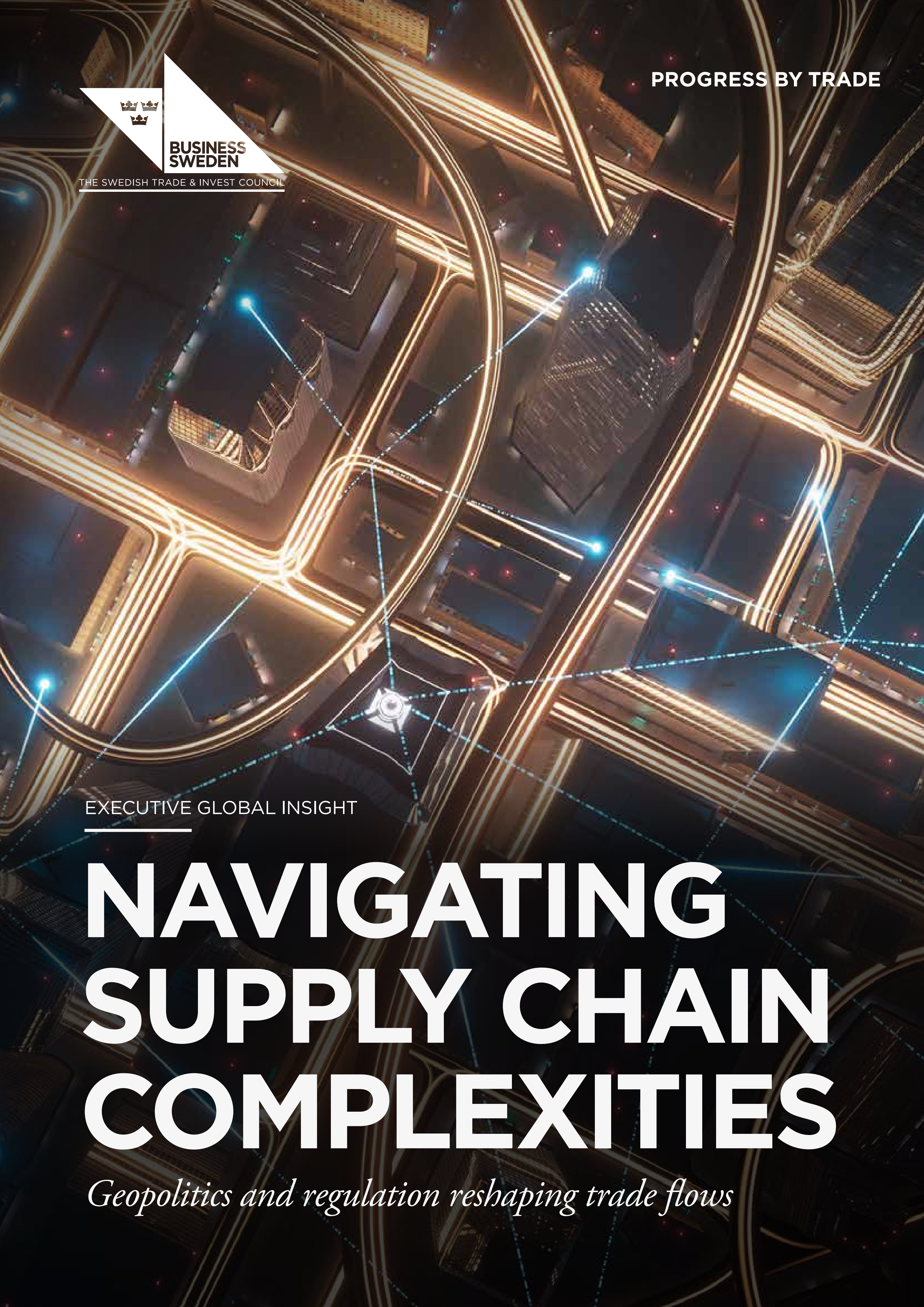


PROGRESS BY TRADE

BUSINESS SWEDEN

THE SWEDISH TRADE & INVEST COUNCIL

EXECUTIVE GLOBAL INSIGHT

NAVIGATING SUPPLY CHAIN COMPLEXITIES

Geopolitics and regulation reshaping trade flows

EXECUTIVE SUMMARY

RESILIENCE AS A COMPETITIVE EDGE

Global supply chains are undergoing profound shifts driven by geopolitical tensions, regulatory demands, digital transformation, and sustainability imperatives. This year's Executive Global Insights Report builds on our 2023 findings, showing how businesses are reinforcing resilience, balancing compliance with efficiency, and adopting digital tools to enhance agility.

Risk management and business continuity are now moving centre stage. Companies are strengthening supplier evaluations, contingency frameworks, and real-time monitoring to mitigate disruptions. Regionalisation is progressing unevenly: some businesses are bringing production closer to key markets, while others remain tied to low-cost regions. Rising transport costs and geopolitical uncertainties fuel these adjustments, yet full relocations remain rare.

Sustainability has become a compliance-driven priority, dictated more by regulation than by market incentives. New EU regulations demand greater traceability and transparency, creating heavy administrative burdens. Although digital tracking tools are being adopted, many companies view sustainability as an obligation rather than an advantage. Despite regulatory fatigue and geopolitical distractions, sustainability continues to drive long-term business success and should be viewed as both a compliance requirement and a lever for growth.

Large-scale supply chain transformations remain rare. Incremental improvements dominate, with predictive analytics and digital monitoring emerging as key enablers of resilience. Adoption, however, varies widely across industries and company size.

For Swedish companies, stability is no longer the defining feature of global supply chains – adaptability is. Those that invest in resilience, digital integration, and strategic sourcing will be best positioned to navigate volatility and seize emerging opportunities.

KEY TAKEAWAYS

From our close collaboration with Swedish companies and industry leaders, Business Sweden distils five key takeaways on the forces transforming supply chains – and the opportunities opening up in 2025.

- Many firms view sustainability as a compliance burden, but early adopters of green supply chain strategies can leverage regulation into a competitive advantage.
- Geopolitical instability, trade tensions, and regulatory shifts are core drivers of global supply chains.
- Crisis management has evolved, yet supplier diversification, contingency planning, and risk mitigation remain top priorities.
- Companies are selectively regionalising production, with Vietnam, India, and Mexico emerging as alternative hubs.
- China remains indispensable for scale, technology, and cost competitiveness, requiring businesses to maintain hybrid sourcing strategies.

This report is based on qualitative interviews with Swedish industrial and technology companies conducted in January–February 2025. Representing the export-oriented manufacturing sector – including advanced components, automation, and communication technologies – these firms operate strong global supply chains. Their perspectives highlight how Swedish companies are approaching resilience, sourcing, and operational challenges in today's volatile trade environment.

INTRODUCTION

GLOBAL SUPPLY CHAINS AT A CROSSROADS

Global supply chains face rising pressure from regulations, geopolitical instability, and costs. Companies are rebalancing networks, leveraging technology, and adapting to shifting trade policies.

1 THE CBAM SHIFT

The EU's Carbon Border Adjustment Mechanism (CBAM) is reshaping trade dynamics by introducing carbon pricing for imports of carbon-intensive goods. The policy levels the playing field between EU producers and foreign exporters of carbon-intensive goods such as steel, aluminium, and cement. Introduced in October 2023, with full financial obligations from January 2026, CBAM requires importers to purchase carbon certificates based on embedded emissions.

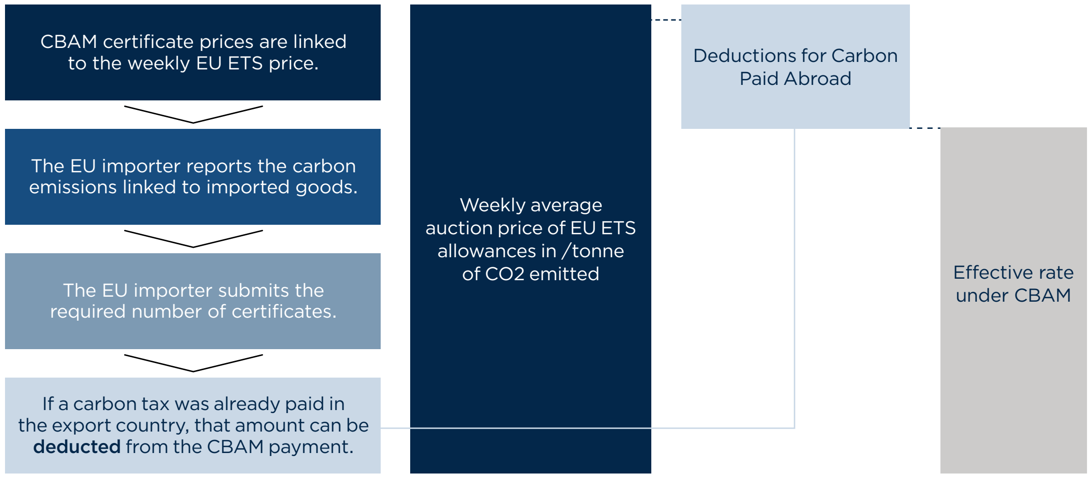
Countries most affected include Brazil, South Africa, and Turkey, with iron and steel industries particularly exposed [1]. Reactions vary: South Africa calls it unfair, India considers countermeasures, and China has raised concerns at the WTO. Least developed nations argue that CBAM disadvantages those without carbon pricing systems, while Japan, Singapore, and South Korea support the measure.

For companies, direct cost impact estimates are modest, at 2–6 per cent, but compliance is administratively heavy. Swedish firms are adopting digital tracking, yet many still see CBAM as a burden. In February 2025, the Commission proposed a de minimis exemption of 50 tonnes per year, easing requirements for 90 per cent of importers while covering 99 per cent of emissions [2]. The proposal is expected to be formalised after pending Council and Parliament approval by late 2025.

CBAM is already influencing sourcing decisions, encouraging firms to seek lower-carbon suppliers. Full relocations remain unlikely due to high costs, but greener procurement is gaining traction. With CBAM expected to expand to all sectors covered by the EU Emissions Trading System (ETS) by 2030, early adopters will gain resilience and market advantage.

[1] S&P Global Commodity Insights, S&P Global Market Intelligence Global Trade Atlas
[2] European Commission 2025, CBAM: new Commission proposal will simplify and strengthen implementation

HOW IS THE CBAM COST CALCUATED?



Source: European Commission

2 CS3D AND CORPORATE ACCOUNTABILITY

The Corporate Sustainability Due Diligence Directive (CS3D), adopted in July 2024 and amended by the EU Omnibus Directive in April 2025, is reshaping supply chain management by mandating that companies identify and mitigate human rights and environmental risks.
Initially, the directive applied to EU companies with over 1,000 employees and EUR 450 million global turnover, as well as to non-EU companies generating the same turnover [3] in the EU. However, the transposition deadline by Member States has been postponed to July 26, 2027, and company compliance is being implemented in three phased waves starting July 2028. In the first phase, it will apply to EU companies with over 5,000 employees and over EUR 1.5 billion in turnover. SMEs are exempt.

CS3D demands greater supplier transparency and verifiable sustainability data. Swedish and European firms are investing in carbon footprinting, supplier due diligence, and traceability, but full visibility across deep-tier suppliers remains a challenge. Many rely on self-reported data lacking standardised verification.

Compliance requires stricter sourcing policies, more supplier engagement, and digital monitoring tools. Costs are rising, yet so are enforcement levels. Financial penalties and reputational risks are pushing companies to embed sustainability into procurement and risk management strategies.

The directive reflects a broader movement toward corporate accountability in global trade. Regulatory scrutiny is intensifying, forcing companies to adopt traceability solutions, standardise supplier data, and improve governance frameworks.

While compliance is complex, early movers can differentiate themselves with ESG-minded investors and customers. CS3D is accelerating the shift toward transparency, sustainability, and accountability – reshaping long-term supply chain strategies.

THE REALITY OF REGULATION

Businesses are facing an overwhelming surge of sustainability-related regulations that demand compliance.

65%

say their organisation's leadership team is too busy handling immediate business priorities or economic pressures to put a plan in place to measure the human rights impacts across its value chain.

27%

of C-suite leaders say their organisation understands the application of CS3D to their business.

€216m

The cost of non-compliance: Failure to comply with CS3D could result in a maximum average penalty of nearly €216 million per company for the organisations in our research.

1,200 C-suite leaders over 6 Countries: France, Germany, Italy, Poland, Spain and the United Kingdom.

6 key sectors: Consumer and Retail, Energy, Insurance, Private Equity, Real Estate and Transport and Logistics. Companies with a minimum turnover of at least €150m.

Source: DWF Group

[3] European Commission, Corporate sustainability due diligence

SCOPE OF THE CS3D

FIRST PHASE (JULY 2028)	SECOND PHASE (JULY 2029)	FINAL PHASE (JULY 2030)
Financial and employee threshold	Financial and employee threshold	Financial and employee threshold
EU COMPANIES **EUR 1.5 billion** turnover globally **>5 000** employees	EU COMPANIES **EUR 900 million** turnover globally **>3 000** employees	EU COMPANIES **EUR 450 million** turnover globally **>1 000** employees
THIRD-PARTY COMPANIES **EUR 1.5 billion** turnover in EU	THIRD-PARTY COMPANIES **EUR 900 million** turnover in EU	THIRD-PARTY COMPANIES **EUR 450 million** turnover in EU

Source: European Commission, CS3D Omnibus Directive

3 GEOPOLITICAL SHIFTS AND SUPPLY CHAIN RESILIENCE

Geopolitical instability and evolving trade policies are redefining global supply chains, forcing companies to reassess dependencies and strengthen resilience. The Geopolitical Risk with Trade (GPRT) index[4] rose 30 per cent from 2020 to 2024, underscoring mounting disruptions.

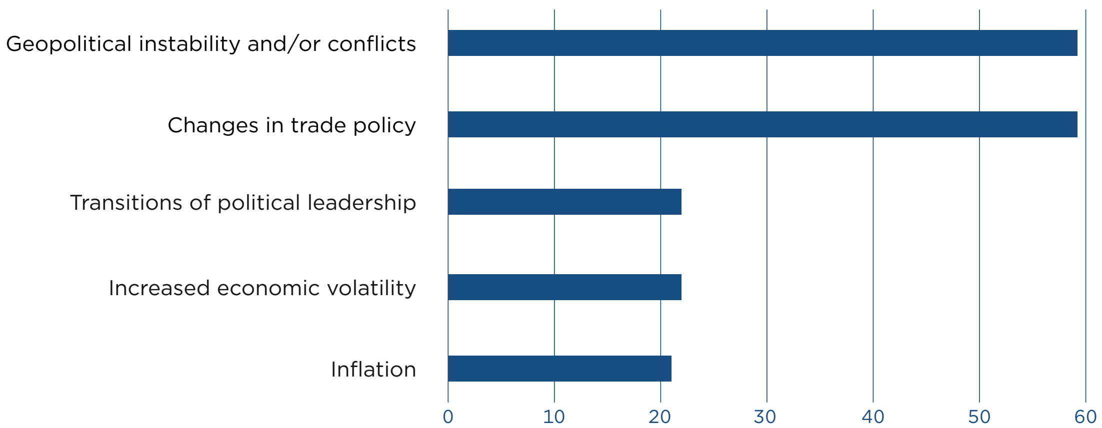
Tariffs have re-emerged as tools of influence. The United States leads a broader trend of tariff escalation and protectionist measures, increasing input costs and reshaping sourcing. Other governments are also aligning trade terms with political agendas, security, and environmental priorities. Companies must now treat tariff exposure as a core strategic risk, requiring agile sourcing, a diversified production footprint, and real-time trade intelligence.

Relocation of manufacturing is ongoing but limited by scalability and infrastructure. Vietnam, India, and Mexico are gaining ground as alternatives, yet China remains dominant in complex manufacturing and integration. Most companies adopt hybrid sourcing, balancing risk against capability.

Industries such as automotive, electronics, and batteries are increasingly regionalising supply chains in Europe to reduce risks and comply with regulations. The EU's Critical Raw Materials Act is pushing diversification of essential minerals sourcing.

Resilience has evolved beyond disruption management – it is now a driver of long-term competitiveness. In an era of fragmented, politically influenced trade, adaptive supply networks will determine success.

BIGGEST POTENTIAL RISK TO GLOBAL ECONOMIC GROWTH, NEXT 12 MONTHS
% of respondents



Source: McKinsey & Co, 2025, Economic conditions outlook, March 2025

[4] Geopolitical Risk with Trade Index (sub-category of The Caldara and Iacoviello GPR Index)

4 AI & DIGITAL TRANSFORMATION

AI, digital twins, and Integrated Business Planning (IBP) are transforming logistics, forecasting, and risk management. AI-driven scenario planning and predictive analytics are replacing manual processes, helping companies anticipate disruption and optimise supply chain flows.

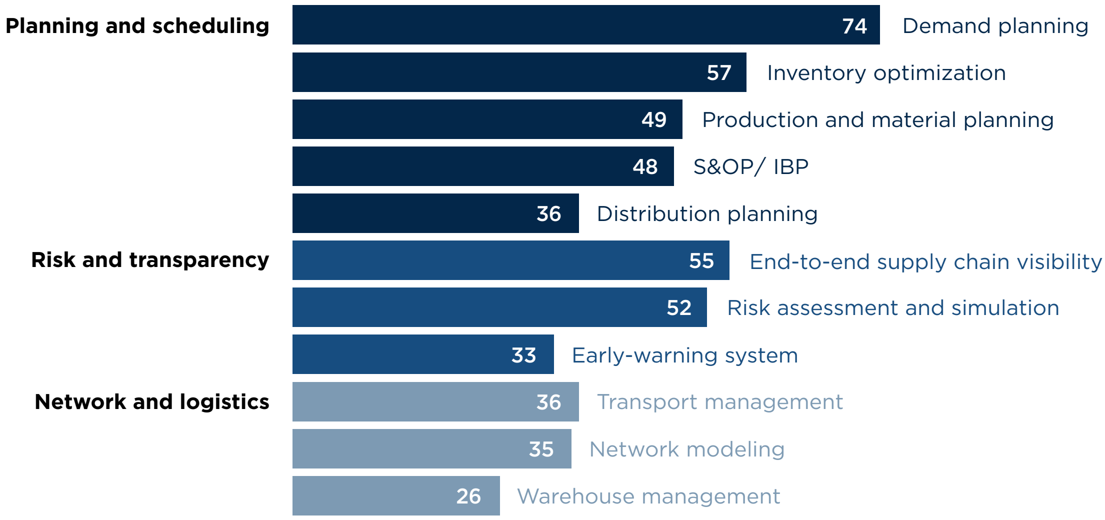
According to EY (2024) [5], 73 per cent of organisations are piloting or deploying generative AI in supply chains, though adoption varies across Europe. Germany's Industrie 4.0 initiative, France's Plan de Relance, and EU programmes are driving uptake, but integration costs and expertise gaps hinder mid-sized firms.

Digital twins – virtual supply chain replicas – allow disruption simulations, scenario testing, and logistics optimisation. This shift from reactive to predictive management enables companies to proactively identify bottlenecks and improve resilience.

Technology adoption remains uneven. Large firms are advancing in AI-driven risk modelling, while SMEs struggle with resources. Nevertheless, AI and automation are becoming essential, delivering efficiency gains, cost savings, and resilience.

For Swedish firms, integrating real-time AI analytics, IBP, and automation offers clear competitive advantage. Those prioritising digital transformation will achieve greater visibility, decision-making, and responsiveness – all essential in today's volatile supply chain landscape.

INTEREST IS RISING IN AI-BASED SUPPLY CHAIN TOOLS, ESPECIALLY FOR DEMAND PLANNING. Interest in advanced digital and AI-based tools, % of respondents.



Source: McKinsey Global Supply Chain Leader Survey, 2024

5 MANUFACTURING AND PRODUCT STRATEGIES

Manufacturers are restructuring production strategies to address regulations, rising costs, and shifting market demands. Rising wages and supply chain adjustments are narrowing historic cost advantages in Eastern Europe and Asia.

Regionalisation is accelerating as geopolitical tensions, industrial policy and economic nationalism push firms closer to key markets. The US and India are enforcing domestic assembly, while China expands regional hubs. Europe is adjusting policies to secure strategic industries.

Product strategies are also changing. Export restrictions on critical materials, such as germanium, have forced companies to secure alternatives, while compliance requirements are growing. Governments are pushing for self-sufficiency in key industries, fragmenting supply chains and regionalising production. This trend is now further reinforced by China's newly introduced export controls on key inputs like synthetic and battery-grade graphite, essential for EV batteries, deepening supply chain fragmentation.

Global integration is giving way to regional ecosystems. Cross-border trade is becoming more complex, with heightened barriers in critical industries, stricter sustainability requirements, and shifting cost structures affecting investment decisions.

Consequently, manufacturers are continuously reassessing and rebalancing production footprints to stay competitive amid evolving global trade dynamics.

MANUFACTURING SHIFTS

[5] EY 2024 Supply Chain Survey: Bridging the C-suite Disconnect

6 WORKFORCE AND COMPETENCE GAP

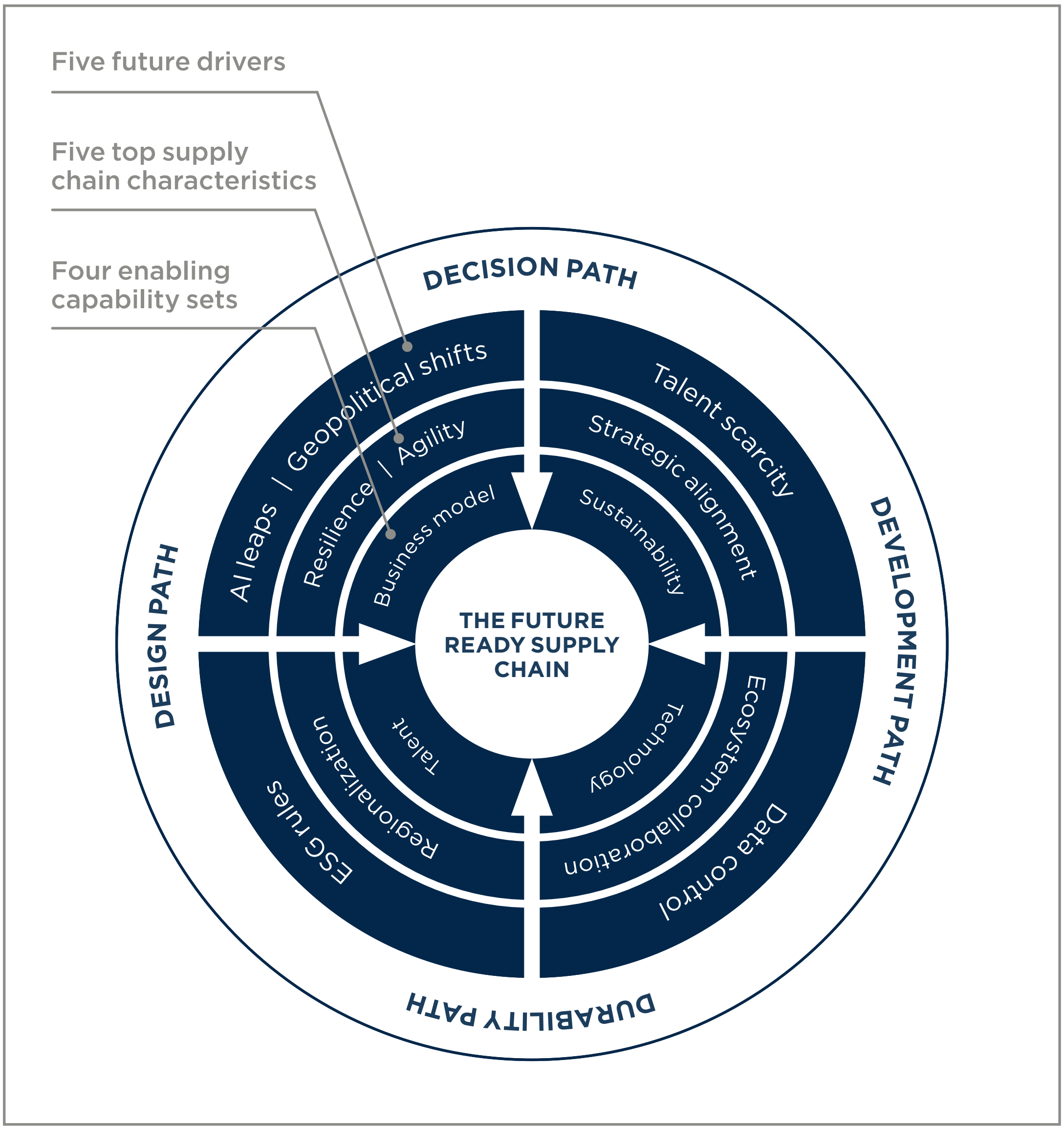
Supply chains are becoming more complex as macroeconomic and technological trends reshape workforce dynamics. Automation, digitalisation, and workforce shortages are driving structural changes. A 2024 DHL report [6] highlights a widening skills gap, with demand for supply chain professionals outpacing supply by 8:1. Gartner's 2024 analysis [7] shows that three-quarters of organisations prioritise automation and robotics, accelerating the shift to digital-first operations.

Integration is intensifying demand for expertise in AI, automation engineering, data science, cybersecurity, and risk management. However, companies struggle to attract and retain this talent, creating bottlenecks in traceability systems, supplier auditing, and sustainability tracking.

Technology is advancing faster than workforce capabilities, leaving gaps in compliance, risk management, and predictive analytics. AI-assisted forecasting, Integrated Business Planning (IBP), and sustainability reporting require skills that remain scarce.

To close the gap, companies must invest in training, upskilling, and targeted recruitment. Internal academies, cross-functional roles, and university partnerships can build future-ready talent pipelines. Retraining employees and embedding AI-driven planning systems will improve decision-making, reduce reliance on consultants, and increase agility.

The divide between digital transformation and workforce readiness is widening. Companies that prioritise talent development and digital fluency will be more resilient, ensuring competitiveness in an increasingly uncertain environment.



Source: 2025 Gartner. Inc., and/ or its affiliates.

[6] DHL, 2024
[7] Gartner, 2024

BUSINESS OPPORTUNITIES

LEVERAGING DISRUPTIONS FOR COMPETITIVE ADVANTAGE

Shifts in sustainability, regulation, and trade are creating growth opportunities. For Swedish companies, disruption can be reframed as a catalyst for innovation – opening pathways in compliance, diversification, and digital transformation.

CBAM COMPLIANCE AS AN ADVANTAGE

The EU's Carbon Border Adjustment Mechanism (CBAM) is widely perceived as an administrative burden, but it also presents significant opportunities. Companies with a lower carbon footprint can command premium pricing, enhance brand positioning, and stand out as sustainability leaders in the European market. Compliance will increasingly act as a market filter: firms that integrate emissions reduction into procurement and production strategies will win contracts where customers demand verifiable sustainability credentials.

CBAM is also accelerating investments in emissions-tracking technologies, AI-driven monitoring tools, and blockchain-based traceability platforms. Swedish firms in the technology and digitalisation space can capture rising demand for compliance tools, while manufacturers that proactively collaborate with low-carbon suppliers or assist partners in decarbonising will secure long-term resilience.

Circular economy strategies can further reduce exposure by reusing materials, investing in renewable energy, and pursuing carbon credits, which in turn lower costs while aligning with regulatory expectations. By turning CBAM into a driver of innovation rather than a constraint, Swedish companies can capture growth, reduce regulatory risk, and set themselves apart in global competition.

LEVERAGING CS3D FOR RESILIENCE

The Corporate Sustainability Due Diligence (CS3D) mandates stricter accountability, but for early adopters, it can be a strategic advantage. Companies that embed due diligence and traceability into procurement can reduce supplier risks, enhance resilience, and become preferred partners for multinational corporations under similar scrutiny. Investors and customers are increasingly ESG-driven, rewarding firms that demonstrate credible supply chain sustainability.

CS3D is also driving demand for digital transparency tools, AI-based compliance platforms, and supplier engagement solutions. Swedish companies that implement such systems early can streamline reporting, reduce reputational exposure, and influence industry standards. For technology providers, the directive creates new markets in automated data collection, supplier verification, and compliance management.

Beyond compliance, CS3D can improve cost efficiency. Optimising resource use, minimising waste, and improving energy performance lowers operational expenses while ensuring regulatory compliance. By using the directive to drive both compliance and operational improvement, Swedish firms can future-proof their supply chains, appeal to sustainability-minded customers, and secure a competitive edge in increasingly selective global markets.

STRATEGIC DIVERSIFICATION

Geopolitical instability and protectionism are fragmenting global trade, making diversification a core strategic necessity. Swedish companies can reduce their dependence on high-risk regions by expanding production into Vietnam, India, Mexico, and Eastern Europe — regions offering cost advantages, growing consumer markets, and favourable trade agreements. Diversified footprints allow businesses to hedge against tariff shocks, sanctions, or supply chain shocks while capturing new demand.

Multi-supplier and nearshoring models create structural agility. By alternating between Europe, Asia, and the Americas, companies can optimise cost structures, comply with local regulations, and maintain continuity when policies shift. Digital supply chain intelligence and AI-driven scenario planning further support diversification, allowing firms to model risks, adjust quickly, and allocate resources efficiently.

For Swedish manufacturers, this strategy not only reduces risk but also positions them to serve multiple growth markets at once. Investments in diversified production, regional partnerships, and alternative transport networks will provide resilience and long-term competitiveness in a fragmented global economy.

WINNING IN A CONSOLIDATING SUPPLIER LANDSCAPE

Supplier consolidation is accelerating across industries as compliance, cost pressures, and technological demands grow. Larger companies with strong financials, data systems, and traceability capabilities are increasingly favoured by OEMs and multinational buyers. For Swedish firms, this creates both risks and opportunities.

To remain competitive, Swedish companies must prioritise end-to-end transparency, supply chain visibility, and long-term reliability. Investing in digital tracking tools, compliance frameworks, and scenario planning will strengthen their position as stable partners. Differentiation will come from the ability to demonstrate oversight across multi-tier suppliers, offer consistent quality, and align with evolving sustainability regulations.

Swedish companies can also leverage consolidation to their advantage by acquiring smaller suppliers, expanding vertically, or entering into long-term partnerships that improve control over inputs and reduce volatility. By proactively strengthening supplier relationships and embedding digital capabilities, firms can secure contracts in a more selective procurement landscape.

In the long run, businesses that position themselves as transparent, stable, and future-ready suppliers will thrive as consolidation reshapes global supply networks.

END-TO-END VISIBILITY AND DIGITAL TWINS

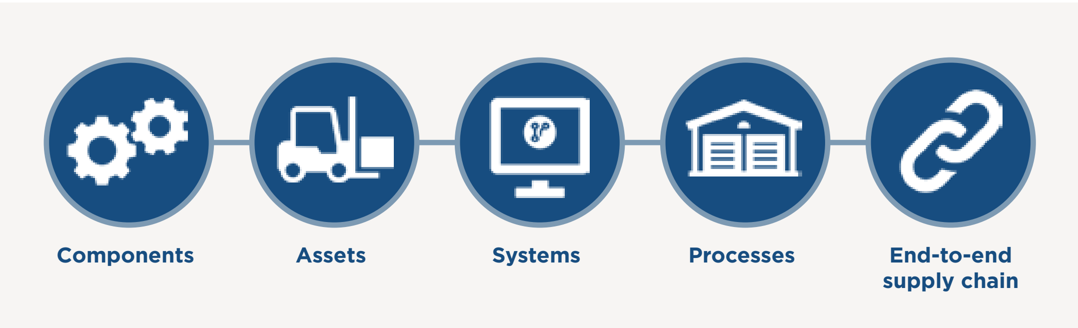
Complex supply chains demand greater transparency and predictive capabilities. Swedish firms that invest in digital twins, AI analytics, and automation can simulate disruptions, optimise logistics, and ensure compliance with emerging regulatory frameworks.

Beyond risk mitigation, visibility across multi-tier supplier networks enables full traceability from raw materials to final products. This level of transparency is becoming a critical factor for securing long-term contracts with major OEMs and multinational corporations. Customers increasingly demand proof of sustainability, ethical sourcing, and supply chain stability.

Investments in real-time tracking, predictive analytics, and AI-based supply chain tools help businesses anticipate delays, streamline procurement, and cut inefficiencies. Sensor-enabled logistics and automation further boost accountability and responsiveness.

For Swedish firms, adopting digital twins and AI-driven decision-making provides resilience, regulatory readiness, and competitiveness in global tenders. This investment ensures agility in an era of uncertainty and rising compliance pressure.

DIGITAL TWIN DEPLOYMENT AREAS



BUILDING SUPPLY CHAIN EXPERTISE

As supply chains digitalise and regulations tighten, the skills gap is widening. Demand for professionals in AI, data science, automation, and sustainability outpaces supply, leaving companies exposed. For Swedish companies, talent development is both a challenge and an opportunity.

Investing in internal academies, university partnerships, and targeted upskilling programmes will secure long-term workforce resilience. Embedding AI-driven planning systems and retraining employees for digital-first operations will reduce reliance on external consultants and enhance agility.

This focus on competence also strengthens brand reputation. Firms seen as investing in their workforce are more attractive to partners, customers, and ESG-conscious investors. As technology adoption accelerates, those that build digital fluency in-house will improve decision-making, strengthen compliance, and future-proof supply chain operations.

By bridging the workforce gap early, Swedish companies can turn a constraint into a competitive advantage, positioning themselves as leaders in resilient, digitally enabled supply chains.

CONCLUSION

A NEW ERA OF SUPPLY CHAIN COMPLEXITIES

Supply chains are undergoing unprecedented shifts. Swedish companies must rethink sourcing, supplier ties, and embrace digitalisation to effectively manage geopolitical risks and regulatory changes. Adaptability will define tomorrow's competitive landscape.

Global supply chains are being redefined by regulatory pressures, shifting trade dynamics, and technology. Past models no longer hold – success will depend on foresight, resilience, and the ability to turn compliance into long-term value.

BALANCING EFFICIENCY WITH FLEXIBILITY

Companies are reassessing sourcing strategies, weighing the benefits of regionalisation, multi-sourcing, and nearshoring. While some gain from localising production, others remain tied to low-cost hubs. A balanced, risk-adjusted approach is essential.

TECHNOLOGY AS A COMPETITIVE ADVANTAGE

Digitalisation is no longer optional. Predictive analytics, real-time monitoring, and digital twins strengthen decision-making and resilience. Firms that integrate technology effectively secure a long-term advantage.

REGULATIONS DRIVING CHANGE

CBAM and CS3D are reshaping supply chains, demanding transparency, supplier accountability, and emissions tracking. Compliance poses challenges, yet companies that embed sustainability into procurement will improve both resilience and market position.

REINFORCING SUPPLIER PARTNERSHIPS

Supplier consolidation favours businesses with financial stability and compliance systems. Strong collaboration beyond Tier 1 enhances transparency, reduces risk, and builds more resilient ecosystems.

ADDRESSING THE WORKFORCE CHALLENGE

Rapid change requires expertise in digital procurement, compliance, and AI-driven planning. Many companies lack skilled professionals, making training, upskilling, and cross-functional collaboration crucial to keep pace.

STRATEGIC RECOMMENDATIONS

Regulation, geopolitics, and technology are reshaping supply chains. Swedish companies must act decisively in three areas: strengthening supplier networks, accelerating digital and regulatory readiness, and adapting production to shifting global markets.

1 SUPPLIER NETWORKS

- Diversify sourcing to reduce dependency and build crisis-management capacity.
- Implement multi-tier visibility with tracking tools and real-time analytics to detect risks early.
- Partner with low-carbon suppliers to reduce CBAM costs and meet sustainability targets.
- Strengthen contingency frameworks with alternative sourcing routes, and adaptive risk management.

2 DIGITAL AND REGULATORY READINESS

- Invest in digital supply chain intelligence – AI analytics, digital twins, predictive modelling – to secure resilience and efficiency.
- Extend traceability beyond Tier 1 to meet CBAM, CS3D, and future regulatory requirements.
- Deploy advanced risk-assessment tools to evaluate suppliers, track sustainability, and minimise legal and reputational exposure.

3 REGIONALISATION AND MARKET SHIFTS

- Expand manufacturing hubs in key markets to enhance resilience, compliance, and customer proximity.
- Regionalise or localise production where viable to balance costs with trade compliance.
- Secure alternative sources for critical materials such as germanium and rare earths to hedge against export restrictions and supply shocks.

By acting decisively in these three areas, Swedish companies can navigate volatility and secure leadership in tomorrow's global supply chains.

BUSINESS SWEDEN CAN SUPPORT YOU

Business Sweden's supply chain experts help companies strengthen risk management, procurement, sustainability performance, logistics, and distribution. Our support also covers localisation, M&A, and make-or-buy decisions.

With a unique mandate from the Swedish government and the business sector, our global team offers strategic advice and hands-on support in more than 40 markets worldwide.

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