



FEATURE

The new supply chain equilibrium

In the wake of COVID-19 and widening geopolitical risks as a result of the conflict in Ukraine, companies around the world are optimizing their supply chains for resilience and efficiency. To really thrive, they also should focus on agility.

Jim Kilpatrick , Paul Delesalle, and Adam Mussomeli

The COVID-19 pandemic exposed serious vulnerabilities in today's highly efficient global supply chains. As COVID-19 transitions to an endemic state, the world braces for still more shocks and inflationary pressures driven by sanctions on Russia and uncertainty throughout Eastern Europe. Clogged ports and empty store shelves around the world speak to the additional work companies must do to make their supply chains more resilient, even as they face pressure to hold down costs. These measures are important and necessary, but we believe they miss another crucial element in supply chain management: agility.

The case for an agile supply chain

Disruption and massive, rapid change are the new normal, but the response from supply chains has been largely defensive to date, as managers enact measures to guard against supply shortages. Agility, which most supply chain officers would nod to as a nice-to-have attribute, is harder to quantify and can feel less urgent in the face of a crisis. As a result, most supply chain leaders have focused on improving the more tangible elements of supply chain performance where metrics and performance expectations—elements such as cost, service, quality, inventory, and asset performance—are much better defined.

However, the fact that agility is less tangible does not make it less important. The ability to save money or weather a crisis, while necessary, is insufficient. In the long run, it is agility that can make the difference between operations that thrive and those that merely survive. When disruption hits, it upends established practices, but it also reveals new opportunities. Three of the most important benefits of agility—better and more timely data and improved visibility; the ability to execute faster than the competition; and integrated and collaborative relationships with key supply chain partners—enable faster and better responses to new opportunities.

The agile supply chain is important for two reasons. First, we live in an age of disruption. Capabilities that improve supply chain agility can also help improve its resilience. As new forces continue to roil the world's sources of supply, from increasingly severe and frequent natural disasters to geopolitical upheavals, supply chains will need to build in the capacity to reconfigure much more rapidly to keep goods flowing. This is a level of agility that, before the pandemic, was considered less important than maintaining a simpler, more cost-efficient chain, from source to customer. Historical approaches to improve resilience typically relied on incremental inventory, incremental capacity, or incremental suppliers. However, these “physical” approaches to resilience all have a financial overhead that is difficult to justify when supply chain performance is primarily evaluated on efficiency. In the future, digital approaches and new agile capabilities will enable improved resilience, with less financial burden.

Second, supply chain managers often operate much closer to markets, and with a higher degree of granularity, than managers in other parts of the organization. They have access to market signals that others do not, such as a potential competitor supply issue. As such, they can identify new opportunities and help mobilize the organization to take advantage of these. This advantage gets compounded when organizations can respond more quickly and precisely than their competitors.

To build in agility, supply chain leaders need to play offense as well as they play defense. This is a fundamental shift in mindset for a world in which the supply chain is more complex, organic, and changeable. It's also more deeply embedded in corporate strategy and requires a clear understanding of how you configure your supply chain, and the capabilities that you need to win.

What makes a supply chain agile?

The capabilities, key performance metrics, and performance expectations related to agility are not as standardized or well defined as they are for supply chain efficiency. And the focus on agility will vary based on a company's overall strategy and the design of the supply chain to support that strategy. However, in our experience, agility can be built in four areas:

- Demand sensing
- Collaborative relationships
- Process integration
- Information integration

Each of these areas involves new capabilities, but, more importantly, they require a new understanding of the role of agility in creating competitive advantage. As they build agility into their operations, supply chain managers must strike the right balance among agility, resilience, and efficiency.

DEMAND SENSING

The capability to sense and respond to changes in demand is a good start. However, the agile supply chain goes a step further and anticipates changes, smoothly reconfiguring the production and distribution network and pivoting to robust sources of supply as new demands and opportunities for profitable growth come into view.

In an agile supply chain, managers track metrics that include the average number of days between sensing demand for a new product and getting it to the market, as well as the overall number of products introduced based on proactive sensing of new customer preferences.

COLLABORATIVE RELATIONSHIPS

Supply chain managers that excel in this area, in effect, become information hubs, taking in data and observations from multiple sources to understand opportunities and risks. They excel in collaborating with their key supply chain partners to respond in an orchestrated manner to these opportunities. They collaborate with key customers, exchanging marketplace information and aligning demand forecasts and product flows. They also have two-way information exchanges with a greater percentage of tier 1 suppliers, sharing inventory, production schedule, and capacity information to better optimize the end-to-end supply chain response, versus just a single company's piece of it.

PROCESS INTEGRATION

Agile supply chain organizations break down traditional functional barriers and focus on optimizing end-to-end processes. This fundamentally changes the speed at which an organization can respond to change. Process cycle times that were traditionally measured in months will be executed in weeks. Weekly processes will become daily processes. And the boundaries between planning and execution will blur. For some organizations, the ability to respond quickly may lead to a greater degree of vertical integration and direct control over a higher percentage of nodes across the end-to-end supply chain, including manufacturing plants, supply locations, and customer access points. Tesla, for example, is more vertically integrated than many other automotive original equipment manufacturers. As such, it neatly sidestepped the supply crisis in computer chips by using its own in-house software

engineers to write code for alternative chips. While other carmakers were forced to shut down assembly lines as they waited for chips, Tesla increased production of its all-electric vehicles in 2021 by an estimated 80%.¹

INFORMATION INTEGRATION

Rapidly advancing technologies such as cloud computing, 5G, the industrial Internet of Things, and artificial intelligence are driving the digitization of supply chains, increasingly leveraging information over assets. Organizations seeking to up their agility quotient often run aground because of an inability to easily and

quickly share information across the organization. This same constraint is even more challenging when sharing information across entities in the extended supply chain. That's why agile supply chains monitor the timeliness of information and the percentage of data where they have real-time—or even better, right-time—visibility and access. They also focus on the richness and integrity of this information as agile supply chain excellence is driven by accurate data and enriched signals.

A tripolar strategy

The need for agility to achieve supply chain excellence does not mean supply chain managers can lessen their focus on resilience or efficiency. As chief supply chain officers frequently tell us, the pressure to keep costs down has not abated. And the inflationary headwinds in wages, transportation, and many key commodities are strong as the world emerges from the COVID-19 pandemic and global supply chains resynchronize. The equation to optimize supply chain design has become a lot more complex. Supply chain executives need to find a new equilibrium that properly balances these three imperatives. If that is not daunting enough, supply chains must also serve the broader goals of the organization, reaching new levels of customer service, and meeting ever-more stringent decarbonization and broader environmental, social, and governance goals.

Making the challenge even more daunting is that the right balance will vary based on your position and role within an industry supply chain, your specific strategy, and how the supply chain contributes to your competitive advantage, and even over time as internal priorities evolve and the external environment changes. Some supply chain improvement initiatives can move the needle on more than one dimension. For example, investments in building smarter and more digital factories and distribution centers can have a positive impact on all three dimensions (figure 1).

YOUR SUPPLY CHAIN MADE AGILE

Here's what the competitive advantage of increased agility actually looks like. Imagine if you had the tools and capabilities to do the following:

- Anticipate a shortage of a critical component or commodity, and move more quickly than your competition to secure supply;
- See upstream issues across your multitier supplier network, and collaborate with your direct suppliers on alternate supply strategies, preventing the upstream issues from impacting you;
- Rapidly reconfigure your production and distribution network to keep goods flowing when global logistics infrastructure hits bottlenecks;
- Sense and respond to shifts in demand and changes to consumer preferences, or, better still, anticipate them based on enriched digital signals from the marketplace and proactively adjust supply chain execution; and
- Bring new products to market in weeks, when it takes your competition months.

However, many initiatives that respond to a particular imperative may add challenges to the other two, making the strategy truly multidimensional. For example, if you can source from Asia at a 25% discount on the total cost of ownership of locally sourced products, it strengthens supply chain efficiency. However, if the lead time is more than 100 days, that could weaken

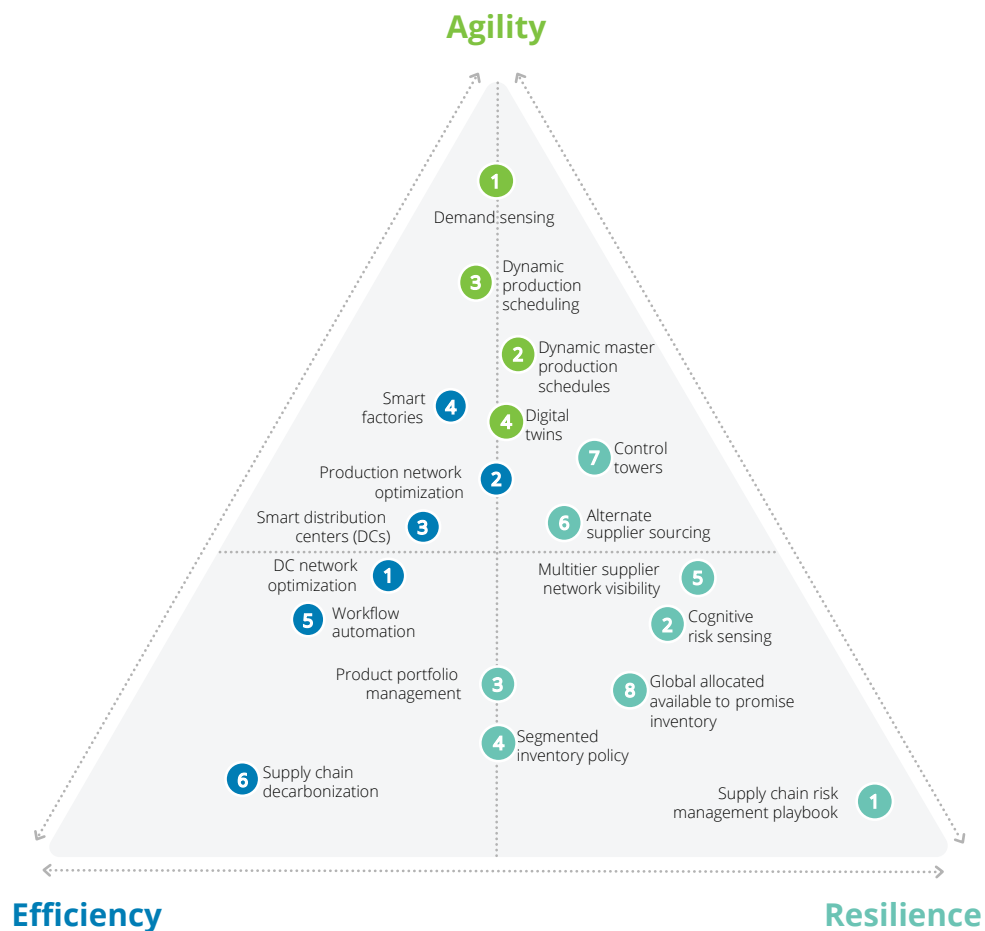
resilience and agility. And the problem could be even worse if the product moves by only one logistics mode (such as ocean freight) and there are unforeseen cost or capacity issues that impact profitability and customer service. Finally, each initiative must be evaluated for its effect on customer service and sustainability.

FIGURE 1

A new tripolar strategy

Adding agility to the supply chain will require investment to build new capabilities. Fortunately, many of those new skills will also move the needle on the other two dimensions.

■ Efficiency-focused initiatives ■ Resilience-focused initiatives ■ Agility-focused initiatives



Source: Deloitte analysis.

But the opportunity is worth the effort. Tripolar supply chains that can execute against these three imperatives successfully can go from a corporate expense to a source of competitive advantage and a driver of profitable growth.

A supply chain for a new era

In the postpandemic world, the most successful supply chains will find a balance among these three imperatives: agility, efficiency, and resilience. While costs remain a concern, the past two years have exposed the vulnerabilities in overindexing on efficiency. But building in resilience to withstand whatever shocks come next requires investment that can put it in direct conflict with efficiency.

Enter agility—the flip side of disruption is opportunity. As old ways of doing business are upended, new ways emerge. Organizations that can anticipate these new ways and proactively respond will have an opportunity to build new businesses, enter new markets, and take advantage of new sources of supply. Agility requires new mindsets and approaches—but it offers the potential to build substantial competitive advantage. For today's supply chain managers, it's time to play offense.



Endnote

1. Rebecca Elliott, "How Elon Musk's software focus helped Tesla navigate chip shortage," *Wall Street Journal*, December 30, 2021; Andrew J. Hawkins, "Tesla rewrote its own software to survive the chip shortage," *The Verge*, July 26, 2021.

Traditional, linear supply chains are evolving into sets of dynamic, IoT-enabled digital supply networks (DSNs). The perennial supply chain pressures of boosting productivity, supporting innovation, and moving faster—with more agility—become even more important as new business models, markets, and competitors emerge. In a digital economy, digital supply networks become imperative.

Deloitte's Supply Chain & Network Operations practice can help you imagine, deliver, and run your digital supply networks to address tomorrow's challenges and opportunities—providing a platform for generating critical insights, optimizing business processes, and automating supply chain activities across your value chain.

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