Deloitte.

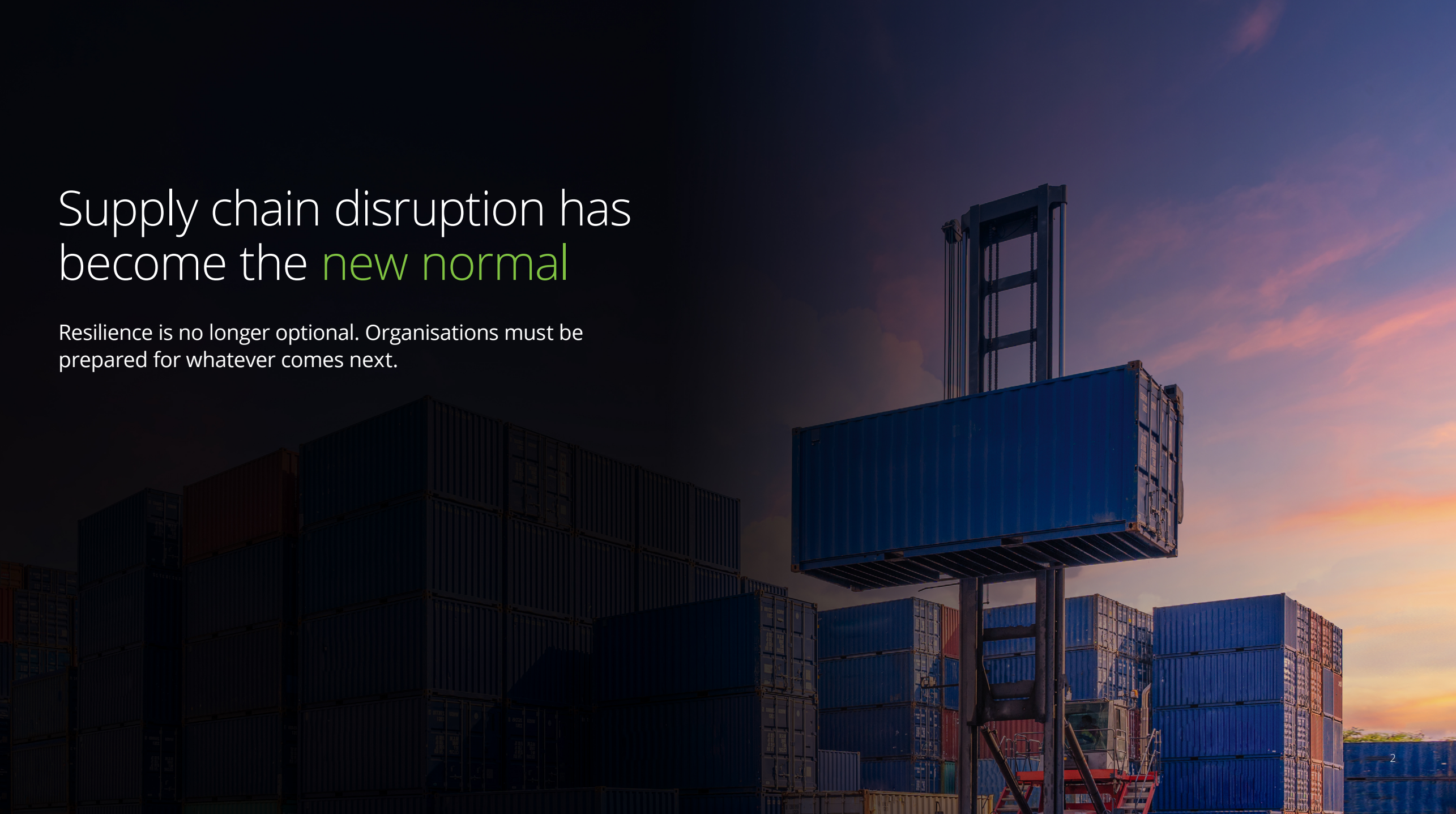
Together makes progress

Supply Chain Resilience

Prepare for disruption, turn resilience into advantage

Supply chain disruption has become the new normal

Resilience is no longer optional. Organisations must be prepared for whatever comes next.



Our focus on efficiency and globalisation has increased exposure to disruptions

For decades, lean and low-cost used to be the winning formula for supply chains. However, this focus on efficiency has made global supply chains increasingly fragile to sudden disruptions.

Unplanned shocks can cascade effortlessly through the entire ecosystem, eroding service, margins, and reputation. Resilience is no longer optional; it is a critical capability required to preserve value.

But resilience is not accidental. **It is a capability you build. Like a muscle**, it strengthens through practice, scenario rehearsal, and rapid learning.

Every decision has a consequence. The strategic question is no longer “what do we do?”, but “what is the cost of doing nothing?”

Exposure from multiple angles

Geopolitical

- **Trade Barriers**: tariffs and protectionist policies
- **Resource Control**: export limits on critical minerals
- **Conflict**: sanctions, regional instability, NATO Article 5

Tech & infrastructure

- **Cyber Threats**: ransomware and hardware attacks
- **Logistical Bottlenecks**: Congestion of critical nodes (e.g., Suez/Panama)
- **Grid Failure**: energy blackouts and grid failures

Environmental

- **Climate Extremes**: weather events disrupting operations
- **Scarcity**: depletion of natural resources
- **Health**: pandemic risks and aftershocks

Workforce

- **Labor Scarcity**: shortages due to aging population
- **Operational Disruptions**: strikes, lawsuits, and rising costs due to wage spirals
- **Digital Skills Gap**: workforce unequipped for future tech

Economical

- **Capital Cost**: interest rate volatility and liquidity issues
- **Supplier Risk**: insolvency and lending constraints
- **Inflation**: price surges
- **Trade Cost**: forex volatility

Compliance

- **Directives**: mandatory due diligence (CSDDD)
- **Reputation**: ESG accountability and stakeholder pressure
- **Carbon Costs**: emissions trading systems (ETS)

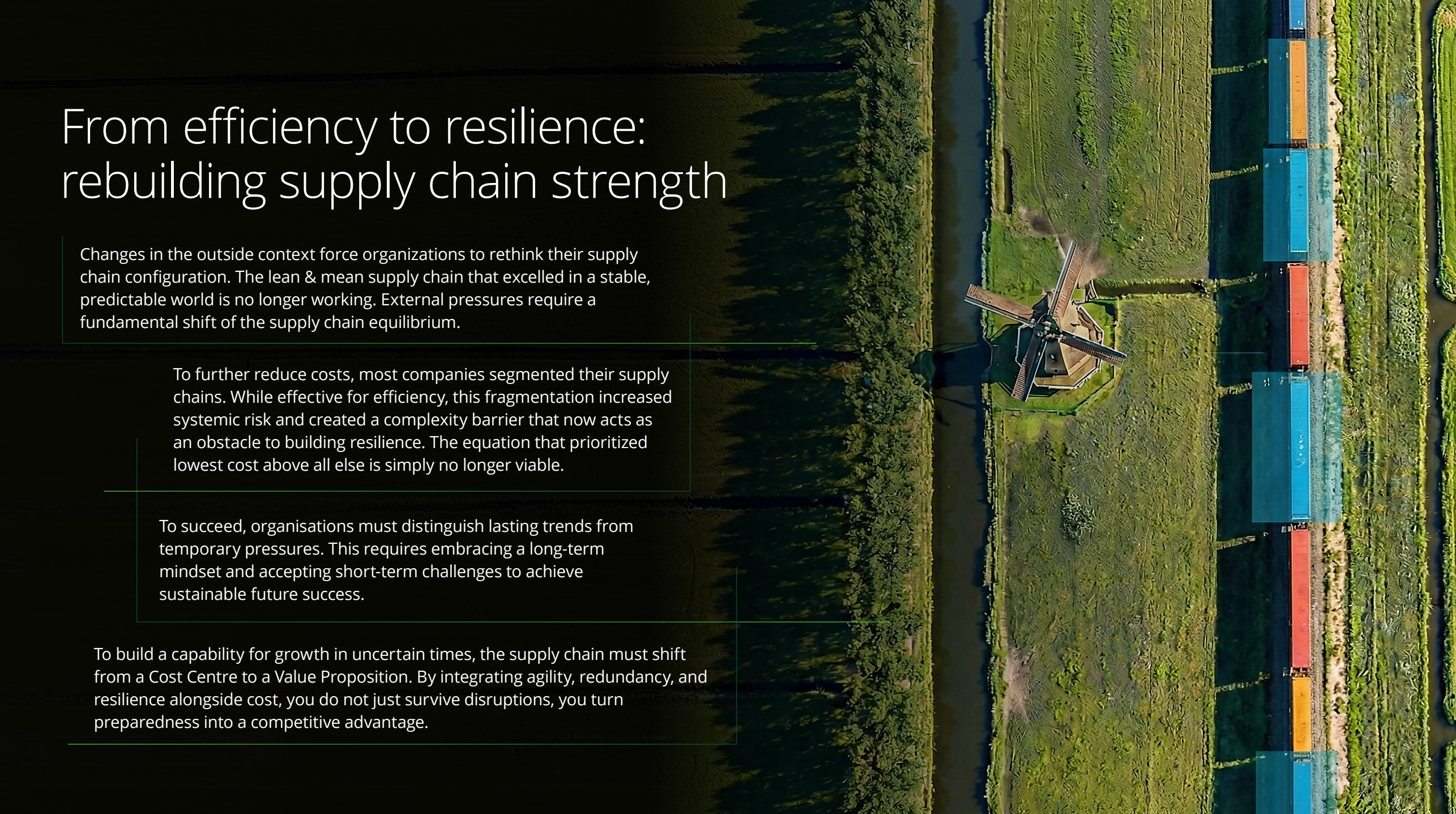
From efficiency to resilience: rebuilding supply chain strength

Changes in the outside context force organizations to rethink their supply chain configuration. The lean & mean supply chain that excelled in a stable, predictable world is no longer working. External pressures require a fundamental shift of the supply chain equilibrium.

To further reduce costs, most companies segmented their supply chains. While effective for efficiency, this fragmentation increased systemic risk and created a complexity barrier that now acts as an obstacle to building resilience. The equation that prioritized lowest cost above all else is simply no longer viable.

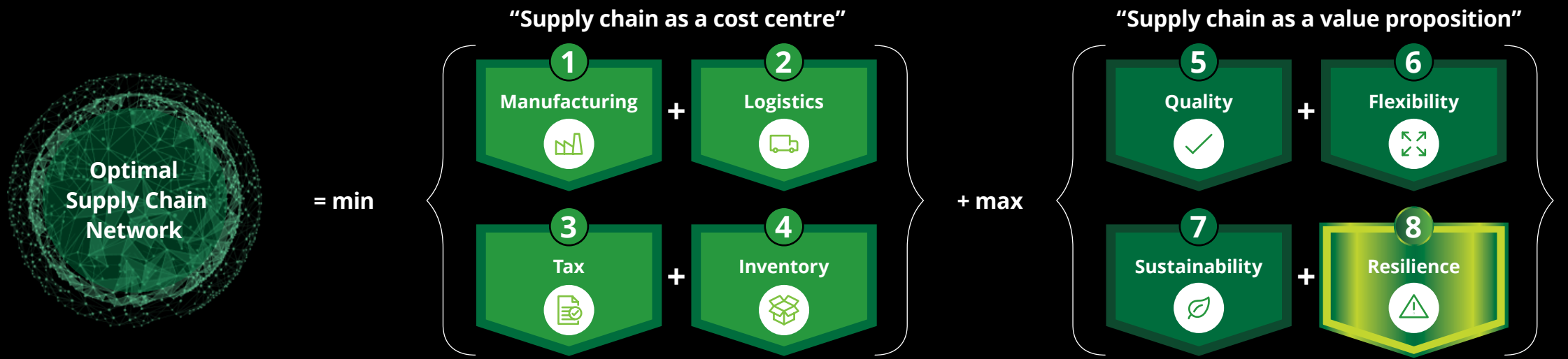
To succeed, organisations must distinguish lasting trends from temporary pressures. This requires embracing a long-term mindset and accepting short-term challenges to achieve sustainable future success.

To build a capability for growth in uncertain times, the supply chain must shift from a Cost Centre to a Value Proposition. By integrating agility, redundancy, and resilience alongside cost, you do not just survive disruptions, you turn preparedness into a competitive advantage.



Rebalancing the supply chain

Optimising the equilibrium requires balancing cost efficiency against the supply chain's potential as a competitive differentiator. This creates inherent tensions, such as the trade-off between lean inventory and building buffers for resilience. Leaders must navigate these choices to maximise value within the constraints of capital and regulation.



Subject to "restricting factors for supply chain":

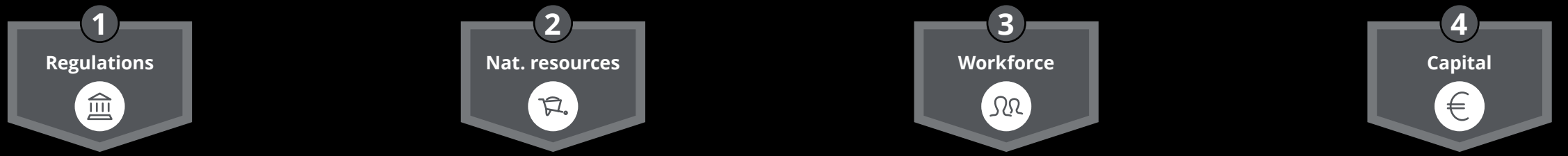
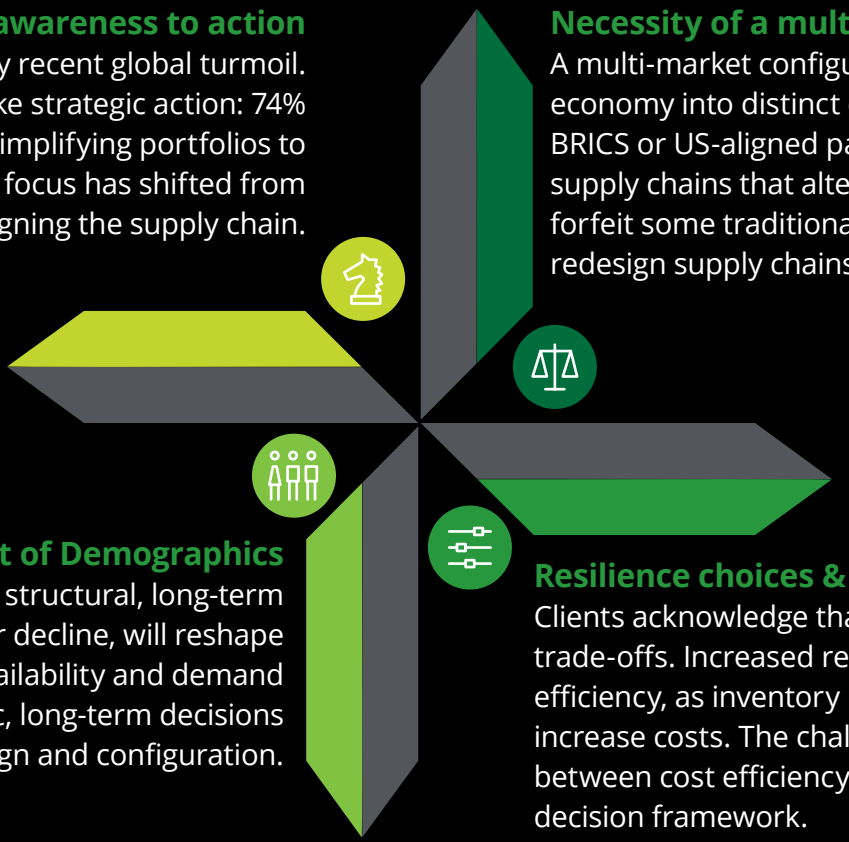


Figure 1: The supply chain equilibrium

Market signals: strategic considerations we're seeing

From awareness to action

Resilience has become a design choice, driven by recent global turmoil. All respondents to a recent survey[1] intend to take strategic action: 74% will manufacture more locally and 68% plan on simplifying portfolios to reduce exposure to vulnerable resources. The focus has shifted from reacting to disruption to structurally redesigning the supply chain.



Necessity of a multi-market set-up

A multi-market configuration denotes the fragmentation of the global economy into distinct economic and regulatory blocs (for example EU, BRICS or US-aligned partnerships). This trend is likely to produce parallel supply chains that alter how companies operate. While the shift may forfeit some traditional scale advantages, it presents an opportunity to redesign supply chains for resilience.

Impact of Demographics

Clients recognize demographic trends as a structural, long-term supply chain impact. Population growth, or decline, will reshape markets over time, directly affecting labor availability and demand patterns. These shifts necessitate strategic, long-term decisions about supply chain design and configuration.

Resilience choices & trade-offs

Clients acknowledge that building supply chain resilience requires trade-offs. Increased resilience often comes at the expense of efficiency, as inventory buffers, flexibility, and/or redundancy will increase costs. The challenge lies in deliberate choices and trade-offs between cost efficiency and resilience through a well-structured decision framework.

Resilience is a capability built across Strategy, Governance, Process, People, Data & Technology

Supply chain resilience is systemic, not siloed. A weakness in any single domain can cascade, amplifying disruption across the entire network. However, the trade-off is broader than the supply chain: the pain (cost and capital) sits within the operation, while the risk (availability) sits with the business. Therefore, a cross-functional, integrated approach is required to reduce single-point failures and accelerate recovery.

Building this capability requires more than just buffer stock. True resilience is the product of aligned decisions across Strategy, Governance, Processes, People, Data & Technology. Each domain performs a specific function in detecting, absorbing, and recovering from shocks—transforming the chain from a fragile series of links into an adaptive system.

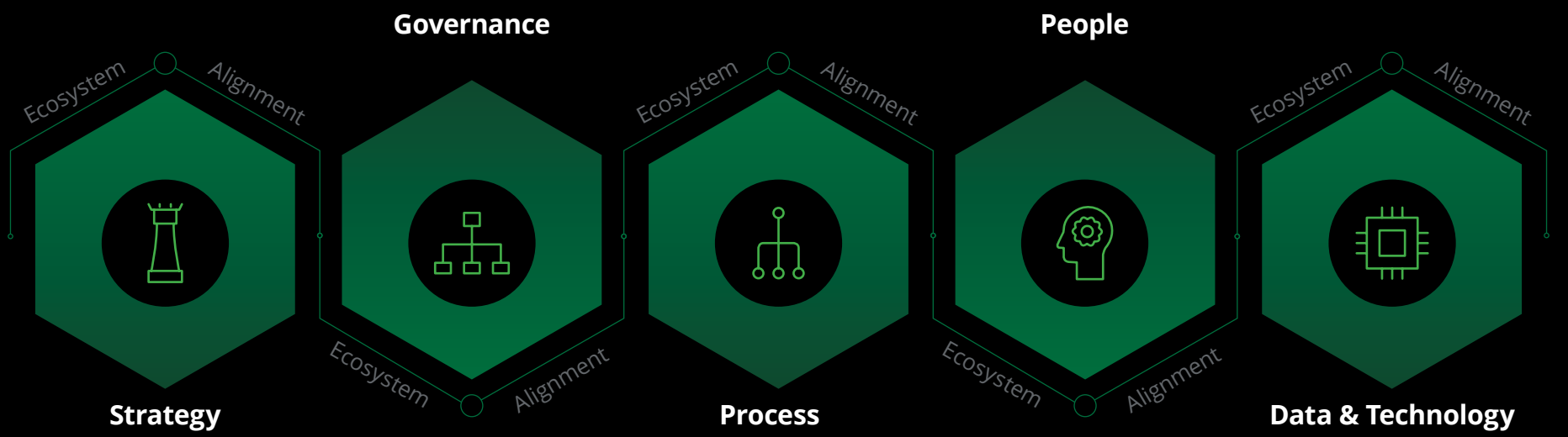


Figure 2: The Supply Chain Resilience Capability Framework

Resilience requires answers at every level. Where are your blind spots?

	Prevent disruption	React to disruption
Strategic Questions	• Should we trade efficiency for security by nearshoring operations to reduce geopolitical exposure? • Do we require a multi-sourcing strategy for critical categories to reduce dependency?	• Is our governance crisis-ready, with clear decision mandates? • Do we regularly pressure-test our strategy with executive “war-gaming” simulations to practice high-stakes trade-offs?
Tactical Decisions	• Have we embedded allocation priority into supplier contracts during shortages? • How do we fortify our digital backbone to prevent supply chain cyber threats and ransomware attacks?	• How do we cross train our workforce to be more agile under difficult circumstances? • Do we have Decision Intelligence tools to detect risks and instantly run “what-if” simulations to recommend the best course of action?
Operational Views	• Where must we decouple critical nodes by building strategic inventory buffers? • Can we improve reliability through rigorous quality-at-source programs and performance management?	• Does our workforce have tested playbooks to execute rapid workarounds without waiting for HQ? • Do we have the right commercial mitigations and communication in place?

Figure 3: Typical questions to ask yourself, not exhaustive

The economics of resilience: investing where it matters

Total immunity is an economic impossibility. Attempting to protect every part of the supply chain equally is not just costly, it is ineffective. Therefore, resilience is not only an operational challenge, but fundamentally an exercise in strategic choice.

Guiding these choices demands a segmentation of your portfolio across two dimensions:

- **Business Criticality** (*impact*):
  If this node fails, does the business stop? Does it threaten the P&L or brand reputation?
- **Disruption Risk** (*likelihood*):
  How susceptible is this specific category or location to external shocks?

This mapping provides the foundation for managing your risk profile. It allows you to distinguish signal from noise and to separate threats that require capital investment from manageable risks that can be absorbed.

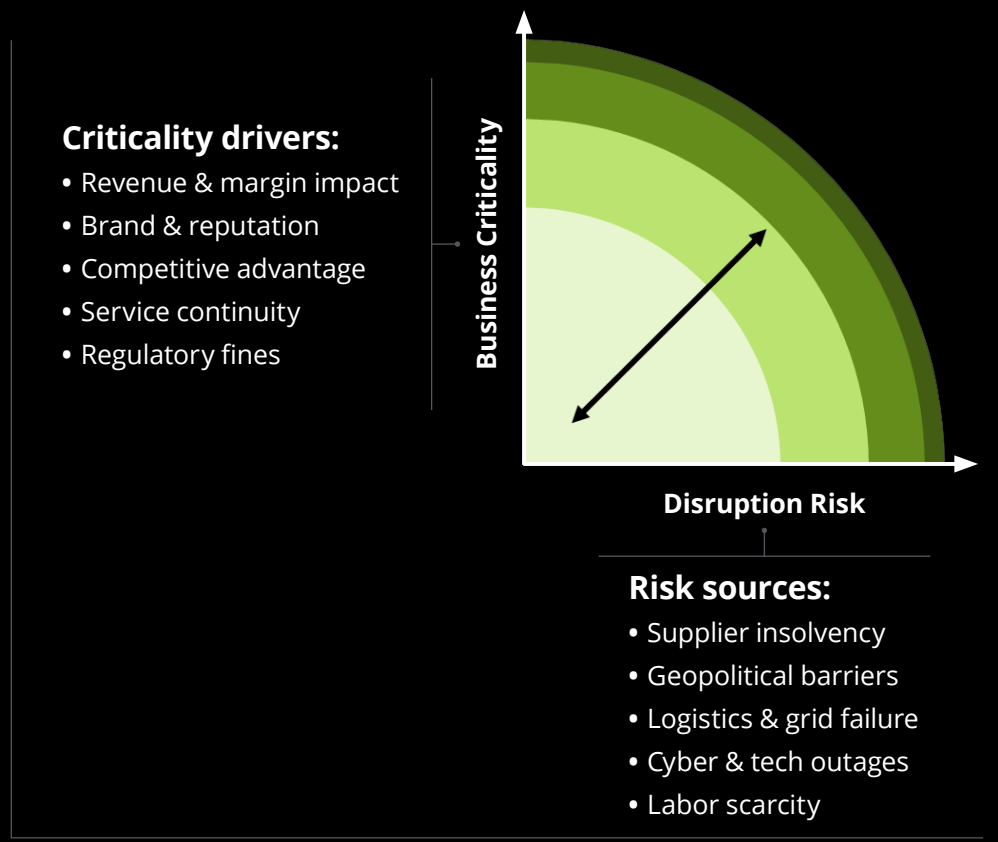


Figure 4: Risk prioritisation

Managing resilience as a portfolio

Risk segmentation serves as the foundation for active portfolio management. Managing the risk profile requires a deliberate choice for every exposure: allocating capital to structurally Prevent disruption, developing the operational agility to React, or consciously Accepting the risk.

To validate these trade-offs and define the investment envelope, a triple-lens decision framework is applied:

- **Desirability** (market view):
  - Which risks are your customers expecting to be mitigated?
  - What are competitors doing?
- **Feasibility** (operational view):
  - Is it technical and operational feasible to prevent the risk?
  - What can we do to react?
- **Viability** (financial view)
  - Is there a sustainable business case?
  - Does the cost of the hedge align with the value at risk?

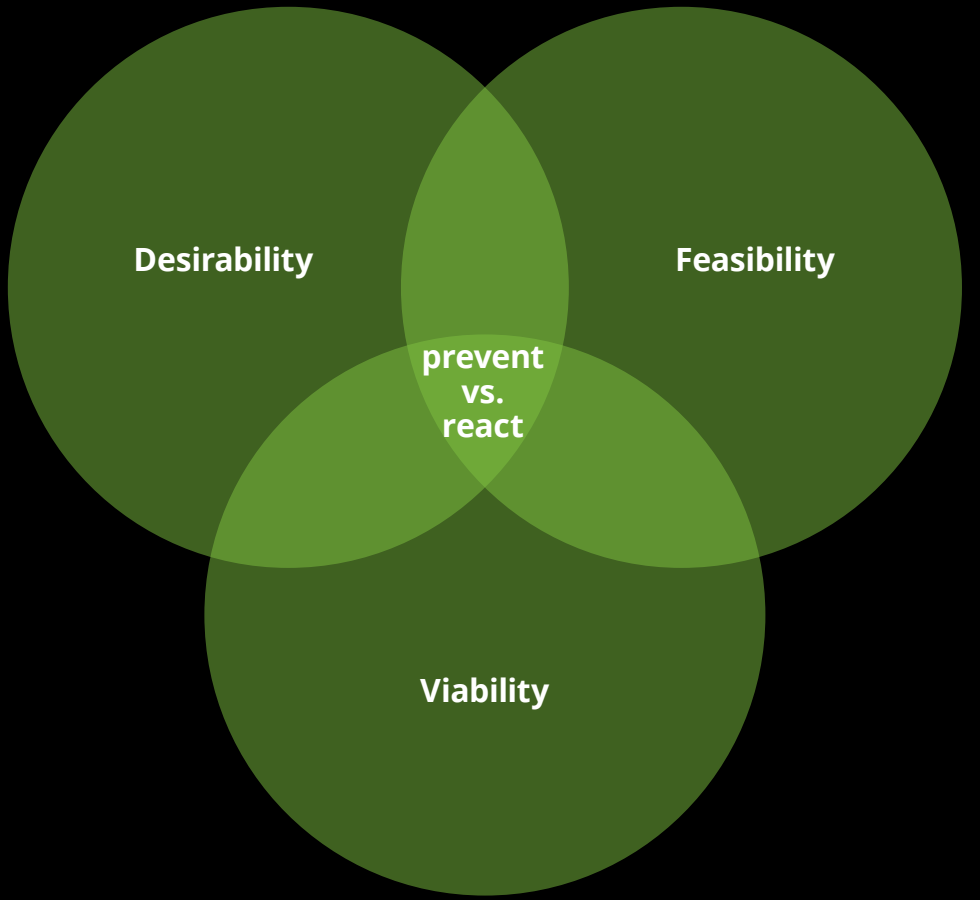
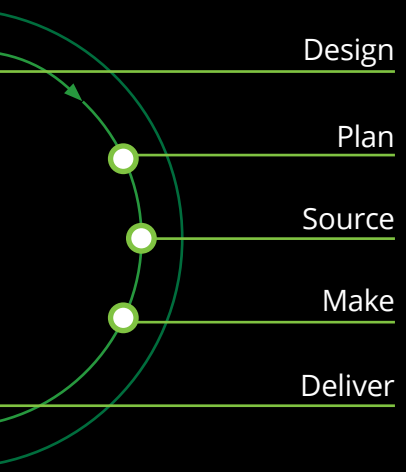


Figure 5: The triple-lens risk assessment

What we have seen at other companies (1/2)



Design

Resilience-by-design
During the 2020 chip shortage, while global production halted, Tesla achieved record growth by designing for flexibility.

When specific parts became unavailable, they pivoted to alternative chips and rapidly updated their software to ensure these new components functioned safely and seamlessly.

Takeaway: Embed "Design-for-Substitution" upfront. By using standardised interfaces and pre-qualifying alternates for critical items, you gain the agility to switch components quickly without compromising safety or compliance.

Plan

Shock-ready planning
A fire at Renesas, a major semiconductor manufacturer, disrupted automotive chip supply and intensified shortages.

Toyota, having learned from the 2011 tsunami, shifted to a hybrid JIT model that kept strategic safety stocks for critical components and stabilized supplier planning, controlling the impact by the fire.

Takeaway: Balance lean efficiency with risk-based protection. By segmenting parts by criticality and building buffers collaboratively with suppliers, you sustain high performance while preserving the ability to absorb major supply disruptions.

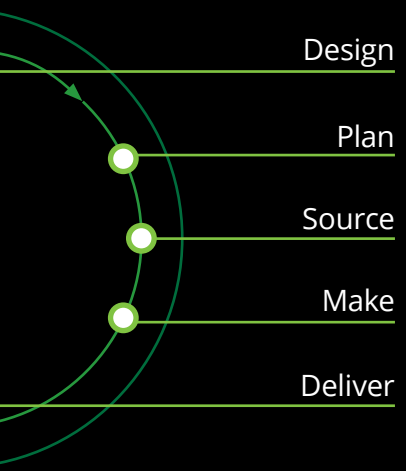
Source

Sub-tier transparent sourcing
Severe flooding in 2020 disrupted Schneider Electric's Guangzhou site and impacted the supply chain.

Schneider responded by refining its sourcing strategy, including multi-tier supplier risk mapping and engaging in dual sourcing for critical parts to improve supply continuity.

Takeaway: Standardize multi-tier visibility for critical parts to define "Time-to-Survive" versus "Time-to-Recover".
Tools like Deloitte's Supply Horizon automate this by linking sub-tier locations and recovery insights directly to your revenue-critical products.

What we have seen at other companies (2/2)



Make

Make-as-a-lever
Semiconductor manufacturing is highly concentrated, leaving it vulnerable to geopolitical shifts and natural disasters.

Samsung actively reduces geographic concentration risk by expanding its manufacturing footprint in the US, adding capacity in Texas and leveraging incentives to strengthen continuity of supply for critical components.

Takeaway: Use manufacturing footprint as a strategic resilience lever. By reducing geographic concentration and balancing regional production with available cost incentives, you secure your most critical supply lines while balancing financial performance.

Deliver

Logistical optionality
During the 2021 pandemic, port congestion and inland transport delays threatened global retail availability.

Walmart responded by securing surge logistics capacity, pulling inventory in earlier with suppliers, and reducing bottleneck exposure by diverting to less congested ports and flexing inland transport, keeping supply moving.

Takeaway: Maintain the agility to shift flows when disruption hits. Modern Decision Intelligence tools automate this by sensing bottlenecks in near real-time, visualizing your workforce with clear mitigation options and their impact on service and cost levels.

Return

Recover to secure
Rising demand for rare earth metals has turned supply into a geopolitical lever, representing a risk for supply chains.

ASML proactively limits this risk by scaling return flows, serving as both a sustainability initiative and a strategic resilience asset. By recovering components, ASML reduces its dependence on volatile raw materials and costs.

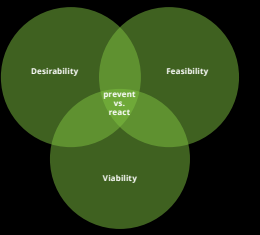
Takeaway: View return flows as both a value driver and a strategic risk-mitigation tool. By integrating circular recovery, you decrease reliance on constrained primary markets and secure a stable, internal supply of critical components.

Deloitte’s approach to Supply Chain Resilience (1/2)

Through the earlier discussed Supply Chain Capability framework, Deloitte solves the typical pain points associated with establishing enduring organizational resilience.

1 | Illuminate

2 | Strategize



Common pain points

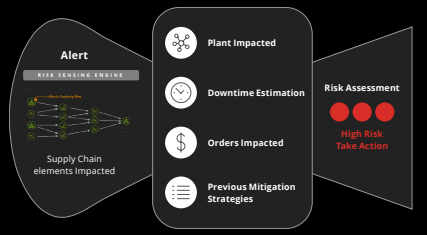
- Limited visibility in supply chain risks
- Gathering information is costly, slow, and unreliable
- Autonomous mapping is inaccurate and difficult to integrate
- Inadequate readiness for potential supply chain risks
- Lack of a clear economic framework to trade-off between “prevent“, “react” and “accept” relative to your competitor position

Our point of view

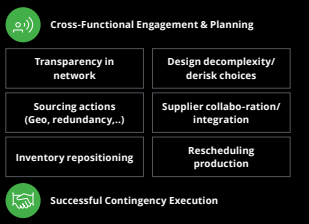
- Establish a single source of truth for supply chain risk. Integrate end-to-end maturity assessments with automated discovery to reveal hidden vulnerabilities across Tier-N of your supply chain
- Define the economic framework for resilience. Apply a strategic segmentation to your supply chain risk portfolio to balance structural ‘prevent’ investments against agile react’ capabilities

Deloitte's approach to Supply Chain Resilience (2/2)

3 | Sense & Analyse



4 | Act



Common pain points

- Overwhelming alerts that lack insight, making risks hard to interpret and act upon
- Siloed data and limited experience force labour-intensive risk assessments, slowing impact analysis and prioritisation
- Lack of organizational alignment, escalation and resolution pathways, leading to a "firefight" style approach
- Insufficient internal expertise and bandwidth to develop mitigation strategies

Our point of view

- Deploy Decision Intelligence to filter noise. Combine AI risk-sensing with human context to instantly translate alerts into quantified business impacts
- Use context to harness your data to assess risk impacts, prioritize & prepare mitigation strategies
- Supply chain resilience is more than a tool—it's a complete business function
- Focus on immediate continuity of supply & agility and strategic business trade-offs, designs and solutions

Resilience cannot be built in isolation; it requires ecosystem orchestration and collaboration

- **Active collaboration with governments**, improving alignment on e.g. regulations, crisis responses, and infrastructural readiness
- **Collaboration and visibility beyond your four walls** to strengthen resilience, enabling shared responses to disruptions and reducing dependency on isolated decision-making
- **An international perspective on** collaboration as resilience challenges extend beyond national borders

- **High-trust, psychologically safe cultures** that encourage diverse perspectives enable faster resolutions
- **Decentralized decision-making** that allows organizations to respond quickly and effectively
- **An entrepreneurial, long-term mindset** supports resilience by prioritizing sustainable decisions over short-term optimization

- **Calm and composed leadership** in crisis situations is critical to maintaining control and alignment
- **Well-educated, capable employees** with strong domain expertise and decision authority

The biggest risk to supply chain performance isn't *disruption*, it's lack of preparedness

Contact our Supply Chain Resilience Experts

Lonneke Knipscheer

LKnipscheer@Deloitte.nl

+31 6 2260 8305

Sander Feenstra

SFeenstra@Deloitte.nl

+31 6 5204 8490

Robert Jan Huizing

RHuizing@deloitte.nl

+31 6 2078 9829

Arjan de Witt

AdeWitt@Deloitte.nl

+31 6 8201 9062