



PwC's 2023 Digital Trends in Supply Chain Survey

How much is technology transforming supply chains?



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Between an increasingly digital world and persistent operational disruptions, the effective use of technologies in supply chains has become more critical. In addition to lowering costs, improving efficiency and building resilience, digital investments can mitigate risks and address environmental, social and governance (ESG) issues. But as PwC's 2023 Digital Trends in Supply Chain Survey reveals, many challenges remain, and companies can do more to elevate their supply chains in the digital age.

The more than 300 executives and leaders we surveyed recognize the benefits of digitizing their supply chains and have made significant commitments. Compared to the 2022 survey, companies have made some gains, but pressure to consistently deliver for customers has increased the scrutiny of supply chains across industries. Our survey provides insight on where more progress can be made in a more competitive landscape.



83%

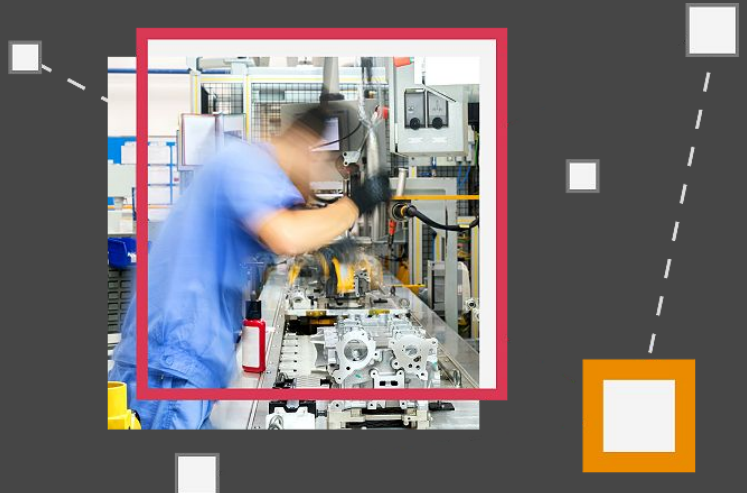
of executives say their supply chain technology investments haven't fully delivered expected results

Q: If your investments in supply chain technology have not fully delivered expected results, please indicate the main reason why.

Source: PwC 2023 Digital Trends in Supply Chain Survey: base of 305

Digitizing supply chains faces multiple challenges

- Executives continue to focus more on basic, near-term priorities and challenges in their supply chains and less on actions and investments that can help transform supply chains and create long-term value.
- Despite the abundance and potential of technologies, few executives say their companies are using or planning to use them to automate and enhance the execution of different areas of the supply chain over the next 24 months.
- Only about one-third of executives say increasing resilience is a top objective when investing in supply chain technology.
- With risk, 86% agree their company should invest more in technology to identify, track and measure supply chain risk, including 35% who strongly agree.
- More than two-thirds of respondents expect digitizing their supply chain to require some upskilling of employees. But surprisingly, only 7% said digital upskilling was their top priority.
- A lack of digital skills among employees (80%) and the availability of data and digital tools (73%) were the most commonly cited challenges to integrating ESG into company supply chains.



Transformation initiatives still compete with basic priorities

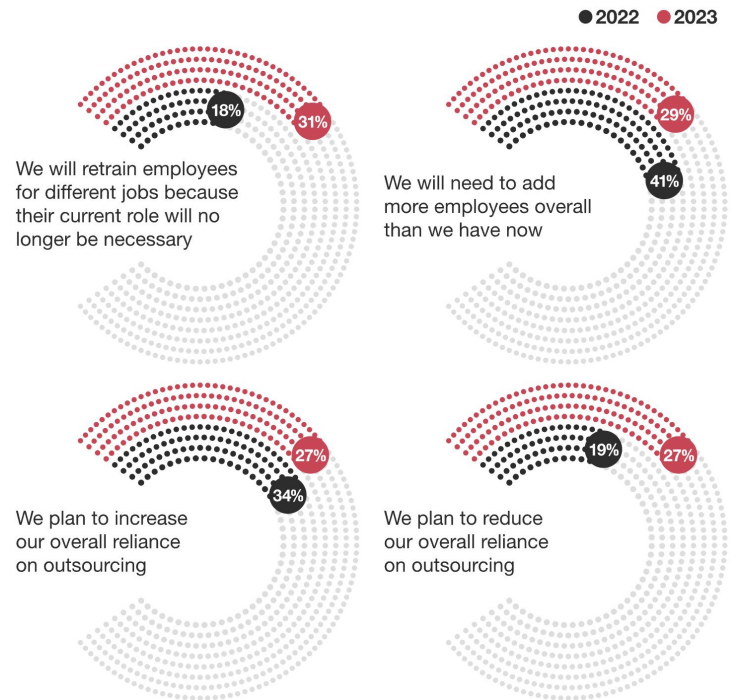
Executives say their top priorities for the next 12-18 months are increasing efficiency and managing or reducing costs, with both named much more often than several other choices. That's similar to the 2022 survey, although the responses for some of the other priorities — such as automating processes and analytics and increasing sustainability and corporate social responsibility — increased slightly, signaling movement toward actions that can have a longer-term impact.

The story is similar with their top challenges to digitizing supply chains, with nearly half choosing budget constraints. In our experience, an unclear or poorly articulated business case is often the bigger problem than a lack of budget. Even so, executives rank all other challenges much lower, including difficulty getting employees and teams to work differently (31% rank it as a top-three challenge) and difficulty attracting, developing and retaining the "digital native" talent needed to transform their supply chain (25%).

Those choices are notable as other responses suggest a tightening in workforces and that companies may be planning to work more with who they already have. Compared to 2022, fewer executives say they'll need to add more employees overall than they have now, and more say they'll retrain employees for different jobs because their current roles will no longer be necessary. In addition, more respondents than in 2022 say they plan to reduce their overall reliance on outsourcing.

Working more with current supply chain workforce

Retraining is on the rise from a year ago, while plans to hire are down.



Q: In which of the following ways do you expect your workforce to change due to the digitization of your supply chain? (Select all that apply)

Source: PwC 2023 Digital Trends in Supply Chain Survey: base of 305

Source: PwC 2022 Digital Trends in Supply Chain Survey: base of 244

What you can do

Don't let daily noise dominate your attention. Making sure the trains run on time is important, but if you don't also invest resources in strategy, you may not have tracks for those trains in the long term. Resist the temptation to make strategy an "add-on" for existing teams. Instead, dedicate capacity to rethinking your organization's overall priorities, assessing how you can transform procurement practices, improving your diversity of suppliers and other actions that could boost long-term stability.

Enable your workforce for meaningful change. While the prospect can be overwhelming, building a workforce that can adapt to different ways of working, particularly through technology, is critical for maintaining resilience in your supply chain. Consider who can guide digital efforts in different parts of the supply chain — taking bites from the apple versus trying to swallow it whole — and provide a path to scaling retraining across areas.



Tech investments have good intentions, but results come up short — for many reasons

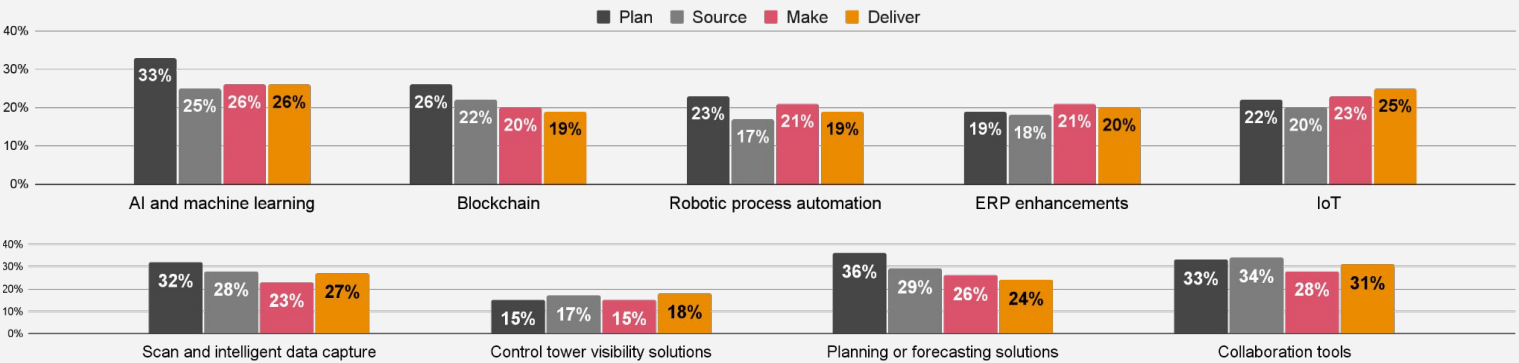
The adoption and application of technologies within supply chain operations varies greatly by technology. Cloud tops the techs that have been either partially or fully adopted (84%), followed by the Internet of Things (IoT) (79%). Technologies such as scan and intelligent data capture and third-party spend analytics tools weren't far behind, but less than half of respondents say their companies have fully or partially adopted drones, augmented reality, or robotics or robotic process automation.

Responses to planned tech investments were similar, with cloud, IoT, third-party spend analytics tools, and scan and intelligent data capture seeing the highest numbers. But when asked about the levels of investment in the next two years, artificial intelligence and machine learning are seeing the most spending, with 22% of executives saying their companies plan to invest at least \$5 million in those technologies. As for their main objectives with supply chain tech investments, driving growth (53%) and optimizing costs (51%) outpaced several other possible goals.

The challenge is to make sure those investments pay off. Only 17% of executives say their company's investments in supply chain technology have fully delivered the expected results. That's down from 20% in the previous survey, and once again respondents are divided as to why the results have fallen short. Reasons ranged from needing more time to conduct the implementation (e.g., it's still in process), cited by 21%, to undefined ownership and vision (4%).

What techs are used in which parts of the supply chain?

Companies are investing in technology, but when it comes to specific technologies and solutions and different supply chain areas, a minority of respondents say they're using technologies to automate and enhance execution of those areas.



Q: Are you using or planning to use the following to automate and enhance execution of these supply chain areas over the next 24 months? (For each area, select all that apply)
Source: PwC 2023 Digital Trends in Supply Chain Survey: base of 305

What you can do

Begin with the end in mind. If you're committed to digital investments, you should also determine at the start what **tangible mean results** you expect and how you're going to measure them. Not just things like financial ROI but also if teams truly are working differently, and what the outcomes of that are. If you do see the expected gains — money saved, freed-up capacity, etc. — you should have a plan in place for where those will be reinvested in the supply chain well in advance, not after the fact.

Build a foundation that will enable broader success. Driving growth and cutting costs are great goals that you definitely can and should pursue. But putting off other objectives like increasing resilience and exploring new innovations can make it more difficult to accomplish those other goals. Look at where tech investments can shore up critical areas and help reinvent your supply chain for the long haul, turning it into a strategic asset.

Resilience and risk are under control, but more can be done

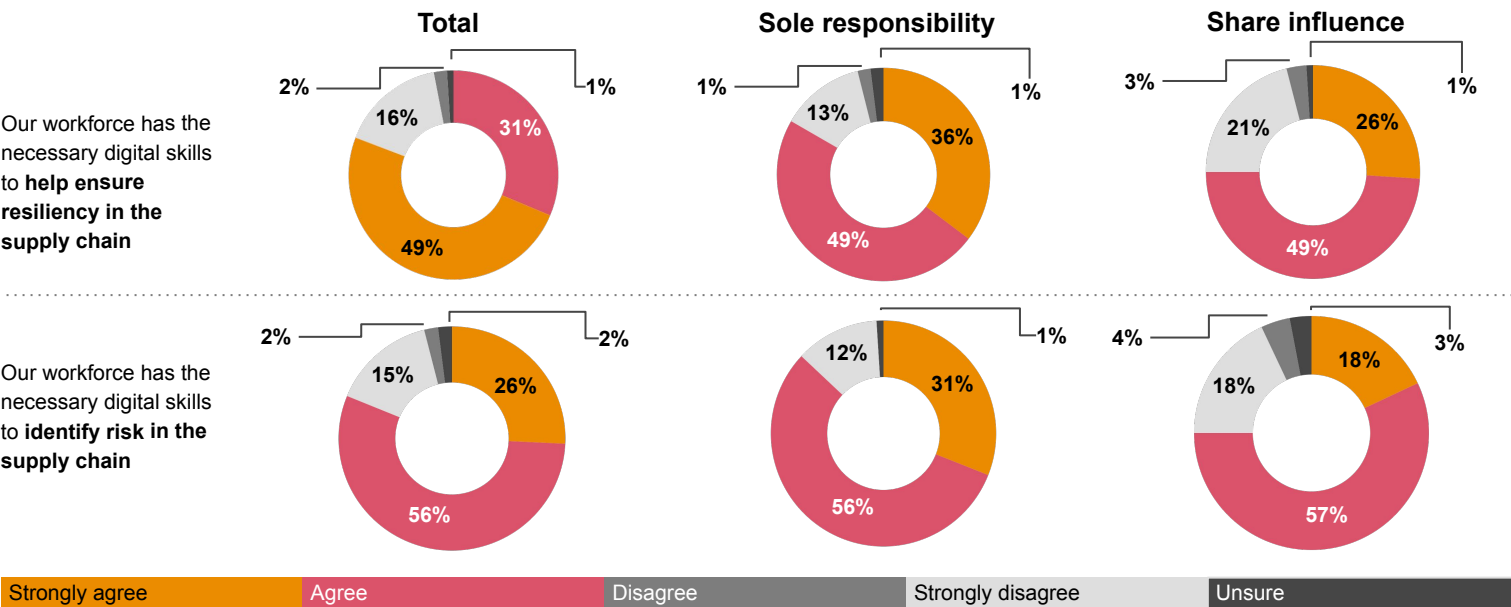
Compared to higher responses for driving growth and optimizing costs, only 34% of executives say increasing resilience is a top objective when investing in supply chain technology. That also was lower than improving customer service (40%) and gaining competitive advantage (38%), and it could be because executives generally think their organizations already are improving resilience in their supply chains. Substantial majorities agree or strongly agree that their tech investments to improve supply chain resilience have been effective, that investments have allowed faster decisions to manage disruptions and that their companies can quickly change their supply chain to reduce possible disruptions.

Executives also generally think their existing processes and systems adequately manage risk in the supply chain, with 83% agreeing or strongly agreeing with that statement. At the same time, 86% agree or strongly agree that their company should invest more in technology to identify, track and measure supply chain risk. That indicates that “adequate” may not be enough as business leaders consider how else they can head off risks in the supply chain.

The challenges in managing risks remain plentiful. When presented with several options, roughly two-thirds or more of respondents say all were either a major or minor challenge. Predicting future risks is at the top with 80% saying it’s a major or minor challenge.

Divergent views on digital skills, resilience and risk

While most executives express confidence in employees’ digital skills, those with sole responsibility for business decisions on supply chain operations feel more strongly than those who share influence with others on those decisions.



Q: To what extent do you agree or disagree with the following statements about resiliency in your supply chain?
Q: To what extent do you agree or disagree with the following statements about risk in your supply chain?
Source: PwC 2023 Digital Trends in Supply Chain Survey: base of 305

What you can do

Don’t settle for traditional risk management. There are too many needs when it comes to risk — predicting, identifying, tracking, measuring, recovering — to not reconsider where digital investments can help. A thorough review of your current capabilities can reveal which parts of managing risk can benefit the most from new technologies.

Reassess where resilience needs a refresh. While significant, the COVID-19 pandemic was just one disruption in recent years that tested supply chain stability in new ways. Look where you can move beyond addressing the immediate impacts of a disruption and better understand how that disruption also can affect your overall supply chain network.

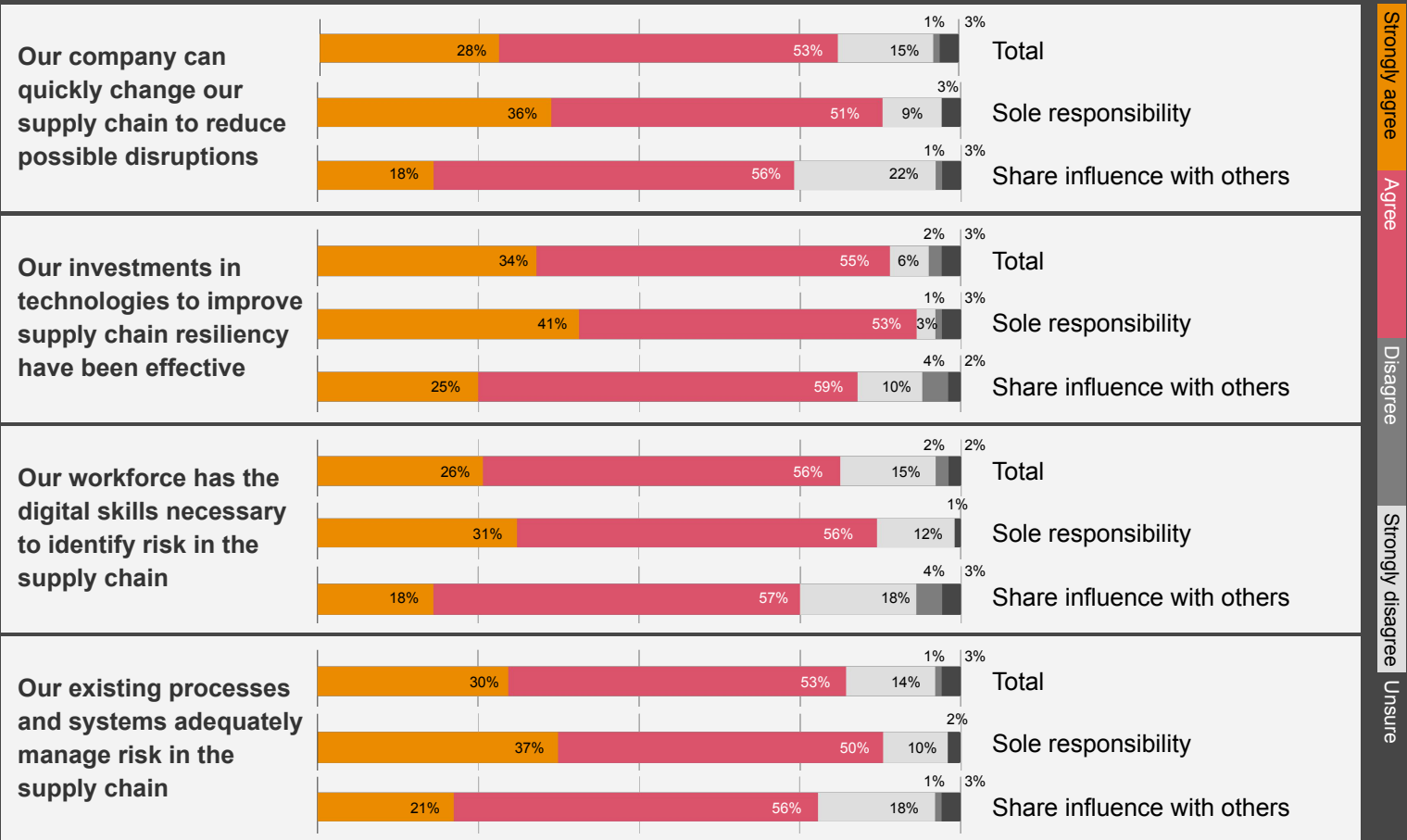
Some big differences based on roles in supply chain decisions

Many survey responses highlight sharp splits between two groups of respondents. Among the executives surveyed, 55% have sole responsibility for business decisions on supply chain or procurement operations and 45% share influence with others regarding those decisions. The disconnects in multiple areas could indicate different perceptions when it comes to digitizing supply chains.

- While 65% of those who share influence say managing and reducing costs was a top priority, only 46% of those who have sole responsibility say the same.
- Twice as many respondents with sole responsibility say supply chain goals not being aligned with the company's strategic goals is a top challenge (29%, compared to 15% who share influence).
- Responses on technology adoption and planned tech investment are higher across the board — substantially for some technologies — for those who have sole responsibility than those who share influence.
- Similarly, those with sole responsibility are more likely than those who share influence to say their companies have already developed digital supply chain capabilities for various ESG areas, particularly environmental actions like recycling, responsible disposal of returned products and setting and meeting net zero goals.
- Disconnects exist in other ESG matters, with those who share influence less positive about supply chain's connection with and impact on ESG strategy and goals, how digital investments in ESG have benefited the supply chain and ESG measurements and benchmarks.

With more responsibility comes more confidence

Some key areas show differences in “strongly agree” and “disagree” responses between those who have sole responsibility for business decisions on supply chain operations and those who share influence for those decisions.



Q: Are you using or planning to use the following to automate and enhance execution of these supply chain areas over the next 24 months? (For each area, select all that apply)
Source: PwC 2023 Digital Trends in Supply Chain Survey: base of 305

More opportunities to integrate ESG into the supply chain

Companies are coming under regulatory, investor and customer pressure to provide expanded ESG disclosures, including how environmental and social issues impact value chains. While there have been gains in the past year, ESG-related issues still pose challenges to the supply chain function.

Executives report improvements in some areas, with fewer respondents saying that staying aware of legislative and regulatory frameworks, identifying ESG supplier risks and prioritizing minority-owned, diverse suppliers are either a minor or major challenge. But a majority of executives still consider most ESG-related issues a challenge. Also, compared to the previous survey more respondents say deciding on an ESG framework and key metrics and establishing effective oversight and audit protocols are a challenge for their companies.

The top challenges to integrating ESG into the supply chain are that employees lack digital skills — with 80% of executives saying it was either a minor or major challenge — and inadequate availability of data and digital tools (73%). Others include companies still assessing ESG-related regulatory requirements (72%) and a lack of a digital ESG or digital supply chain strategy (71%).

Some ESG issues have become less of a challenge

A decline in executives who see some ESG issues as a challenge to supply chains could suggest progress in those important areas.



Q: To what extent do the following ESG-related issues pose a challenge to your supply chain function?

Source: PwC 2023 Digital Trends in Supply Chain Survey: base of 305

Source: PwC 2022 Digital Trends in Supply Chain Survey: base of 244

What you can do

Start simply so you can go beyond the bare minimum.

Meeting regulatory requirements is obviously important, but oversight and measurement of ESG goals should be considered and aligned with business strategy. This can be daunting, and in many cases organizations try to do too much, too soon. Instead, look at where you can start with key challenges and track progress on those, then expand from that solid base.

Zero in on the “S” in ESG. Customers, vendors, employees and other stakeholders increasingly see issues like economic inequality and social injustice as global problems that businesses have an obligation to help solve. Assess where your organization can have a real impact through its supply chain.

About the survey

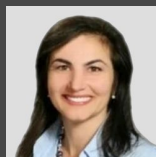
PwC's 2023 Digital Trends in Supply Chain Survey surveyed 305 executives in November 2022. Respondents in the online survey included C-suite executives, upper management, directors, managers and board members based in the US who either have sole responsibility for business decisions on supply chain or procurement operations or share influence with others regarding those decisions. Sectors surveyed include business services; consumer markets; energy, utilities and mining; health industries; industrial products; and technology, media and telecommunications.



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