

Building resilience across the aerospace and defence industry

How leading organisations are strengthening visibility, reducing risk and improving operational agility.





Introduction

Few industries depend on supply chain performance as much as Aerospace & Defence. Whether manufacturing aircraft components, defence systems, avionics, engines, or supporting sustainment and maintenance programmes, organisations rely on highly specialised supplier networks that often span multiple countries, regulatory frameworks, and production environments.

For years, supply chains were primarily evaluated on efficiency, cost control, and delivery performance. Today, resilience has become equally important.

Recent years have highlighted the impact that disruption can have on programme delivery, production schedules, contractual commitments, and customer confidence. Material shortages, supplier capacity constraints, geopolitical instability, workforce challenges, and transportation delays have all exposed vulnerabilities within even the most established supply chains.

As a result, Aerospace & Defence leaders are increasingly focused on a critical question: How do we build supply chains that can withstand disruption while continuing to support operational and programme objectives?

This guide explores the key principles of supply chain resilience and examines how organisations can improve visibility, strengthen supplier relationships, reduce risk, and create more agile operations.



Why supply chain resilience has become a strategic priority

The Aerospace & Defence supply chain is unlike most other industries.

Programmes often involve:

- Long product lifecycles
- Highly specialised components
- Stringent regulatory requirements
- Multi-tier supplier networks
- Complex contractual obligations
- Long lead-time materials
- Global sourcing strategies

A delay affecting a single component can have a ripple effect across an entire programme. What begins as a supplier issue can quickly become a production issue, a delivery issue, and ultimately a customer issue. In this environment, resilience is no longer just a supply chain concern. It has become a business-critical capability.

Understanding supply chain resilience

Resilience is often confused with risk avoidance. In reality, risk can never be completely eliminated. Resilience is the ability to anticipate, absorb, adapt to and recover from disruption while maintaining operational performance.

A resilient supply chain can:

- Respond quickly to change
- Maintain critical operations
- Protect programme commitments
- Minimise production disruption
- Support customer requirements
- Recover faster from unexpected events

The objective isn't to predict every challenge. It's to create an organisation that can respond effectively when challenges arise.



The hidden cost of supply chain disruption

Many organisations focus on the immediate impact of disruption.

Production delays.

Late deliveries.

Material shortages.

While these are significant challenges, the broader consequences are often much greater.

Disruption can result in:

- Increased operating costs
- Programme delays
- Contractual penalties
- Customer dissatisfaction
- Reduced workforce productivity
- Additional inventory carrying costs
- Delayed revenue recognition
- Reputational damage

In many cases, the true cost of disruption is only fully understood months after the original event occurred. This is why resilience should be viewed as an investment rather than an expense.

The five foundations of a resilient aerospace & defence supply chain

1. Create end-to-end visibility

Visibility remains one of the biggest challenges facing Aerospace & Defence organisations. Many businesses have a clear understanding of immediate suppliers but limited insight beyond the first tier of their supply chain.

This can make it difficult to answer important questions:

- Which suppliers are experiencing challenges?



- Where are material shortages developing?
- Which programmes are potentially exposed?
- What inventory is available across the network?
- Which customer commitments may be affected?

Without visibility, organisations often discover problems too late. With visibility, they can identify risks earlier and make informed decisions before disruption affects programme performance. Visibility enables action. Action enables resilience.

2. Understand supplier risk and dependency

Many Aerospace & Defence programmes rely on highly specialised suppliers with unique capabilities. In some cases, alternative sources may not be available. This creates dependency risk.

Organisations should regularly assess:

- Critical supplier exposure
- Financial stability
- Capacity constraints
- Geographic risk
- Regulatory compliance
- Lead-time vulnerabilities

A supplier does not need to fail completely to create significant disruption. Even small changes in capacity, workforce availability, or operational performance can affect programme outcomes. Understanding supplier risk allows organisations to plan more effectively and reduce vulnerability.

3. Strengthen supplier relationships

Resilience is rarely achieved through contracts alone. Strong supplier relationships create opportunities for greater collaboration, transparency, and shared problem-solving.

Leading organisations increasingly focus on:

- Joint planning activities



- Performance reviews
- Capacity forecasting
- Open communication
- Shared risk assessments

When challenges occur, collaborative relationships often deliver faster resolutions than purely transactional arrangements. The strongest supply chains operate as ecosystems rather than isolated businesses.

4. Balance efficiency with continuity

Historically, many organisations focused heavily on reducing inventory and eliminating operational waste. While these remain important objectives, recent disruptions have demonstrated the importance of balancing efficiency with continuity.

Questions leaders should consider include:

- Which materials are most critical to production?
- Which items have long lead times?
- Where are supply chain vulnerabilities greatest?
- What inventory strategy supports business continuity?

The goal is not necessarily holding more inventory. The goal is holding the right inventory in the right place at the right time. Resilience requires balance.

5. Improve organisational agility

Resilient businesses are often agile businesses. They can adapt quickly when circumstances change.

Operational agility enables organisations to:

- Reprioritise production schedules
- Respond to supplier disruption
- Adjust inventory strategies
- Support changing customer demand
- Allocate resources effectively



The speed at which an organisation can respond often determines the size of the disruption it experiences. Agility reduces impact and accelerates recovery.

Why visibility changes everything

Visibility sits at the heart of supply chain resilience. Without accurate information, organisations are often forced into reactive decision-making.

This can lead to:

- Delayed responses
- Missed opportunities
- Escalating risks
- Increased programme disruption

When leaders have access to reliable information, they can make decisions based on facts rather than assumptions. This creates confidence and supports better outcomes across planning, production, procurement, and programme delivery. Visibility is not simply about reporting. It's about creating the conditions for better decision-making.

Managing risk beyond tier-one suppliers

Many supply chain issues originate beyond direct suppliers. A problem affecting a tier-two or tier-three supplier can have significant consequences further up the value chain. However, many organisations lack the visibility needed to identify these risks early.

Leading Aerospace & Defence businesses are increasingly seeking greater understanding of:

- Extended supplier networks
- Material dependencies
- Geographic concentration risks
- Capacity bottlenecks
- Single-source components

The deeper the understanding of the supply chain, the greater the ability to anticipate disruption.

The role of planning in building resilience

Strong planning remains one of the most effective resilience tools available.

Resilient organisations typically invest in:

- Demand forecasting
- Capacity planning
- Supplier collaboration
- Scenario modelling
- Contingency planning

The objective is not to predict the future with complete accuracy. It is to understand potential outcomes and prepare accordingly. Organisations that plan effectively are often more confident and more adaptable when unexpected events occur.

Creating a culture of resilience

Supply chain resilience is not achieved solely through systems and processes. It also depends on organisational culture.

Successful organisations encourage:

- Cross-functional collaboration
- Open communication
- Proactive risk management
- Continuous improvement
- Shared accountability

Resilience becomes significantly stronger when supply chain, procurement, operations, programme teams, and leadership work towards common objectives. People remain a critical part of every resilient supply chain.

Measuring supply chain resilience

Like any business capability, resilience should be measured.

Useful indicators may include:

- Supplier performance



- On-time delivery
- Inventory availability
- Lead-time stability
- Programme impact incidents
- Recovery times
- Supplier risk ratings

Monitoring these metrics helps organisations understand where vulnerabilities exist and where improvements may be required. What gets measured is far more likely to improve.

What leading aerospace & defence organisations do differently

While every organisation operates within its own unique environment, resilient businesses often share several common characteristics.

They:

- Prioritise visibility across the supply chain.
- Invest in supplier relationships.
- Understand critical dependencies.
- Monitor risk continuously.
- Balance efficiency with resilience.
- Build flexibility into planning processes.

Most importantly, they recognise that resilience is not something that can be implemented once and forgotten. It requires ongoing attention and continuous refinement.

Looking ahead

The Aerospace & Defence sector is unlikely to become less complex. Supply chains will remain global. Programmes will remain demanding. Technology will continue to evolve. Customer expectations will continue to increase.

Organisations that strengthen resilience today will be better positioned to respond to whatever challenges emerge tomorrow. The ability to adapt quickly may become one of the most valuable competitive advantages available.



Final thoughts

Supply chain resilience is no longer a secondary objective. For Aerospace & Defence organisations, it has become a fundamental business requirement. The organisations that perform best are not necessarily those that avoid disruption altogether. They are the organisations that understand their supply chains, anticipate challenges, and respond effectively when disruption occurs.

By improving visibility, strengthening supplier relationships, enhancing planning capabilities, and building operational agility, Aerospace & Defence leaders can create supply chains capable of supporting programme delivery even in uncertain conditions. In an industry where performance, reliability, and commitment matter deeply, resilience provides the foundation for long-term success.

About TCT

At TCT, we help Aerospace & Defence organisations improve operational performance, strengthen programme delivery, and build more resilient supply chains. Through SAP transformation support, operational readiness, programme assurance, governance, and business change expertise, we help organisations reduce risk, improve visibility, and deliver measurable business outcomes.

Looking to strengthen supply chain resilience across your organisation? Speak to TCT about building the operational foundations needed to support successful programmes, stronger supplier performance, and long-term growth.



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