Five supply chain strategies to achieve resiliency and avoid risk

Introduction

Given the nearly constant disruption in the business world over the last three years, with more expected to come, it was not surprising that the Collins dictionary recently selected *permacrisis* as its Word of the Year. Supply chain executives, unfortunately, are quite familiar with the phenomenon, defined as "an extended period of instability and insecurity, especially one resulting from a series of catastrophic events." Geopolitical instability, the global COVID-19 pandemic, rising fuel costs, ballooning inflation, increasing regulation, and international calls for a reduction in CO_2 emissions have applied pressure on many organizations. As executives understand, at any point, one of these scenarios may flare up and disrupt the operation of their business— and with countless other risks lying in wait, there is no room for vulnerability in the supply chain.

With these risks in mind, there are plenty of opportunities to make supply chains more resilient—and more sustainable—to meet the challenges ahead, if organizations will take advantage of them.

A survey of 1,000 supply chain executives across the world by Oxford Economics in partnership with SAP found that supply chain executives:

- Are challenged by **customer expectations**—mainly, maintaining quality products and services while increasing the speed of interactions.

- Do not always see the value that **strong collaboration and clear visibility** across the supply chain have on customer needs.

- Are looking to **intelligent technologies** as a means of **reducing risk**.

- Are increasingly aware of the importance of **establishing sustainable operations** throughout the business.

Our calls to action at the end of this paper include five ways supply chain executives can create a more resilient and sustainable supply chain.
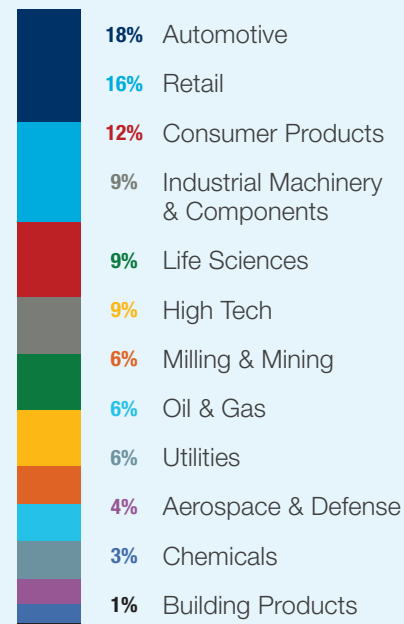
We also identified a subset of respondents who are leaning heavily into establishing sustainable supply chains. These organizations—which we call **Sustainability Leaders**—have all taken steps to look within their organization (and within the many organizations they partner with along the supply chain) to establish standards around sustainability performance, along with metrics to ensure those expectations are met. And while these organizations are defined by their commitment to sustainability, the benefits they realize are correlated with a wide range of strong performance results across resiliency efforts.

Sustainability Leaders make up 6.7% of all respondents in our survey. They are more likely to be large in size (57% of Leaders have at least $10b in annual revenue, vs. 32% non-Leaders) and come from all parts of the organizations—including Logistics (24%), Supply Chain Planning (16%), and Manufacturing (10%).
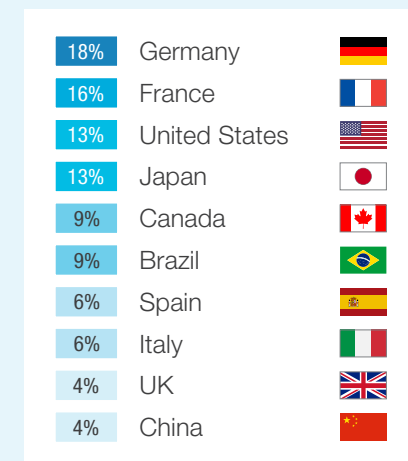
To qualify as a Sustainability Leader, respondents must meet four criteria:

- Have moderate or full visibility into both the **organization's sustainability practices** and their **supplier's sustainability practices**.

- Be well into their first efforts of **establishing sustainability metrics or KPIs in contracts with partners and vendors**.

- Be well into their first efforts of **implementing sustainability performance tracking for suppliers and vendors**.

Sustainability Leader survey demographics

%	Industry
18%	Automotive
16%	Retail
12%	Consumer Products
9%	Industrial Machinery & Components
9%	Life Sciences
9%	High Tech
6%	Milling & Mining
6%	Oil & Gas
6%	Utilities
4%	Aerospace & Defense
3%	Chemicals
1%	Building Products

Note: No Sustainability Leaders come from organizations in the energy, process manufacturing, or other manufacturing sectors.

| %	Country
18%	Germany
16%	France
13%	United States
13%	Japan
9%	Canada
9%	Brazil
6%	Spain
6%	Italy
4%	UK
4%	China

About the research

Oxford Economics and SAP fielded a survey of 1,000 supply chain executives across 10 countries and 15 industry sectors. One-third of the sample was made up of companies with $500m to $999m in annual revenue, with one-third having between $1b and $10b and one-third generating over $10b in annual revenue.

Survey respondents participated in the research using a Computer-Assisted Telephonic Interviewing methodology (CATI). Interviews were carried out in January and February of 2023.
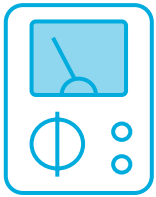
Getting a handle on the organization's needs

Predicting the future is nearly impossible, but executives can position their businesses favorably by developing strategies that place supply chain needs front and center. A sizeable number of executives in our survey have already established multi-year strategies prioritizing value chain investments in an effort to improve their future state (59%)—indicating that maintaining efficient, productive, and innovative supply chains are key to resiliency.

Respondents are indeed defining strategy according to these needs. Productivity and efficiency (33%) and innovation (30%) are most commonly viewed as the main driver of supply chain initiatives—which is in line with the priorities identified in our 2021 survey, *The Sustainable Supply Chain Paradox* (34% productivity, 33% innovation in 2021).

And although sustainability has yet to become a primary motive for supply chain initiatives (just 28% cite sustainability as a top driver), the results show that those that prioritize it gain significant advantages. Sustainability Leaders are more likely to pursue supply chain initiatives with sustainability in mind (31% vs. 27% non-leaders)—and are also more likely to self-report greater levels of innovation (49% vs. 41% non-leaders).

Supply chain executives are generally satisfied with their modifications to supply chain processes. Over half say they have a defined strategy for their supply chain (54%), and nearly two-thirds (61%) at least "somewhat" agree that they have successfully broken down silos throughout the product value chain over the past three years.

When put into context, however, these numbers are deceiving. Influence from supply chain figures was carefully considered during the height of the pandemic, but this approach seems to have waned: Compared to findings from our 2021 survey, today's executives are less likely to say the supply chain function is important in setting overall company strategy (52%, vs. 66% in 2021)—and even fewer say supply chain executives are involved in crafting company strategy (49%, vs. 69% in 2021).

And simply breaking down silos is not enough. While that will improve how work gets done internally, executives would be wise to keep the end goal in mind: making sure the customer takes away a positive impression from every interaction. Supply chain executives understand succeeding in this area is getting harder; customer needs are constantly changing, and they expect goods and services faster than ever (a trend we explore in more detail below).

Over half of survey respondents say they have a defined strategy for their supply chain (54%).

Mitigating risks

There are many challenges that supply chain operations face today. Our research will focus on two key business risks that have emerged as threats to the supply chain: meeting customer demands for speed of interactions, and a lack of collaboration and visibility—not just with vendors and suppliers further down the value chain, but also within the organization itself.

Risk 1: Speed

Next-day and same-day delivery expectations continue to grow on the customer side of transactions, increasing pressure on supply chains. To meet these growing needs, organizations that deliver products and services must find ways to keep up with the speed of interactions. Unsurprisingly, real-time responsiveness is viewed as a top barrier to supply chain success (40%), and meeting customer demands on time follows close behind (34%).

Supply chain executives understand that customers demand speedy transactions. More than half feel customers want real-time updates and tracking of their products and services (54%), while also expecting the quality of these products and services

to stay the same—only delivered faster (46%). Not meeting these needs can damage the organization's reputation and could push customers to competitors.
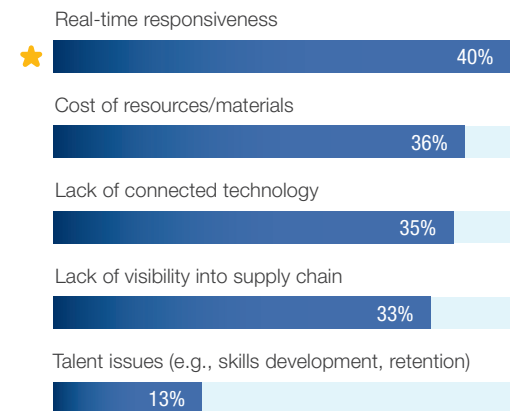
Not only do customers expect high-quality, accurate, and speedy transactions, but social demands for cleaner, sustainable operations makes that more difficult. Carrying out the business responsibilities of yesterday without creating waste along the supply chain means pursuing sustainability initiatives to change how business is done—but over one-third say the speed and convenience customers demand serves as a primary barrier to successful implementation of sustainability initiatives (37%).

Real-time responsiveness is viewed as a top barrier to supply chain success (40%); meeting customer demands on time follows close behind (34%).

Fig. 1: The always-on enterprise falls short

Q: **What are the top challenges your organization faces in meeting its supply chain goals?**
Rank 1, Rank 2, and Rank 3 responses combined

Real-time responsiveness — 40%
Cost of resources/materials — 36%
Lack of connected technology — 35%
Lack of visibility into supply chain — 33%
Talent issues (e.g., skills development, retention) — 13%

Risk 2: Collaboration and visibility

To meet customer demand for speed, supply chains must operate as an agile network to maximize efficiency. Executives in our survey agree that to move fast all silos across the supply chain must work well together. As noted earlier, over half (54%) have a defined strategy for their supply chain—but a similar percentage (52%) also say improving supply chain collaboration internally and externally would protect the business from inherent risks. Perhaps these defined strategies have helped minimize vulnerability over the past three years: Only 43% of respondents say risk exposure has increased during this timeframe.

But while half of supply chain executives feel confident about cross-functional processes, the other half face a significant dilemma. Current levels of internal collaboration between product design and operations groups with the rest of the organization do not inspire confidence. Outside R&D activities—

where 52% cite full visibility and transparency into business processes—visibility is unclear: More than two-thirds of respondents say they have less than full visibility into any other business process or function in our survey (see Fig. 2).

The dividing lines between those that collaborate well within the company and those that remain stuck in siloed operations are equally apparent when looking at how functions work together. The IT function acts as a support mechanism across the business, so it makes sense that 57% of respondents work well with it. But collaboration across operationally focused functions deteriorates quickly: Only about half collaborate well with customer service, sales, manufacturing, or after-sales service (50% each)—and even fewer communicate well with finance teams (47%).

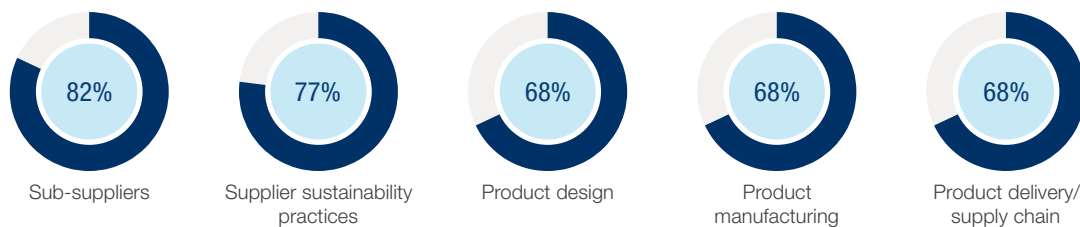Communication within the business is just the first step in true supply chain excellence—and with

internal collaboration as inconsistent as it is, it is not surprising that external collaboration is even worse. But respondents may be underestimating the value of a strong business ecosystem, as less than half (47%) feel improving visibility with trading partners across the supply chain will create a more resilient supply chain.

Organizations that do not see partners as an extension of the business put their reputation at risk. Many can see into operations with Tier 1 providers and have highly collaborative processes in place (55%), but partnerships further down the supply chain are significantly cloudier. Less than one-third have highly collaborative relationships with Tier 2 (32%) or Tier 3 (25%) providers, and less than two in five collaborate well with maintenance providers (39%) or outsourced manufacturers (38%). Needless to say, there is much room for improvement.

Fig. 2: Silo walls are made of brick, not glass

Q: Please rate the executive suite's visibility into the following business processes or functions

All "less than full visibility/transparency" responses combined

82%	77%	68%	68%	68%
Sub-suppliers	Supplier sustainability practices	Product design	Product manufacturing	Product delivery/ supply chain

> **Over half (52%) say improving supply chain collaboration both internally and externally would protect the business from inherent risks.**

Increasing resiliency

To address these risks, supply chain executives are taking steps to make their organizations more resilient. Many organizations expect geopolitical changes to have a negative impact on their ability to deliver high-level customer experiences (43%), so incorporating a macroeconomic perspective to supply chain strategy will be key. Over half feel creating a more regional or local network of vendors and suppliers could address this issue (53%), while two in five say diversifying their sourcing strategies would have the same effect (43%).

Supply chain executives make strategic decisions in the hopes of creating benefits for clients and customers. Executives believe that efforts to onshore or nearshore different stages in their supply chain (50%), change the product or service delivery process (49%), and adjust how they forecast supply and demand (46%) will have a positive effect on their ability to deliver high-level customer experiences.

But to bring these strategic goals to bear, organizations must introduce intelligent technologies into supply chain activities. Over half of executives (57%) have already deployed intelligent technologies in their supply chain (e.g., AI, ML, predictive analytics). They have primarily focused on AI—56% are either well into first efforts or have completed an initiative—while many others have improved visibility into supplier and vendor activities (54%) or increased predictive analytics capabilities (52%). However, many others have just begun piloting these efforts.

No matter where they are on their journey, executives expect these tools to deliver value. Respondents expect their tech investments will streamline processes (46%), enable predictive analytics (40%), improve visibility into supply and demand (37%) and clarify supply chain operations (37%)—all of which will help create a resilient supply chain.

It is important to note that supply chain executives are hyperaware of the impact of AI. Of late, the technology's importance (and the continued advancement of new, innovative AI applications) has become better established. AI (56%) is being used to nearly the same extent as cloud (60%)—and even more so than mobile (55%) and IoT (50%). And while many feel they already capture product value chain data and act on it in real time today (57%), just 14% are leveraging AI or predictive analytics capabilities to do so, leaving even more room for AI possibilities.

> Over half say that creating a more regional or local network of vendors and suppliers would make them more resilient to risks (53%), and two in five say diversifying their sourcing strategies would accomplish the same effect (43%).

Sustainability

Over the past few years, businesses have been increasingly focused on sustainability across the supply chain. Building on Oxford Economics' and SAP's burgeoning body of sustainability research, we find that supply chain executives continue to support this trend. Improving sustainability metrics is still least likely to be the top strategic goal for respondents—only 7% say this is their number-one priority—but when looking at their top-three goals, sustainability gains ground (28% with top 3 rank combined).

This increased focus is in response to a crescendo of customer demand, as the expectation of transparent and sustainable operations grows in popularity. And demand does not stop at the organizational level: Nearly half of respondents (46%) say their customers are more and more concerned about buying sustainably sourced, ethically designed products.

Naturally, the call for sustainability improvements resonates with senior leadership. But among supply chain executives, some functions are viewed as more ripe for change than others. For example, sustainability is seen as a most pressing concern within manufacturing processes (43%), but less than one-third are similarly worried about its impact on end of product life (31%), after-sales efforts (30%), and delivery processes (28%).

Where some view sustainability as a concern, others see opportunity. The assumption has long been that balancing sustainability with cost reduction is a significant challenge. But our research shows that sustainability efforts can build resilience via non-financial means; Sustainability Leaders are much more likely than non-leaders to say

sustainability issues will have a positive effect on how the organization delivers high-quality customer experiences (54% vs. 38% non-leaders).
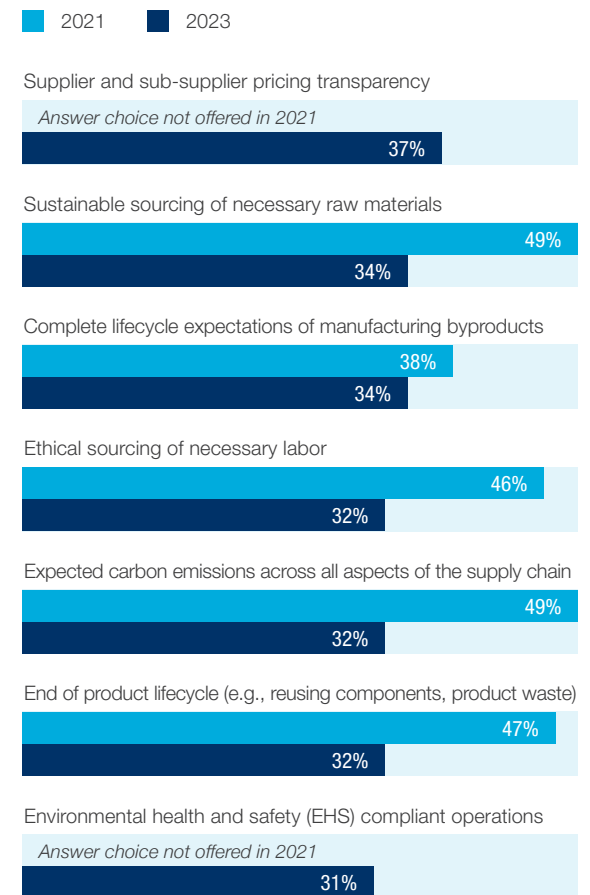
If sustainability efforts are to be effective, though, executives must accurately track performance across the supply chain. The old adage that "you can't manage what you can't measure" still holds true—but so far, many have yet to apply this effectively, as less than a quarter of respondents (23%) have full visibility into supplier sustainability practices today. In fact, visibility into business partner supply chain processes has actually *decreased*; in some cases, visibility between our 2021 dataset and this survey's respondents has dropped by over 30%.

Many supply chain executives are actively working to develop better data practices and overcome visibility shortfalls. Just over one-third have started sustainability performance tracking for suppliers and vendors (37%), but many more have already started piloting their first efforts (43%). Similarly, just 34% have established sustainability KPIs or performance metrics in partnership agreements with suppliers and vendors, but 39% have piloted efforts in this area.
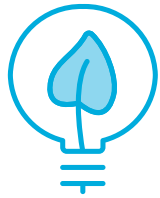
Fig. 3: Out of sight, out of mind

Q: To what extent does your organization have visibility into the following aspects of all of your supplier's supply chain processes?

"Significant" and "complete" visibility responses combined

■ 2021 ■ 2023

Supplier and sub-supplier pricing transparency
- *Answer choice not offered in 2021*
- 37%

Sustainable sourcing of necessary raw materials
- 49%
- 34%

Complete lifecycle expectations of manufacturing byproducts
- 38%
- 34%

Ethical sourcing of necessary labor
- 46%
- 32%

Expected carbon emissions across all aspects of the supply chain
- 49%
- 32%

End of product lifecycle (e.g., reusing components, product waste)
- 47%
- 32%

Environmental health and safety (EHS) compliant operations
- *Answer choice not offered in 2021*
- 31%

The benefit of being a Sustainability Leader

It would behoove supply chain executives to pursue sustainability excellence, as the benefits recorded by those who do are significant. We identified a group of respondents (6.7% of the survey population) who have taken extraordinary steps to achieve sustainability excellence throughout their supply chain. To qualify as a Sustainability Leader, respondents must have visibility into both the organization's and their supplier's sustainability practices. They must also have taken steps to establish sustainability metrics or KPIs in contracts with partners and vendors, and have implemented sustainability performance tracking with these third parties.

While Sustainability Leaders share these traits by definition, we found other areas where their supply chain outlook varies from their peers. They are more likely to view their supply chain as a competitive differentiator (60% say this, vs. 41% non-Leaders) and are more likely than non-Leaders to put supply chain executives in positions that influence overall company strategy (72% vs. 47%).

Sustainability Leaders also prioritize their customers to a greater extent than others. They are hyper aware that their customers are concerned about buying sustainably sourced and ethically designed products (64% vs. 44%) and expect personalized products or services (69% vs. 48% non-Leaders). Leaders are taking action on these fronts. Over two-thirds (69%) say they base most of their product value chain decisions on what their customers need (vs. 47% non-Leaders). They do this by connecting operational data with business information to improve decision-making both upstream and downstream (75% vs. 49% non-Leaders),

As a result, the benefits Sustainability Leaders see are much greater than those of their non-Leader counterparts. While financial benefits have not yet taken hold, Leaders are more likely to have seen significant boosts in employee satisfaction

(24% vs. 13% non-Leaders) and market share (31% vs. 14%), while improvements in both corporate brand perception (60% vs. 49%) and customer satisfaction (60% vs. 48%) have also risen.
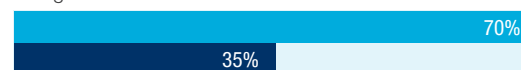
Fig. 4: Follow the Sustainability Leaders

Q: **In your opinion, how successful have your organization's sustainability efforts been in each of the following phases of the product and service lifecycle?**
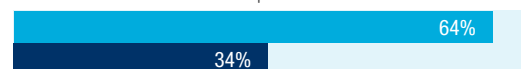
"Moderately" and "significantly" successful responses combined; Leaders vs. Non-Leaders
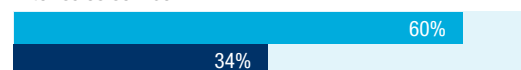
■ Leader
■ Non-Leader

Design
- Leader: 70%
- Non-Leader: 35%

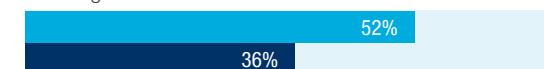Delivery
- Leader: 55%
- Non-Leader: 36%

Product maintenance and operations
- Leader: 64%
- Non-Leader: 34%

Planning
- Leader: 52%
- Non-Leader: 36%

After-sales service
- Leader: 60%
- Non-Leader: 34%

Manufacturing
- Leader: 49%
- Non-Leader: 41%

Calls to action: Five paths to supply chain resilience

Risks will never go away, but building a resilient and sustainable supply chain could better position organizations to avoid danger. An emphasis on resiliency requires careful planning, committed investment, and a sustainability-first mindset. Taking these five steps may help your organization walk the path of the Sustainability Leaders:

- **Put supply chains at the heart of your business strategies.** Recent events and crises have shown that creating a risk resilient supply chain capable of predicting and adapting to any situation is the difference between thriving and just surviving. Strategies to source and manufacture products and goods closer to the actual demand is a good first step.

- **Future proof against risk.** Executives know what supply chain risks threaten their business better than anyone. Putting real-time and accurate data—from all nodes and tiers of the supply chain—into the hands of supply chain practitioners will provide the visibility to make timely and intelligent decisions.

- **Unleash the power of collaboration across your network.** Breaking down silos across both departmental and company boundaries enables more informed and collaborative end to end business processes. Visibility across the supply chain is a key enabler to solving today's and tomorrow's business issues.

- **Leverage intelligent technologies to drive business and process innovation.** Increase productivity and efficiency by automating repetitive tasks and processes. Leverage machine learning algorithms to detect patterns, risks, and opportunities not visible to the human eye. Empower users with predictive analytics and decision support tools, and act on the data these new capabilities provide.

- **Adopt a sustainability-first mindset.** "Going green" must become more than a buzz phrase. Sustainability should be embedded into every process across the supply chain. Building a reputation as a conscious enterprise—and creating a loyal, satisfied customer base—is the sort of resiliency that can endure any challenge.

About Oxford Economics

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