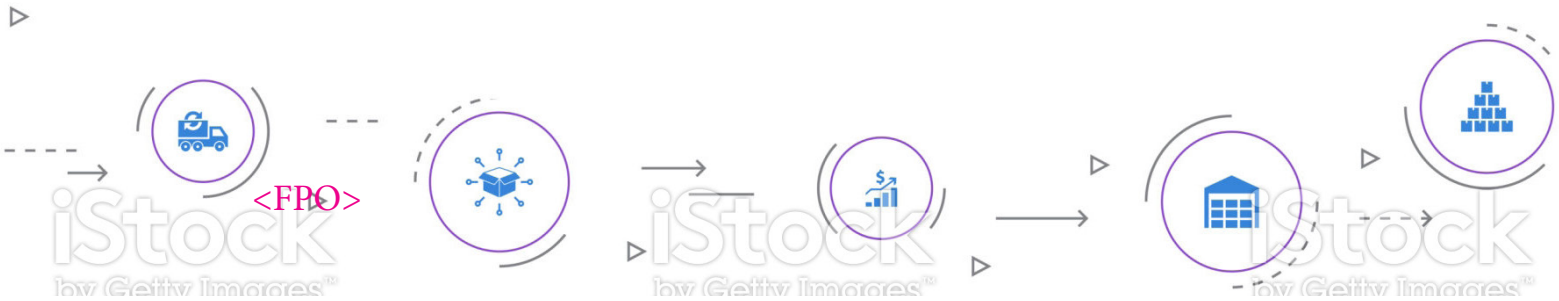
For many companies, creating a cognitive supply network is critical. But realizing that objective requires adopting the complementary and tightly integrated technologies outlined above.

By definition, the cognitive supply network depends heavily on predictive analytics, AI, and machine learning to speed, inform, and automate SCM operations. These compute- and data-intensive technologies will function within a cloud-based infrastructure, giving companies the scalability, storage, and computational power they need without investment in on-premises infrastructure and skill sets. In addition, cloud-based services can help manage the "four Vs" of data to make sense of that data, gain visibility and control across their supply chains, and perform a wide range of other critical functions.

THE BOTTOM LINE

Companies can adopt cloud, analytics, AI, and the other elements of an SCM technology framework at different paces, but they can't afford to sit still. If nothing else, the impact of COVID-19 has made that clear. The sooner organizations build cognitive supply networks that meet ever-rising customer expectations and optimize their highly strategic supply chains, the better for their near- and long-term business prospects and for their ability to weather unanticipated disruptions.

For more information on how GEP can help your organization transform its supply chain, visit www.gep.com.



How AI will revolutionize inventory management

AI is already optimizing every stage of inventory management and supply chains for early adopters. Here's how your organization can get started.

By Mary Branscombe
CIO | JUN 2018

Walmart watches the weather to decide what food is going to sell better. Predictions powered an 18 percent increase in sales by having more steaks in stock when it's warm, dry, cloudy and windy, and beefing up burgers when it's hotter and less windy. High temperatures with a light breeze sell more salads; clear sunny days sell more berries. But you don't have to be a retail giant to use AI to improve your supply chain.

Predictive analytics and remote sensors tell di`stributors when a fridge needs restocking with soda or a coffee vending machine needs topping up (avoiding the fine that Mars Drinks levies when a product is out of stock). Lakeba's Shelfie robots will soon cruise the aisle at UK supermarket Co-op using image recognition to detect when products are sold out or shelved in the wrong place.

An online fashion retailer who deals with hundreds of suppliers uses image recognition apps on smartphones to check exactly which style of blue dress arrived in a shipment so they know what's in stock.

On the other hand, Jet.com is very keen to know what's not in stock, Director of Engineering Scott Havens told CIO.com. "Suppliers might say they have ten items in stock but they only have eight," which leads to unhappy customers who can't place an order when they expected to, he says. If an item isn't in stock, Havens doesn't want the site to even show up in a search. "In terms of customer experience, not talking to a customer is better than talking to them and disappointing them."

AI's spread to every corner of industry

Havens' team uses machine learning to track how accurate different suppliers are at reporting which products they have in stock; the numbers can be wrong because they don't update them often enough or because they just don't give accurate reports. The machine learning system has halved reject rates for those merchants, he says, giving Jet.com a better view of its supply chain.

Thinkstock

Windshield replacement service Autoglass is using image recognition in its phone app so customers know whether the chip in their windscreen can be repaired or needs replacing. Customers like knowing what the cost will be, but Autoglass knows whether a store can do the replacement from stock or will need to order the windshield and schedule a fitting once it arrives. The app is already handling 2,500 images a week with over 80 percent accuracy, and the company is looking into using it to assess whether advanced driver assistance systems will need recalibrating after a repair or replacement.

Car dealerships are turning to AI to decide which cars to stock and who to advertise them, Sam Mylrea, CEO of PureCars, told CIO. "Unmoved inventory sitting on the lot costs hundreds of dollars each month in interest. By using AI, dealers can better understand which cars to stock based on consumer behavior and past purchase patterns. Armed with these insights, they can use personalized marketing outreach to target the right customer at the right time."

Click here to read the rest of the article on CIO.com.

Blockchain/IoT integration accelerates, hits a "sweet spot"

IoT and blockchain may be a natural fit, but it will still take five to 10 years before kinks are worked out and the two technologies can reach their full potential, according to Gartner.

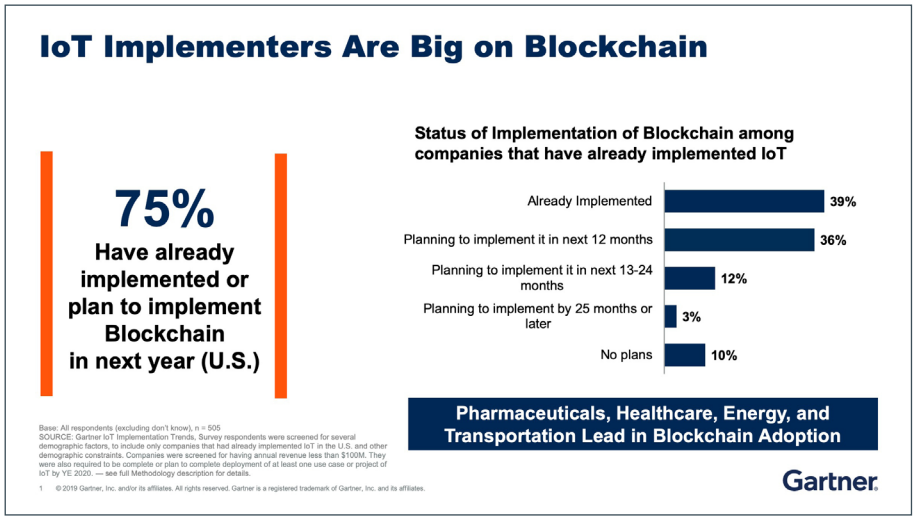
By Lucas Mearian
Computerworld | DEC 2019

Thinkstock

Three-quarters of companies implementing IoT have already adopted blockchain or plan to use it by the end of 2020, an indicator of the growing connection between the two, according to a survey of 500 U.S. companies by Gartner.

While the marriage between the two technologies has been expected to be crucial for industry digital transformation, the adoption rate is happening at a "much faster pace than expected," Gartner said.

"Among the blockchain adopters, 86% are implementing the two technologies together in various projects," Avivah Litan, a Gartner vice president and report author, wrote in a blog. She called IoT integration "a sweet spot" for blockchain, the much-hyped distributed ledger technology.



Among survey respondents, 63% indicated that the top benefit of their combined IoT/blockchain projects is increased security and trust in shared multi-party transactions and data. Fifty-six percent saw the top benefit as an increase in business efficiency and lower costs. Only 43% expected higher revenues and increased business opportunities, and just 37% cited improved constituent or participant experience.

Gartner surveyed C-Suite executives, as well as directors and senior level managers. Ninety-two percent of respondents worked within an IT organization and 62% were CIOs or CTOs.

Blockchain acts as an automated communication layer between IoT sensors as well as a repository for the data they produce and upload. For example, IoT devices in shipping containers can track not only location but monitor temperature, vibration and whether a package has been tampered with.

Click here to read the rest of the article on Computerworld.com.

4 ways big data will shake up supply chain systems

Big data analytics can provide visibility into where things are, where they should be, and what's gumming up the system.

By Jen A. Miller
CIO | JAN 2018

Big data is the buzzword we can't avoid, but for good reason: it's changing the way a lot of businesses operate, and will continue to do so, especially within the supply chain world.

Sixty-four percent of supply chain executives consider big data analytics a disruptive and important technology, according to SCM World, even though it's still a relatively new application of the technology.

"Most large Fortune 500 companies have been using big data for one to three years," says Jeff Saltz, associate professor at Syracuse University's School of Information Studies. "They're experimenting some and getting significant value."

But companies like Amazon and Apple have budgets beyond the moon. What about companies that don't fall within the Fortune 500, let alone the 1000 or 2000?

Here are five ways big data will change supply chain as we know it, and how to get your company there -- even if you're met with a chorus of "What we have now works!" because it probably won't for the business climate 10, 15, 20 years ahead.

1. Boosting visibility

Big data analytics can provide visibility into where things are, where they should be, and what's gumming up the system — assuming the data is the right stuff.

Apple

This can save money at every point in the process, especially when it comes to finding errors and fixing them before they become multi-million dollar headaches. "If we make the assumption that something happens very early in the supply chain, that will have a ripple effect," says Barry Pellas, CTO and chief business technologist at IT consulting firm PointSource.

Big data can also help companies with the planning and execution parts of that supply chain, says Melanie Nuce, vice president of corporate development at standards organization GS1 US, by letting companies know where their stuff is, and where it should be.

Click here to read the rest of the article on CIO.com.