

Operations Practice

The human side of digital supply chains

On its own, technology won't be enough to fix your supply chain.

by Matt LaBombard, Scott McArthur, Ali Sankur, and Ketan Shah



Digitization has become the dominant theme in discussions about the future of supply chains. Wherever there is a problem, there is the promise of a technological solution, using some combination of artificial intelligence or machine learning, big data, automation, and the Internet of Things.

Talking about technology suits everybody. On one side of the room, there is a dynamic and fast-growing cohort of technology vendors. When we studied around 300 supply-chain technology companies, we found that they make much of features like AI and machine learning in marketing materials. In the overwhelming majority of cases, however, these are either niche features or of unclear value to the end user. On the other side of the room, there are chief supply-chain officers hungry for a bold vision that will grab the attention of the board.

There's no doubt that technology is set to have a big impact on every part of supply-chain operations, from planning to logistics. By focusing so much attention on digital solutions, however, companies may inadvertently be ensuring their failure. That's because the technology-first approach ignores an inconvenient truth: the intensely human nature of the supply chain.

Technological optimists paint a bold picture of supply chains that are so highly digitized that the function itself disappears. They envision a world in which forecasting, planning, and execution are fully automated and seamlessly integrated, where systems adapt to solve problems and respond to changes in supply or demand without human intervention.

Such supply chains might eventually become a reality, but today's digital solutions must be integrated into today's supply chains. And today's supply chains are wrestling with the same problems they have faced for decades: poor visibility, uncertainty, mistrust among functions

and stakeholders, biased behaviors, misaligned incentives, and slow decision making.

One technology company, for example, created consensus estimates of demand twice a month using a mix of historical data, sales-team estimates, and long-term revenue predictions. The process worked well, but fear of capacity shortages meant the company routinely inflated its own demand forecasts. The result was significant oversupply, low asset utilization, and high costs.

Problems like these won't be solved by algorithms, however smart they may be. Worse, left unaddressed, they could destroy much of the potential value of other digital solutions. The most sophisticated demand forecasting system is of little use if commercial teams and production planners ignore its outputs. The value of systems that can update plans in (close to) real-time depends on the ability, and willingness, of the rest of the organization to act in response to those changes.

Looking at digital through a human lens

Recognizing the critical role of people doesn't invalidate the use of supply chain technology. On the contrary, we believe that it provides companies with a way to expand and accelerate the impact of their digital investments. In broad terms, technology can support supply chain operations in three ways. First, it can provide more data, and new insights from existing data—for example, by using electronic point-of-sale data in planning and forecasting. Second, it can automate previously manual tasks, such as with electronic order-taking or robotic warehouse automation. Third, it can help companies address the human problems outlined above, by enabling greater trust, better communication, and enhanced collaboration across the organization.

In our opinion, this third set of benefits is the largest untapped and overlooked source of value in modern supply-chain improvement. Better still, the technological solutions to those problems are often cheaper, simpler, and easier to implement than most

companies expect. Let's look at three important examples.

Visibility

In almost all supply-chain problems, the first and most fundamental requirement is visibility. Despite advances in technology and multi-million-dollar IT budgets, few companies have a full picture of their supply-chain operations. That lack of a “single source of truth” leads to widespread waste, arguments, and suboptimal decision making. Indeed, while some vendors prefer to talk about powerful automation capabilities and artificial intelligence, improved visibility is the main value proposition of many of today's supply-chain software offerings.

Supply-chain visibility doesn't require advanced optimization engines or sophisticated algorithms. It can be achieved by simpler, cheaper solutions, provided they do three things well. First, they must connect and consolidate data from multiple sources. Second, they must clean and organize that data to provide a single, reliable source of truth. Finally, they must present that data in a digestible way. The last point is crucial, and often underestimated. Supply-chain visibility tools work only when the people who need the data can access it, without advanced database skills or support from IT specialists.

Management infrastructure

Digitally-enabled supply chains don't require a host of new metrics or KPIs. Companies that want to speed up their supply-chain management process

can benefit from a new agility or responsiveness measure—such as number of planning cycles per month, or response time to supply and demand shocks. Broadly, however, the metrics that matter are the same as always: service, inventory, and capital utilization.

More important is the way companies use their supply-chain metrics. Here, even the simplest digital tools have a big impact, simply by standardizing and automating the generation of KPIs. First, digitization engenders trust. That can transform the productivity of inter-functional conversations at a stroke, as executives are less inclined to argue about the validity of the numbers, leaving more time to work on improving them.

Second, automatic KPI generation speeds up decision-making, making supply-chain management more responsive. Instead of conducting a postmortem analysis on numbers produced at the end of the month, supply-chain managers can spot issues as they arise, which might allow them to take timely corrective action.

The third big benefit of digitally generated KPIs is that it helps problem solving, improving the quality of the decisions made by planners and supply-chain managers. Digital tools allow them to drill down into the data with ease, so when something goes wrong, they can quickly find out where, and often why. That helps them not only fix problems faster, but also take steps to prevent their recurrence.

Supply-chain visibility tools work only when the people who need the data can access it, without advanced database skills or support from IT specialists.

Finally, companies can use real-time KPIs as the basis for forward-looking, proactive management of supply-chain exceptions, without needing elaborate and costly digital tools. Just combining inventory, production, and demand forecast data in a simple spreadsheet can often be enough to uncover issues such as upcoming shortages or the accumulation of excess stock.

Cross-functional collaboration

People from different functions and parts of a business find it easier to work together when they work at the same cadence, use compatible processes, and base their decisions on the same data. Technology makes that goal far easier to achieve across large, complex organizations.

Take the example of one major US consumer-goods company. Decades of growth through acquisition had resulted in a highly decentralized supply-chain structure, with more than 800 planners in around 50 locations and a wide variety of legacy planning systems. That complexity made it almost impossible for different parts of the business to understand what each other was doing, let alone coordinate their actions.

As part of a multiyear effort to transform its supply chain, the company made the decision to centralize all planning on a single platform and to enforce process standardization, cutting the number of applications in use from 1,500 to 50. The change radically improved both the performance and efficiency of supply-chain operations. Today, planning cycles take a week rather than a month, and require only half as many staff.

Looking at people through a digital lens

The approaches described above can address many of the human challenges to improved supply chain performance. But they don't fix all of them. One of the most significant remaining problems is misaligned incentives. Often, data isn't enough to resolve inevitable trade-offs between functions. A production manager might understand that a period of lower asset utilization is the best solution for the organization as a whole, but she may not be willing to make a change that will adversely affect the performance of her unit.

One way to fix the incentive problem is by using digital innovation to reinvent the structure of the organization. For example, rather than splitting responsibility for a particular product between the demand-planning, production-planning, and inventory-management functions, a single network planner could take end-to-end control. That approach fixes the incentive issue, but would also have knock-on effects elsewhere. Is a monthly sales and operations planning meeting still appropriate in a world of cross-functional planners and daily or hourly forecast adjustments?

Questions like these will become increasingly common as companies digitize more of their supply chains. To gain the full potential benefit of new technologies, they need to adapt their organizations, their processes, and their people's roles. Knowing exactly what to change—and how to make that change happen—brings its own set of challenges, and that's something we'll come back to in a future article.

Matt LaBombard is a consultant in McKinsey's Minneapolis office; **Scott McArthur** is a consultant in the Washington, DC office; **Ali Sankur**, based in the Chicago office, is an operations director for the Manufacturing and Supply Chain Practice; and **Ketan Shah** is a partner in the Chicago office.

Designed by Global Editorial Services
Copyright © 2019 McKinsey & Company. All rights reserved.