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Supply chain's big bet on AI for geopolitical resilience



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About the research

This Economist Impact report, supported by Kinaxis, explores how companies are deploying artificial intelligence (AI) to strengthen supply chain resilience in the face of geopolitical risks. The analysis is informed by a survey of more than 800 supply chain executives in countries across North America, Europe and Asia-Pacific, as well as expert interviews. The survey covers eight sectors: automotive, chemicals, energy, healthcare, technology, manufacturing and industrials, retail and consumer goods, and transportation and logistics.

The report presents survey findings and qualitative insights, highlighting key challenges in AI implementation, and offers recommendations and case studies on how these can be overcome.

We would like to thank the following experts for their time and insights:

- **Dr Clive Rees**, senior vice president and head of global supply chain at Fujitsu
- **Javad Mohammadi**, chief procurement officer at Mammut Group
- **Kevin O'Marah**, founder of Zero100
- **Pascal Van Hentenryck**, professor in the H. Milton Stewart school of industrial and systems engineering at Georgia Tech

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Introduction

Two words characterise the contemporary business environment—complexity and uncertainty. Global firms rely on multi-tier, global supply chains, but faced with wars, tariffs and sudden policy changes, these appear increasingly unstable.

In the past, similar periods of rapid change have spurred major developments in technology. Semiconductor complexity took a giant step forward during the second world war to power American radars,¹ while the acceleration of cloud computing allowed business to navigate the unprecedented office closures of the covid-19 pandemic.²

Today many executives are betting on artificial intelligence (AI). They see it not only as a tool to anticipate disruption but also to reshape supply chains, making them more resilient and agile.³ As this report will show, firms—particularly those in Europe and Asia-Pacific, which are subject to fast-changing US tariff regimes—are accelerating AI deployment. Yet implementation is patchy at best, and major technical hurdles must be overcome if the technology is to deliver on its promises.

The report builds on a survey of more than 800 business leaders across Europe, North America and Asia-Pacific, along with expert interviews.

Key findings include:

- **Geopolitical uncertainty has reached levels rarely seen in decades, disrupting global businesses.** Today's risk environment rivals the most consequential moments of the modern era, reflecting the volatility of US economic and trade policy under president Donald Trump, along with threats to supply chains from regional conflicts.

¹ Computer History Museum, "1941: Semiconductor diode rectifiers serve in WW II", <https://www.computerhistory.org/siliconengine/semiconductor-diode-rectifiers-serve-in-ww-ii/>

² Forbes, "How The Pandemic Has Accelerated Cloud Adoption", January 2021, <https://www.forbes.com/councils/forbestechcouncil/2021/01/15/how-the-pandemic-has-accelerated-cloud-adoption/>

³ Harvard Magazine, "How AI Is Reshaping Supply Chains", August 2025, <https://www.harvardmagazine.com/science-technology/harvard-kennedy-school-artificial-intelligence-supply-chains>

- **Companies are accelerating AI deployment in response to current turmoil, aiming to reconfigure supply chains and improve geopolitical resilience.** Amid geopolitical uncertainty, firms are focusing on two main supply chain strategies: restructuring operations and improving monitoring and visibility. Both are increasingly supported by AI. More broadly, AI is also helping companies adapt to policy uncertainty under Mr Trump and prepare for wider geopolitical shocks.⁴
- **A wide gap remains between AI ambition and implementation.** More than 90% of respondents report either testing or using AI for supply chain monitoring, optimisation and real-time decision support, but less than 20% say AI is fully integrated into such processes.
- **A confidence gap also exists within companies, with directors and junior employees far more concerned about barriers to implementation than their executives.** Two-thirds of CxOs expect a rapid financial return within 12 months, but less than half of junior leaders agree—and they are notably less confident about AI's integration into day-to-day supply chain practices.
- **Outdated IT systems and data infrastructure pose the largest threat to AI implementation,** with siloed or poorly classified data that are unavailable for AI analysis.
- **Business leaders downplay the new risks that AI implementation may introduce.** Less than one in five business leaders agree that AI implementation will increase vulnerability to cyber threats from hostile actors or lead to inaccurate risk assessments.
- **Business leaders must urgently address AI implementation challenges and define clear AI strategies.** Firms with a defined AI strategy are 3.5 times more likely to see a return on investment in the technology, yet only 22% of businesses have such a strategy.⁵

⁴ World Economic Forum, "AI will protect global supply chains from the next major shock", January 2025, <https://www.weforum.org/stories/2025/01/ai-supply-chains/>

⁵ Thomson Reuters, "The Future of Professionals", <https://www.thomsonreuters.com/en/c/future-of-professionals>

From gut to algorithm: supply chains turn to AI

Geopolitical flashpoints now translate more quickly into business shocks, binding war and commerce more tightly together.

Globalised supply chains, instant information flows, and heavy reliance on a few sources of critical technologies and minerals leave firms especially vulnerable. Russia's invasion of Ukraine sent European energy prices soaring,^{6,7} while fighting between Rwanda-backed M23 rebels and the Congolese army unsettles mineral supplies.⁸ Meanwhile, if China invades Taiwan, production of 90% of the world's most advanced chips could be crippled.^{9,10}

In recent years the Geopolitical Risk Index—a measure of tensions based on newspaper coverage—has reached levels not seen since the start of the wars in Afghanistan and Iraq.¹¹ Add in the US's volatile policymaking, exemplified by the Trump administration's willingness to impose sweeping tariffs in its pursuit of more favourable trade terms, and businesses face unprecedented levels of uncertainty. Indeed, the Trade Policy Uncertainty Index now sits at the highest level since its inception in 1960.¹²

This uncertainty is disrupting supply chains. Firms operating in conflict-affected areas face labour shortages and lower production capacity. When critical infrastructure is damaged, transport networks—including airports, ports, bridges and railways—can grind to a halt. Companies also risk being targeted by sanctions or tariffs, and face inflationary pressures when a conflict disrupts energy exports from key producing countries.¹³

In recent years the Geopolitical Risk Index has reached levels not seen since the start of the wars in Afghanistan and Iraq

⁶ European Central Bank, "The impact of the war in Ukraine on euro area energy markets", https://www.ecb.europa.eu/press/economic-bulletin/focus/2022/html/ecb_ebbox202204_01~68ef3c3dc6.en.html

⁷ Cipher, "This one chart shows Europe's struggle with high energy prices", <https://www.ciphernews.com/articles/this-one-chart-shows-europes-struggle-with-high-energy-prices/>

⁸ CSIS, "Critical Minerals, Fragile Peace: The DRC-Rwanda Deal and the Cost of Ignoring Root Causes", June 2025, <https://www.csis.org/analysis/critical-minerals-fragile-peace-drc-rwanda-deal-and-cost-ignoring-root-causes>

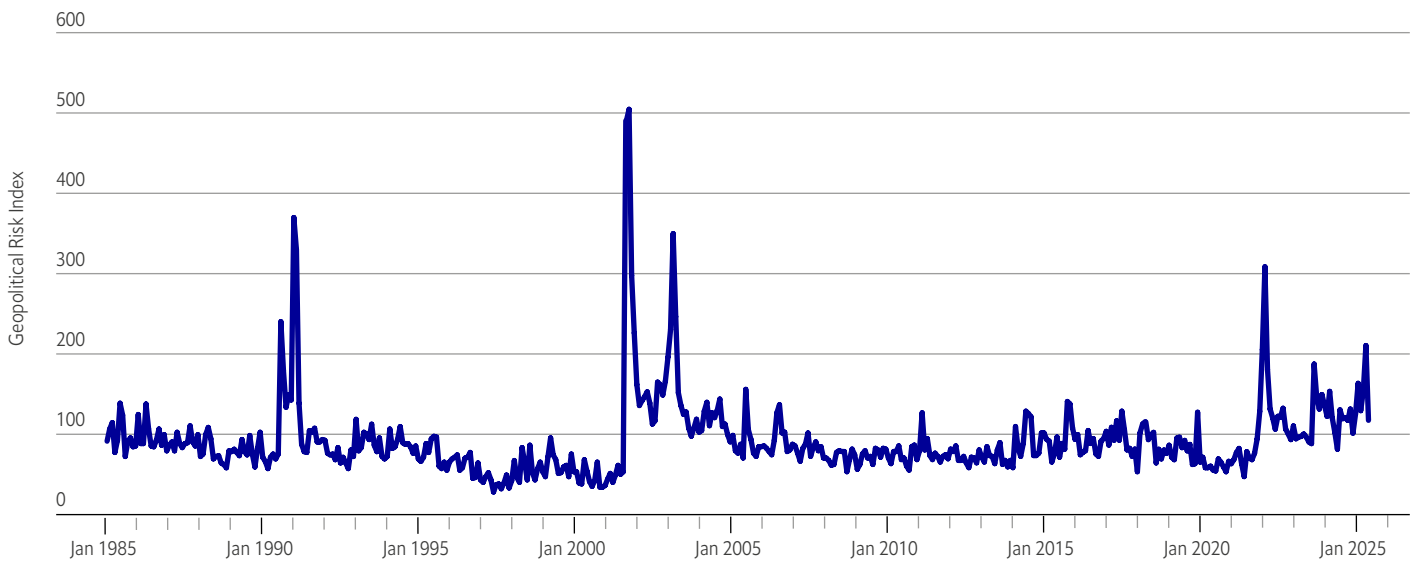
⁹ EIA, "Amid regional conflict, the Strait of Hormuz remains critical oil chokepoint", June 2025, <https://www.eia.gov/todayinenergy/detail.php?id=65504&utm>

¹⁰ The New York Times, "Amid regional conflict, the Strait of Hormuz remains critical oil chokepoint", Dec 2024, <https://www.nytimes.com/2024/12/31/opinion/china-taiwan-war-america.html>

¹¹ Geopolitical Risk Index, <https://www.matteoiacoviello.com/gpr.htm>

¹² Economic Policy Uncertainty, "Global Economic Policy Uncertainty Index", https://www.policyuncertainty.com/global_monthly.html

¹³ Chi Wei Su, Rongrong Dong, Meng Qin, "Do geopolitical risks impede the global supply chain?", Finance Research Letters, Volume 85, Part A, 2025, <https://doi.org/10.1016/j.frl.2025.107811>

Figure 1. Geopolitical risk has surged since Russia's invasion of Ukraine

Source: Economic Policy Uncertainty

New tariffs are also causing shortages of components—although not yet on the scale seen during the covid-19 pandemic. Still, the risk of empty shelves looms, especially if the US imposes further tariffs on major trading partners like China.¹⁴ Across industries, 76% of business leaders report that their organisation is experiencing a decrease in the availability of inputs or components as a result of the US policy shifts under the Trump administration.

In response, companies are dedicating resources to tracking policy announcements and then factoring them into planning. “We’ve got a team now that watches whatever Mr Trump decides and assesses the financial implications for our businesses,” says Dr Clive Rees, senior vice president and head of global supply chain at Japanese technology services and equipment provider, Fujitsu.

With American policy changing on an almost daily basis—and triggering responses from multiple other

countries—even well staffed, expert teams are struggling to plan for a full range of viable scenarios. Instead, businesses are turning to AI with its ability to parse endless data and variables in real time.

Just as cloud computing and remote work defined corporate responses to the pandemic, AI is emerging as the go-to technology for managing today’s geopolitical uncertainty.

More than three-quarters of firms have at least partially integrated AI into predictive analytics, real-time decision-making and supplier monitoring (see Figure 2). Most also expect these applications to transform their operations within three years. These areas allow companies to rejig supply chains on the fly—whether in response to sanctions, storms or sudden tariffs, or in anticipation of disruption. Executives view them not as incremental upgrades but as tools that could redefine how their firms manage risk.

¹⁴ FP, “No need for hoarding”, <https://foreignpolicy.com/2025/08/08/trump-tariffs-shortages-consumers/>

A significant majority (71%) of business leaders say their company has accelerated the pace of AI deployment in response to the Trump administration's policy uncertainty. Respondents in Europe (78%) and Asia-Pacific (81%)—those likely to be on the receiving end of US tariffs—are far more likely to be accelerating AI deployments than their North American counterparts (57%).

Vehicle manufacturer Mammot Group is used to sudden changes in terms of trade, with its

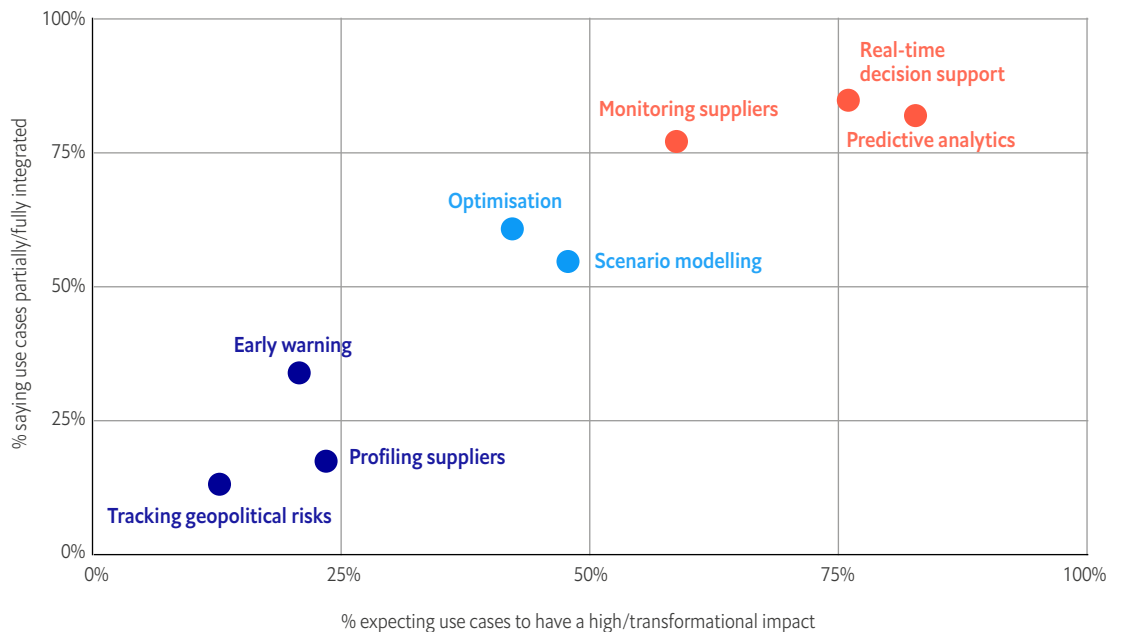
domestic Iranian market regularly subject to sanctions that can require sudden supply chain reorganisations. To manage such scenarios, the company has developed a data platform that exposes manufacturing, sales and supply chain data to machine learning algorithms to anticipate disruptions.

"With geopolitical situations changing daily, we must be able to switch suppliers on the fly," says Javad Mohammadi, the group's chief procurement officer. "Ten years ago, procurement ran on gut; today we need data to predict market shifts."

With countries from India to Switzerland now threatened with higher tariffs on US-bound exports, many other companies in Asia and Europe are using AI to pursue similar supply chain agility. Fujitsu, for example, is modeling a 'risk score' for its major suppliers, drawing on geopolitical alerts, natural-disaster feeds and financial metrics.

A significant majority (71%) of business leaders say their company has accelerated the pace of AI deployment in response to the Trump administration's policy uncertainty

Figure 2. AI is being widely integrated into areas where it is expected to yield significant impact
 Percentage who expect each of the following AI applications to have a high/transformational impact on supply chain management within the next three years and their level of implementation



Source: Economist Impact

Bosses dream, staff struggle

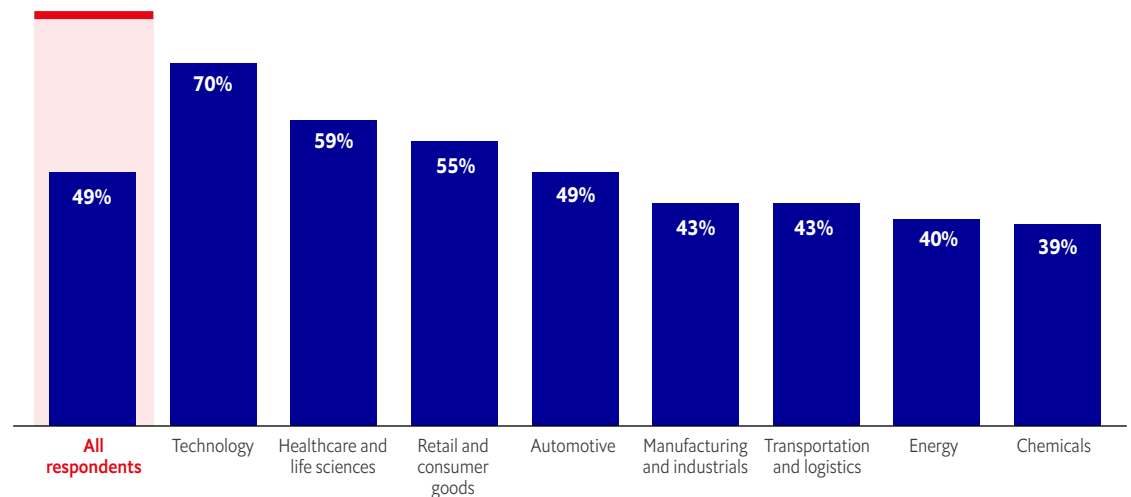
Despite high expectations, AI implementation in supply chains is still nascent. While executives race to adopt AI and avoid falling behind the adoption curve, the tools remain in their early stages of development. “At Fujitsu, we are still learning about how to use AI to try and be more accurate: you can’t predict conflicts or natural disasters easily,” says Dr Rees.

In fact less than half (49%) of business leaders expect a clear financial payoff from AI-enabled

geopolitical risk tools within the next 12 months—although Europe (58%) and Asia-Pacific (47%) based respondents are notably more optimistic than their North American (42%) counterparts, reflecting the greater appetite to deploy the technology. Yet technology firms stand apart. Seven in ten expect anticipate a return in that time frame. Unlike other sectors—where every firm anticipates at least one barrier to AI deployment—one in six technology firms sees none, leaving them better positioned to capture early gains (see Figure 3).

Figure 3. AI payoffs: tech is bullish, others lag

Percentage who agree/disagree with the fact that AI investments on managing geopolitical risks are expected to generate a clear financial return within the next 12 months



Source: Economist Impact

Non-executives are twice as likely as their bosses to say it will be difficult to implement a number of different AI supply chain use cases.

Even in areas where AI is considered transformational it is rarely fully integrated into supply chain functions. In fact, predictive analytics is the only area where AI usage could be considered 'mature'—52% of business leaders say AI is fully integrated in this area. By contrast, only one in five business leaders say AI is fully integrated into real-time decision-making or supplier monitoring.

Meanwhile, C-suite leaders are far more confident about AI implementation than the teams tasked with delivering it.

Mounting geopolitical tensions are speeding up AI's roll-out. But confidence about how easily it can be adopted is uneven inside firms. Executives see few obstacles; those closer to the day-to-day operations are far more cautious. The result is a confidence gap that can slow deployment. Non-executives are twice as likely as their bosses to say it will be difficult to implement a number of different AI supply chain use cases. Beyond implementation, more junior staff are also more pessimistic about returns: two-thirds of executives expect a payoff within 12 months, compared with 45% for junior leaders.

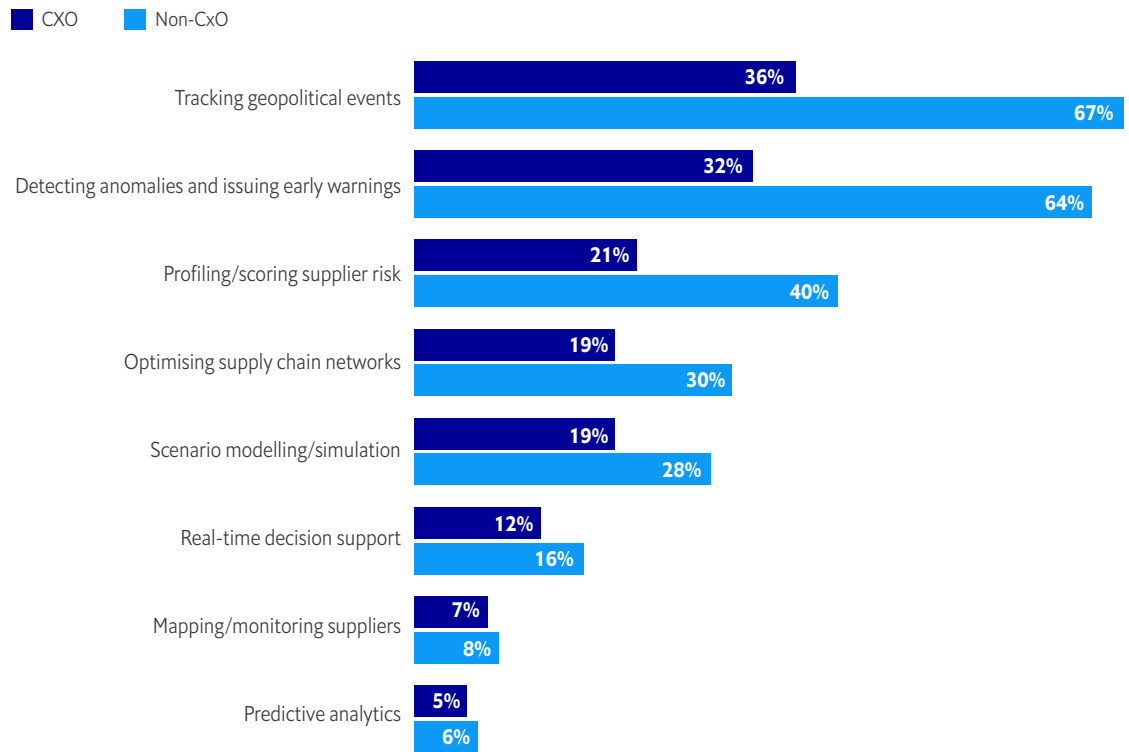
Table 1. The implementation gap—AI is rarely fully integrated into business activities

Use case	AI will have high/transformational impact within 3 yrs (% who agree)	Have started integrating AI (%)	Have fully integrated AI (%)
Predictive analytics	83%	82%	52%
Real-time decision support	76%	85%	20%
Supplier mapping/monitoring	59%	77%	17%
Scenario modelling/digital twins	48%	55%	11%
Supply network optimisation	42%	61%	7%
Early warning systems	24%	17%	4%
Supplier risk scoring	21%	34%	4%
Geopolitical tracking	13%	13%	3%

Note: percentages above 50% are highlighted in blue; those below 50% are highlighted in red.
Source: Economist Impact

Figure 4. The confidence gap—bosses say AI implementation is easy, staff say hard

Percentage saying it's somewhat/very difficult to implement AI into each application



Source: Economist Impact

“We are still learning about how to use AI to try and be more accurate: you can’t really predict conflicts or natural disasters easily.”

Dr Clive Rees, Head of Global Supply Chain at Fujitsu

Over the medium-term these differences tend to resolve. Executives and junior leaders alike expect AI to yield improvements in forecasting and scenario planning, as well as visibility into geopolitical exposure over a three-year period. Nevertheless, in the short term, this internal perception gap is a major risk. Senior leaders may greenlight initiatives that their technical teams view as premature or unworkable, leading to costly, failed AI initiatives that do not address the vulnerability of supply chains to geopolitical disruption.¹⁵

¹⁵ Axios, “AI is “tearing apart” companies, survey finds”, March 2025, <https://www.axios.com/2025/03/18/enterprise-ai-tension-workers-exec>

Old systems block new ambitions

The biggest brake on AI in supply chains is not the technology but the old systems it must run on. Such legacy infrastructure makes it difficult for organisations to draw on the latest available data. Even the most ardent advocates of AI caution that it is only as good as the information it acts on. Pascal Van Hentenryck, a professor at Georgia Tech, says that “without the right data, both within and outside the organisation, even the best forecasting methods can’t deliver real value.”

To allow AI models real-time access to internal and external data, companies must co-ordinate their various data pipelines, storage

To allow AI models real-time access to internal and external data, companies must co-ordinate their various data pipelines, storage and classifications systems

and classifications systems. As firms grow over time, however, they tend to do the exact opposite: accreting data in siloes and rendering it inaccessible to AI models. For instance, data might be stored in hundreds of formats, requiring transformation before it can be used by AI; large and inefficient databases are difficult to query, making it hard to pull data for real-time analysis; datasets might sit in different systems that first need to be combined.

Tackling these issues risks disruption to existing processes, meaning migrations must be phased and often done in co-ordination with compliance teams or even external regulators. As a result, only 22% of organisations say their current architecture is fully capable of supporting the unique demands of AI workloads.¹⁶

The inherent breadth and complexity of supply chains adds to the challenge. Companies must combine data from potentially thousands of different suppliers, transport and logistic partners and—increasingly in today’s uncertain environment—climate, conflict and geopolitical risk data.

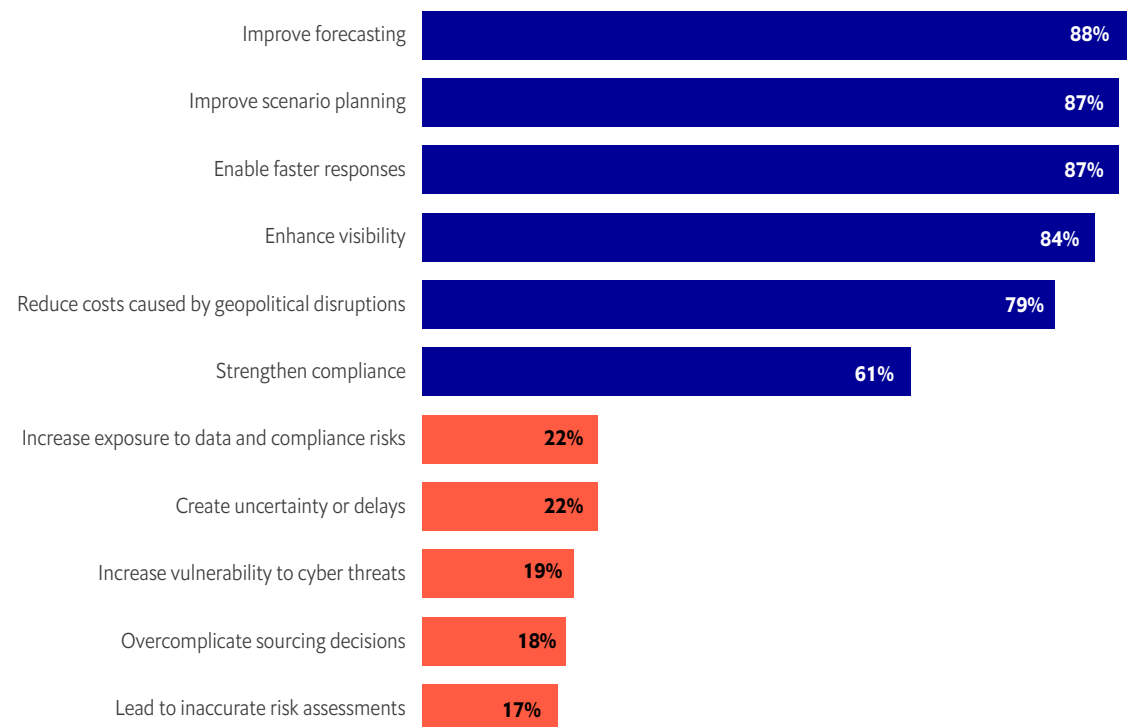
¹⁶ Databricks, “New Economist Impact Study Finds Only 22% of Enterprises Believe Their IT Infrastructure is Ready for AI”, November 2024, <https://www.databricks.com/company/newsroom/press-releases/new-economist-impact-study-finds-only-22-enterprises-believe-their>

Industry leaders are beginning to overhaul legacy systems to address this: GE Vernova, the power generation business spun off from GE, is using cloud technology to consolidate various enterprise resource planning (ERP) systems into a centralised warehouse, while German automaker BMW is building a data storage system from scratch to better integrate AI.^{17,18} But such

institutional and engineering changes take several years to deliver, delaying returns on investment in AI. Siemens, for example, took 18 months to migrate just 700 of its internal projects and 35 ERP systems to its internal cloud.¹⁹ US credit card company Capital One, meanwhile, took nine years to close its internal data centres and migrate data to the cloud.²⁰

Figure 5. Business leaders are confident AI will deliver returns, but few agree it will introduce risks

Percentage who agree that AI will have the following effects on their organisation over the next three years



Source: Economist Impact

¹⁷ Oracle, "GE Power adopts a modern supply chain strategy with Oracle Cloud SCM", <https://www.oracle.com/customers/ge-power/>

¹⁸ CIO Inc, "BMW Future-Proofs Ops With Cloud and AI", June 2025, <https://www.cio.inc/bmw-future-proofs-ops-cloud-ai-a-28763>

¹⁹ dbt Labs, "Siemens implements a data mesh architecture at scale with dbt Cloud", <https://www.getdbt.com/case-studies/siemens>

²⁰ Snowflake, "How Capital One Leverages the Power of Data in the Cloud" April 2021, <https://www.snowflake.com/en/blog/how-capital-one-leverages-the-power-of-data-in-the-cloud>

“AI is coming right at you like a freight train, but the process of changing the way the organisation is built is not happening as fast as the tech itself rolls out.”

Kevin O'Marah, Founder of Zero 100

Business leaders, however, appear worryingly complacent about the challenge of modernising data architectures. Less than half of C-suite executives (42%) see legacy systems as a critical challenge to AI implementation, even though most of their subordinates are worried about it. That suggests company leaders could be surprised by delays and challenges to implementation they do not anticipate.

As supply chain leaders rush to implement what they believe is a breakthrough technology, there is also a chance they are underestimating the potential for negative outcomes.

Less than a quarter expect any AI-related risk to grow over the next three years—including vulnerability to cyber risks and inaccurate assessments. By contrast, more than four in five business leaders agreed that AI will have a variety of positive impacts over the next three years from enabling faster responses to geopolitical disruptions (87%) to improving forecasting capabilities (88%) and scenario planning capabilities (87%).

The ‘black box’ nature of AI, whereby models make predictions or recommend courses of action without an explanation of how conclusions were reached, creates entirely new risks in supply chain

management. Over indexing on past patterns, or analysis of incomplete data, could lead to flawed recommendations.²¹ Companies may also find themselves subject to ‘poisoning’ cyber attacks, where data are planted to influence AI models.²²

If companies are to achieve the benefits their leaders expect from AI, planning is urgently needed to address these risks. Industry analysts believe companies need to rapidly formulate AI-specific strategies that do not simply address how the technology will be adopted, but how it can be safely integrated into existing processes.

“AI is coming right at you like a freight train,” says Zero100 founder and supply chain consultant, Kevin O'Marah. “But the process of changing the way the organisation is built is not happening as fast as the tech itself rolls out.”

Thomson Reuters, a professional service company, has found that firms with a defined AI strategy are 3.5 times more likely to see a return on investment in the technology. Yet across industries, only 22% of businesses have such a strategy.²³

Coherent strategies for AI implementation and risk management should acknowledge the data challenges—which must be overcome first. These strategies also need to be formulated by collaboration between executives and implementing teams, with due attention paid to the concerns of more junior employees.

For now, firms appear to be struggling to develop strategic approaches to AI. Nearly half of respondents (44% of CxOs and non-CxOs alike) cite organisational inertia as a significant barrier to using AI for geopolitical resilience. But without a defined strategy that provides clear mandates and tight cross-unit co-ordination, even pilots that show promise may fail to get off the ground.

²¹ Trend Micro, “Exploiting Trust in Open-Source AI: The Hidden Supply Chain Risk No One Is Watching”, July 2025, <https://www.trendmicro.com/vinfo/gb/security/news/cybercrime-and-digital-threats/exploiting-trust-in-open-source-ai-the-hidden-supply-chain-risk-no-one-is-watching>

²² NIST, “NIST Identifies Types of Cyberattacks That Manipulate Behavior of AI Systems”, January 2024, <https://www.nist.gov/news-events/news/2024/01/nist-identifies-types-cyberattacks-manipulate-behavior-ai-systems>

²³ Thomson Reuters, “The Future of Professionals”, <https://www.thomsonreuters.com/en/c/future-of-professionals>

To make AI work, start with the basics

AI offers huge promise, but also real peril. The technology looks well suited to the current era of uncertainty and complexity, yet companies have bet so heavily on it that failure could leave them both poorer and more exposed to volatility.

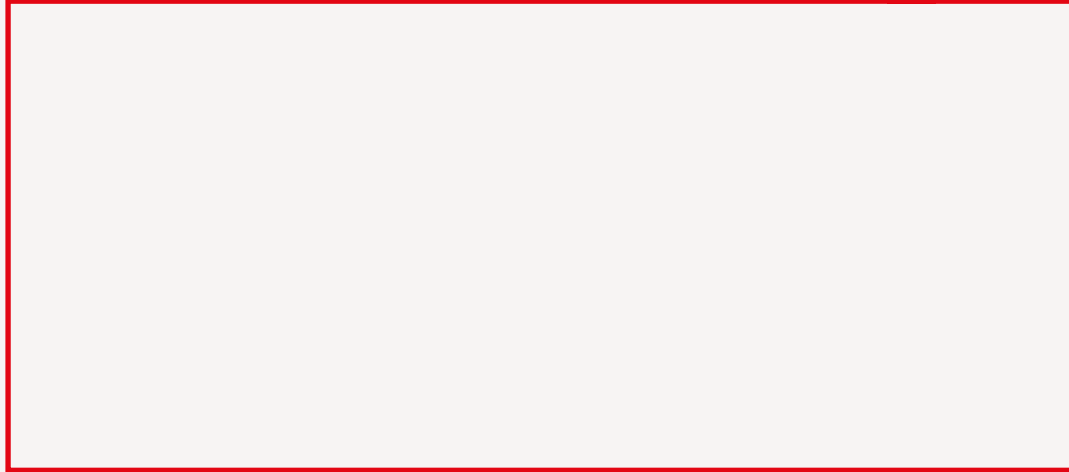
To capture its benefits, executives must address the implementation and confidence gaps associated with AI. That means probing why technology teams have so far failed to fully integrate AI into most business functions and why employees remain doubtful this can be done easily.

The priority is to modernise outdated IT and data systems, enabling real-time access to accurate, unified datasets across supply chains. Firms should accept that this will take years and begin with measurable, high-impact applications such as predictive analytics and supplier monitoring. Additionally, a company-wide AI strategy should cover data infrastructure, implementation, success metrics and risk safeguards—including protections against the misuse of AI.

Answers will vary by firm. However, common to all, is the necessity to fix the plumbing of data management. Internal and external data must be stored efficiently and classified effectively, so that it can be easily exposed to AI models, whenever needed. This work is not glamorous but without it, AI will fail.

Firms should therefore start by developing AI strategies that prioritise ground-up data engineering and warehousing solutions. Getting the basics right means AI will be far more effective in the long run.

While every effort has been taken to verify the accuracy of this information, Economist Impact cannot accept any responsibility or liability for reliance by any person on this report or any of the information, opinions or conclusions set out in this report. The findings and views expressed in the report do not necessarily reflect the views of the sponsor.



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