

Why we need a strategy for resilience

Foreword by Major General Simon Hutchings

Consecutive global disruptions ranging from the COVID-19 pandemic to state-led aggression in Ukraine to the environmental threats borne from climate change have **highlighted the fragile nature of supply chains** in Defence and industry.

In Defence the fragility is borne out of decades of emphasis on prioritising cost savings and focus on efficiency gains. Whereas for industry, we're seeing the impact of upstream events and points of failure reverberating across highly interconnected and globalised supply chains. Continuous, externally driven issues with current systems and structures **have resulted in a 'new normal' of constant disruption.**



As we consider what our supply chain value proposition ought to be we must recognise, with clarity, the part played by the Defence Supply Chain (DSC) in keeping our Nation and democracy safe and maintaining our way of life. This must be a Team UK endeavour involving the wider Defence Industrial enterprise, for recent crises have shown the **Power of Combinations** and the importance of **end-to-end value chain planning and Supply Chain Integration as both force multiplying and affording support advantage.**

To meet this challenge, **a clear vision of the future is required of the UK Defence Supply Chain (DSC).** A vision to achieve Support Advantage, enabled through collaboration with industry, allies and other government departments, building upon current structures, to provide effective military capability in response to a changing operating environment.

The Defence Supply Chain Strategy provides this vision **and translates the ambition of Support Advantage outlined in the Defence Support Strategy across three headmarks.**

Firstly, recognising the need for better balance and a shift away from a default position on cost reduction and efficiency gains, **a new value proposition for the DSC is defined.** One which accounts for reliability, service and environmental sustainability as well as cost, in assessing trade-offs to achieve balance in the DSC.

Secondly, to build a supply chain, resilient by design and able to maintain delivery of defence outputs in the 'new normal' and its associated challenges, a Bi-modal approach is detailed. **This approach provides Defence with the capabilities and optionality to de-risk procurement challenges and/or rapidly respond to external shock events.**

Finally, setting the performance and functional maturity ambition for the Defence Supply Chain for 2030 as we drive towards **a proactive, integrated and collaborative Supply Chain**.

Delivering an agile and resilient (by design) DSC is supported **by a roadmap which incorporate existing transformation programmes** while providing the structure and guidance to allow future initiatives to be co-ordinated.

The UK DSC is not alone in seeking to meet the outlined challenges. For example, the US defence supply chains coalesce behind the direction set out in **Securing Defence-Critical Supply Chains** (Feb 22). The action plan developed in response to President Biden's EO 14017, **outlines areas of focus and key enablers to build resilience into their supply chains**. The UK's Supply Chain Strategy has been developed with this in mind, and with input from across the MOD and from its key industrial partners. **Maintaining this collaborative approach is critical if the UK Defence Supply Chain is to deliver Support Advantage**.

**Major General Simon Hutchings OBE, Director Joint Support
UK Strategic Command, Ministry of Defence**

Supply Chain resilience for a new better

Foreword by Professor Richard Wilding

In recent years we have experienced a significant shift globally, the “old normal” of pre 2020 supply chains will never return, we are moving into what some commentators describe as the “**never normal**” or the “**new normal**”.

For the Defence Supply Chain, which is increasingly connected to global commercial and geopolitical events, the increasing occurrence of “**black swan**” events is creating a volatile, uncertain, complex and ambiguous environment (VUCA) where many of the **approaches adopted over the last few decades are increasingly ineffective**. This environment has been brought into sharp focus in recent years through significant disruptions due to, for example, the pandemic and geopolitical events. Supply Chain professionals in Defence and broader industry, often the hidden hero’s of our society, have always had to **manage “black swan events”**, the challenge, it could be argued, is in recent years we have been having to **manage “flocks” of black swans!**



Supply Chain resilience is the **adaptive capability of the supply chain to, prepare for unexpected events, respond to disruption and recover** from them by maintaining the continuity of operations. Critically government (and defence) has a significant role in creating an environment where preparation, response and recovery can readily and effectively take place.

To enhance resilience in the Defence Supply Chain, **radical redesign is required recognising the emphasis on Reliability, Service and Cost** but also understanding that we have moved into a “new normal” characterised by volatility.

The “**old normal**” supply chain was configured for a world **typified by relative stability**. “Just in time” and “Lean Approaches” were predominant, efficiency and cost reduction was the focus facilitated by the frictionless global flows of people, products and materials. Supply Chain professionals describe this as **Mode 1 operation** with a focus on **predictability**. The **idea of Mode 2 supply chains** which are characterised by **agility and flexibility** was present in in the “old normal” but for most competitive environments received little attention.

Mode 2 supply chains require speed, a culture where strategies are developed **for solving the unexpected** and adapting to disruptions, **new technologies** and the rapidly changing business environment. World leading organisations are able to manage both modes

simultaneously to gain advantage leveraging the advantages of this “**bimodal supply chain**” world. Supply Chain professionals will always want to, where possible, operate in Mode 1 to gain efficiency but **transitioning into Mode 2 when disruption occurs to enable recovery is critical**. To be effective, the Defence Supply Chain requires this capability as do other supply chains important to supporting the well being of our society.

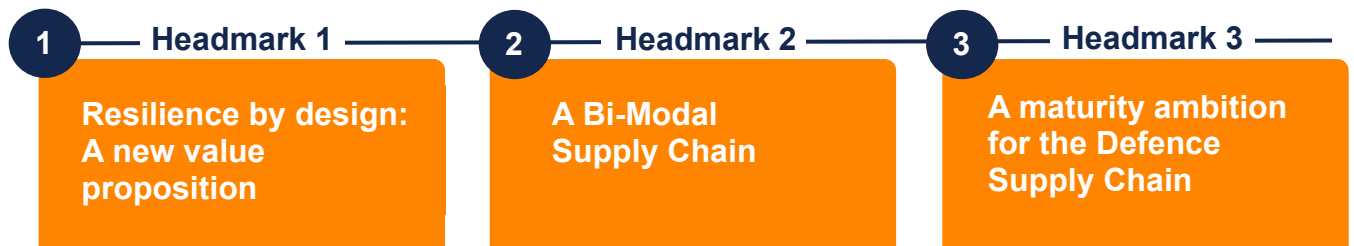
Governments role in responding to disruptions in global supply chains requires swift and wise intervention. A nation is required to continually monitor global supply chains; many disruptions can be pro-actively managed if identified early. **Recognising the inter-connectivity of supply networks is critical**. This has been readily recognised in recent years. For example, the **supply of batteries** used in defence equipment was **disrupted** not by the fact that the supply chain for the physical battery was disrupted but **due to a shortage of cardboard packaging** material created by the massive increase in **online shopping** depleting suppliers of cardboard. The result is a cycle of disruption. For the security of our society we are **no longer able to leave things to “market forces” expecting resilience as an outcome**, deliberate and considered interventions will be required. By government departments **planning for uncertainty** and creating scenario plans, pro-active **swift interventions can be taken** with good effect.

With government in partnership with industry, **working together to improve the resilience of supply chains** we can transition to a “new better”, by doing more together around supply chain resilience our nation can prosper economically, socially and environmentally and that would be so much better!

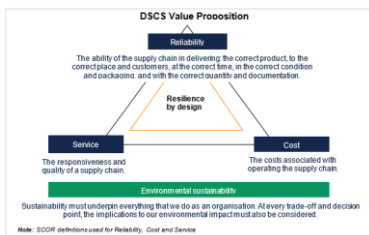
**Professor Richard Wilding OBE, Professor of Supply Chain Strategy
Cranfield School of Management U.K.**

Introduction: The Defence Supply Chain Strategy

The DSCS offers three headmarks which define the vision for the Defence Supply Chain (DSC) and thereby frame the initiatives required to deliver it.



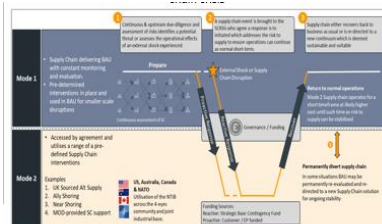
Resilience is a function of cost, service, reliability and environmental sustainability



A new value proposition has been developed to enable prioritisation when making decisions around supply chain resilience. This is achieved by ensuring that all **supply chain decisions have been effectively balanced** between Cost, Reliability and Service, delivering equal value across the support chain.

This value proposition is supported through **Design Characteristics** and associated **Business Objectives**.

Delivering the capability to respond and react in times of supply chain crisis

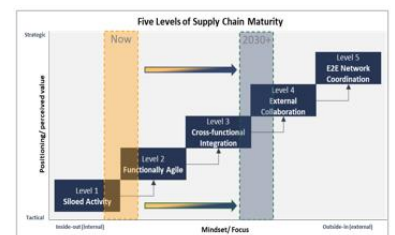


A future operating intent has been identified which is referred to as the operation of **Bi-Modal supply chains**.

A Bi-modal supply chain is characterised firstly by a **'Mode 1'** which involves all the BAU supply chain activity of managing normal risks and outcomes weighed against quality and price, through standard forums and processes, with an emphasis on continuous improvement.

Mode 2, however involves the rapid response to supply chain issues utilising **Proactive and Reactive extraordinary supply approaches** and contingency funding to ensure defence outputs and operations are not disrupted.

Sets the performance ambition for supply chain functional maturity



The target ambition has been set for functional maturity within the Defence Supply Chain. At current, Defence is a **self-assessed rating of in between 1.8-2.4***, characterised by **siloed activity and reactive decision making**.

By 2030 activities are managed across functions and with immediate members of the value chain, including third-party logistics, external manufacturers, suppliers and customers. **A commercial strategy will support the maturity ambition and will seek to reduce commercial fragmentation in upcoming contract re-lets.**

*Based on 2021 Gartner diagnostic

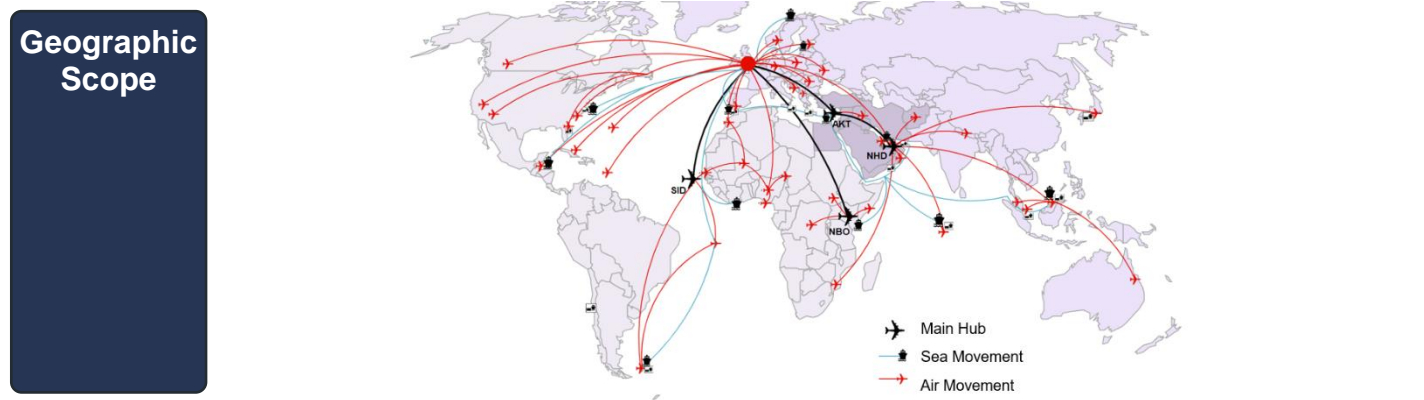
The scope of the Defence Supply Chain Strategy

There are three aspects of the scope of Supply Chain within which the DSCS seeks to influence activity

- The Supply Chain scope as outlined below defines the boundary and content of the “problem domain” which the DSCS seeks to influence and make recommendations against.
- For areas which fall within the functional definition of supply chain, based on the Business Functional Model (developed by Defence Support CIO), the DSCS outlines recommendations in line with the vision of the defence supply chain.
- Areas which are not part of the functional supply chain scope but have a mutual dependency on the supply chain (such as Engineering Support and Enabling Capabilities), are areas which DSCS will look to influence.

Functional Scope	Strategy	Planning	Bringing into Service	Logistic Support	Equipment Support	Enabling & Other Business Capabilities
	<ul style="list-style-type: none"> Movements Capability Definition Acquisition Strategy Definition Supply Policy Definition Supply Network Strategy Definition Operation Model Definition 	<ul style="list-style-type: none"> Logistics Planning Engineering Planning 	<ul style="list-style-type: none"> Product Intent Through Life Support Design Product Design Management Bringing Into Service Management Resourcing New Service Planning Prototyping 	<ul style="list-style-type: none"> Logistics Support Reporting & Analysis Inventory Mgmt (Base & Deployed) Movements and Transport Warehousing 	<ul style="list-style-type: none"> Obsolescence Asset Management Fleet Management Recondition/Repair Maintenance and Repair Safety Management Technical Information 	<ul style="list-style-type: none"> Human Resourcing Digital Delivery Health and Safety Finance Estates Management Digital Definition Training

■ Considered a Supply Chain Functional activity
■ Not considered a Supply Chain Functional activity



- Category Scope**
- All stock items which MOD is required to purchase, store and issue, grouped into the following categories:
- Consumables
 - Spares
 - Repairables
 - Fuels
 - Munitions
 - Sub systems
 - Assets/ Platforms

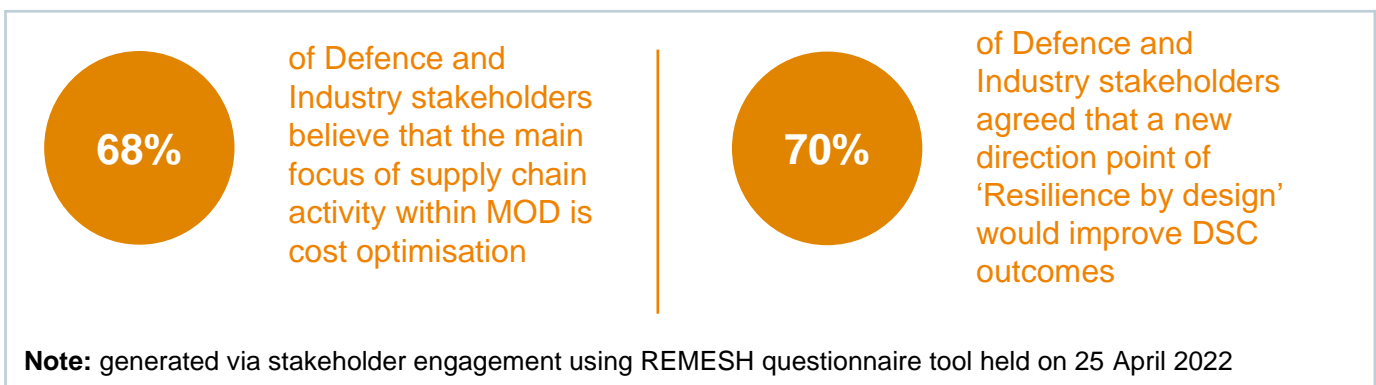
Headmark 1: Resilience by design

Decisions affecting the composition and performance of the Defence Supply Chain must be made against a clear set of priorities. Intervention is needed to steer supply chain decisions away from those which natural market forces and current Defence procurement policy arrive at naturally. Cheaper options in the context of resilience can undermine the DSC and its ability to enable Support Advantage.

The case for change: a new proposition for DSC

An over emphasis on cost optimisation within DSC activity has undermined supply chain resilience across MOD. To address this, a new Value Proposition for DSC activity has been developed to change how Defence prioritises SC delivery.

'Resilience by Design', and the trade off between competing priorities is to become the reference point for all future decision making relating to the DSC.



What needs to happen: Creating the right conditions for resilience with a reset of focus

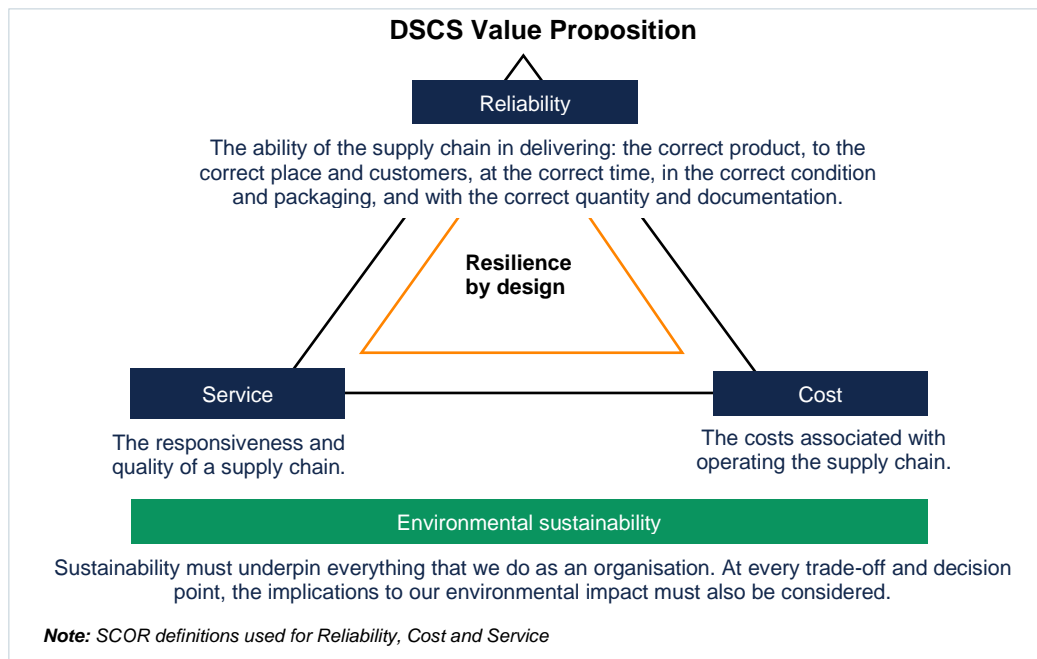
Throughout all parts of Defence, a reset of focus is needed to deliver CDLS's vision for creating a Support Advantage. Support and in particular the DSC are heavily influenced by decisions made throughout the organisation, however the impact on Support Advantage is not always understood or considered.

Much as the 2021 Integrated Review described a 'Whole-of-Society' approach to building the UK's national resilience, this first headmark is to inspire a 'Whole-of-Defence' agenda for creating the right conditions for supply chain resilience, with end-to-end supply chain planning contributing to the Power of Combinations and enabling support advantage.

Certain resilience outcomes for DSC will require decisions made outside the sphere of influence of Defence Support. Examples of where this is happening now is in Procurement Reforms.

Headmark 1: Resilience by design

The Defence Support Strategy (DSS) success factor for Strategic Outcome 1 is ‘an optimised Supply Chain that balances effective, efficient and resilient outcomes’. The new Value Proposition outlined below provides further detail on this balance in terms of supply chain elements (reliability, cost, service and environmental sustainability)



Too much focus on one element over any other risks suboptimal DSC outcomes. To become more Resilient by Design, all supply chain professionals within Defence must assess the trade-off and consequence of every decision against this headmark.



Reliability - Alternatively referred to as delivery reliability, this is an assessment of how often the supply chain delivers the correct product, to the correct place and customer, at the correct time, in the correct condition and packaging, and with the correct quantity and documentation.



Service - An assessment of the responsiveness of the prime or sub tier supplier to changed requirements and the quality of the product supplied or how well it meets specification.



Cost – The overall costs associated with a particular supply chain relative to the performance and reliability of a particular solution.

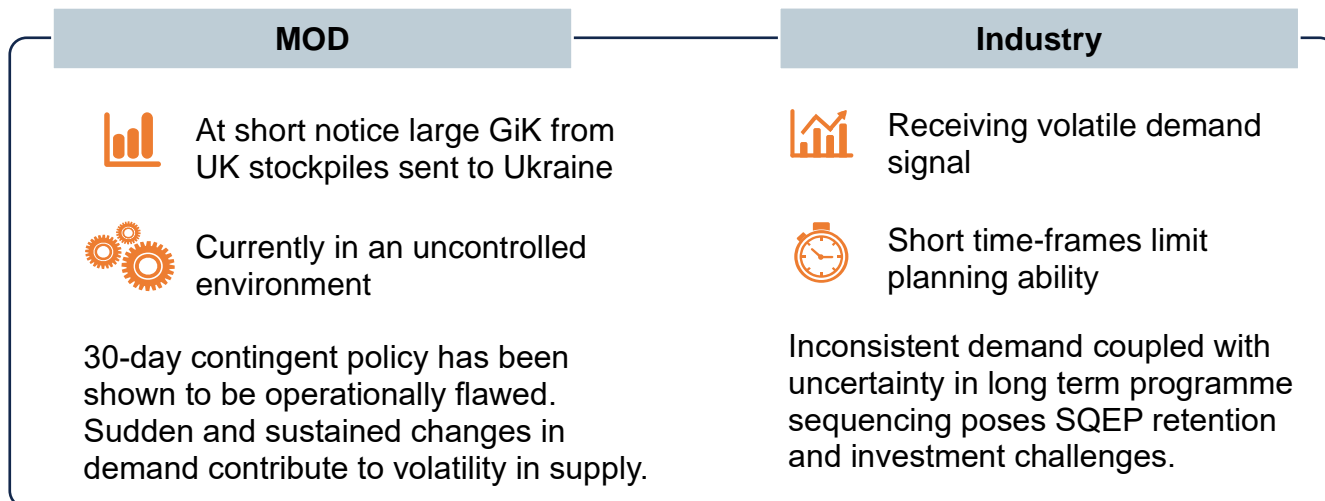


Environmental Sustainability – As assessment of the environmental impact (including scope three emissions) of supply chain solutions and operations¹.

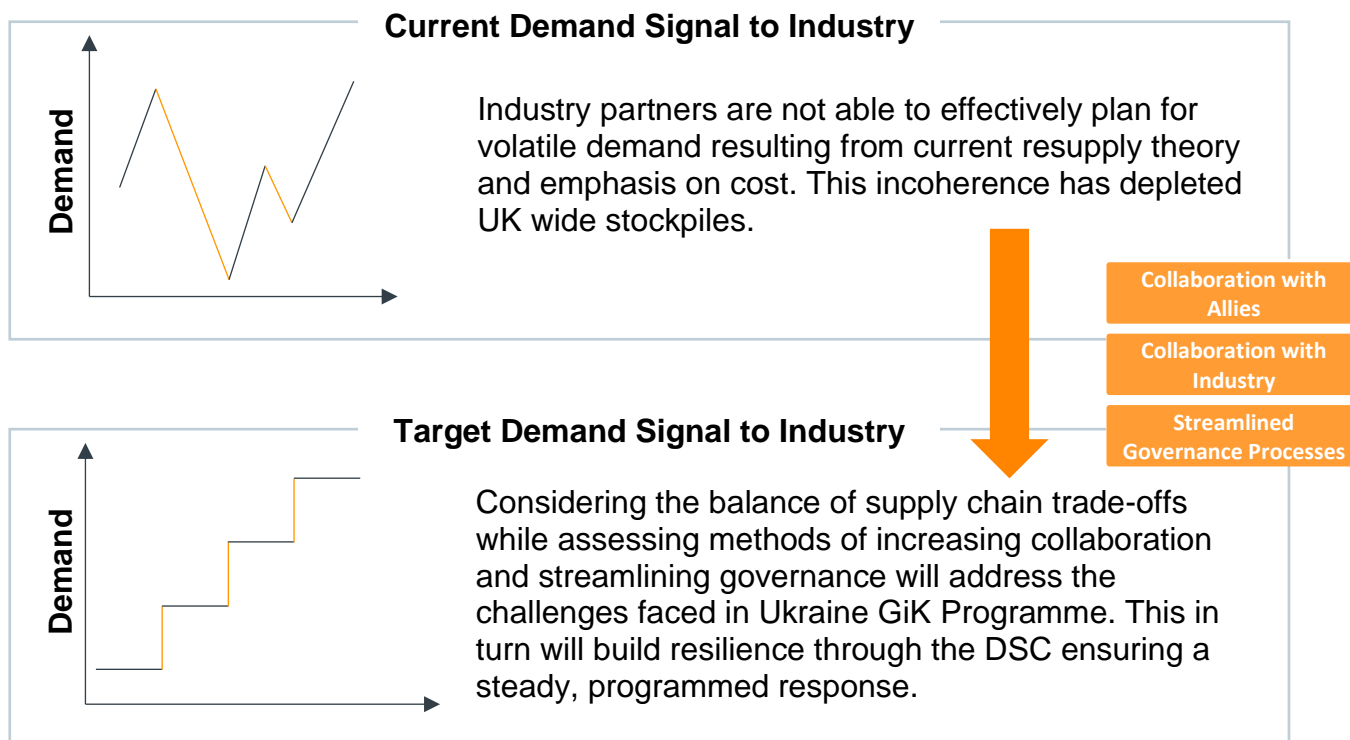
¹ Further detail regarding environmental sustainability is available in the [Sustainable Support Strategy](#)

Headmark 1: Resilience by design

Ukraine has raised capability & productivity challenges. The underlying assumption of the 30-day 'Just in Case' contingent theory (that suppliers can respond in that time) has been shown to be flawed. Industry face workforce and investment challenges as a result of inconsistent MOD demand and ambiguity in long term sequence of programmes, which inhibit rapid response to shock events.



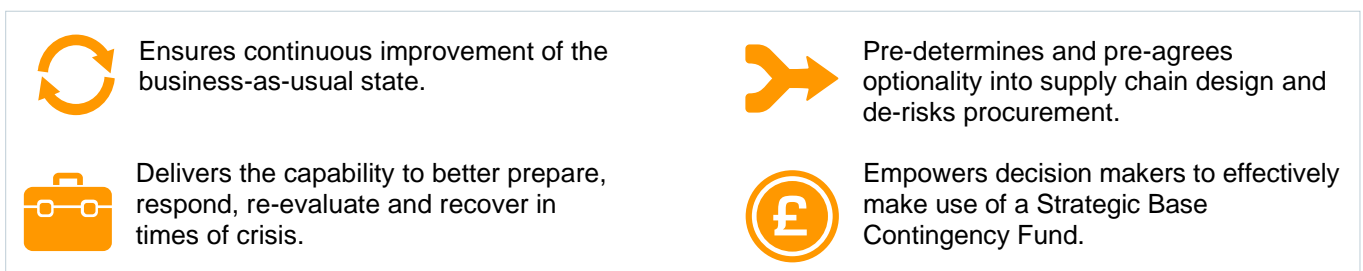
Increasing collaboration with allies and industry partners while streamlining internal governance is required to ensure DSC resilience against future such external shocks. In implementing solutions, the balance between the supply-chain trade-offs must be considered to build resilience into the design of the DSC.



Headmark 2: A Bi-Modal Supply Chain

The case for change: The need to react with the speed of relevance to issues of supply as they arise

A new way of operating the DSC is required to enable reactions at the speed of relevance; to be resilient by design. A way of operating which:

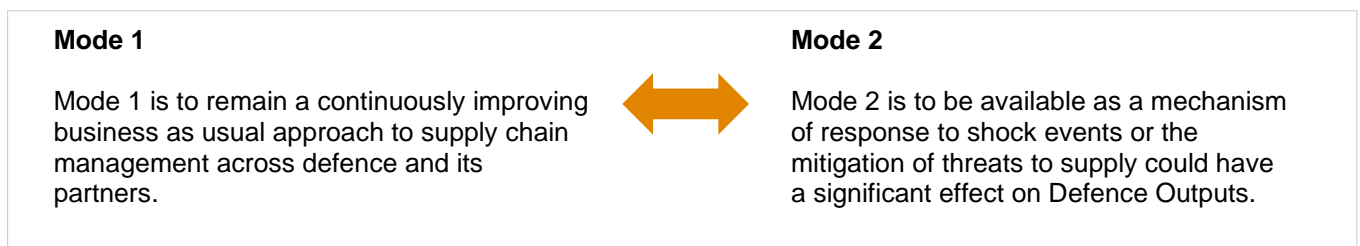


Practical case studies in recent years demonstrate a need for change.

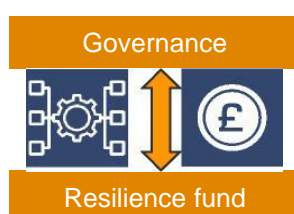
- HMS Queen Elizabeth Class (QEC): Pragmatic supply choices
- ISOs: Accurate data and visibility

What needs to happen: creating the right conditions for Resilience with a reset of focus

The DSC will become resilient by design and create the capability to react at the speed of relevance by adopting a bi-modal operating model:



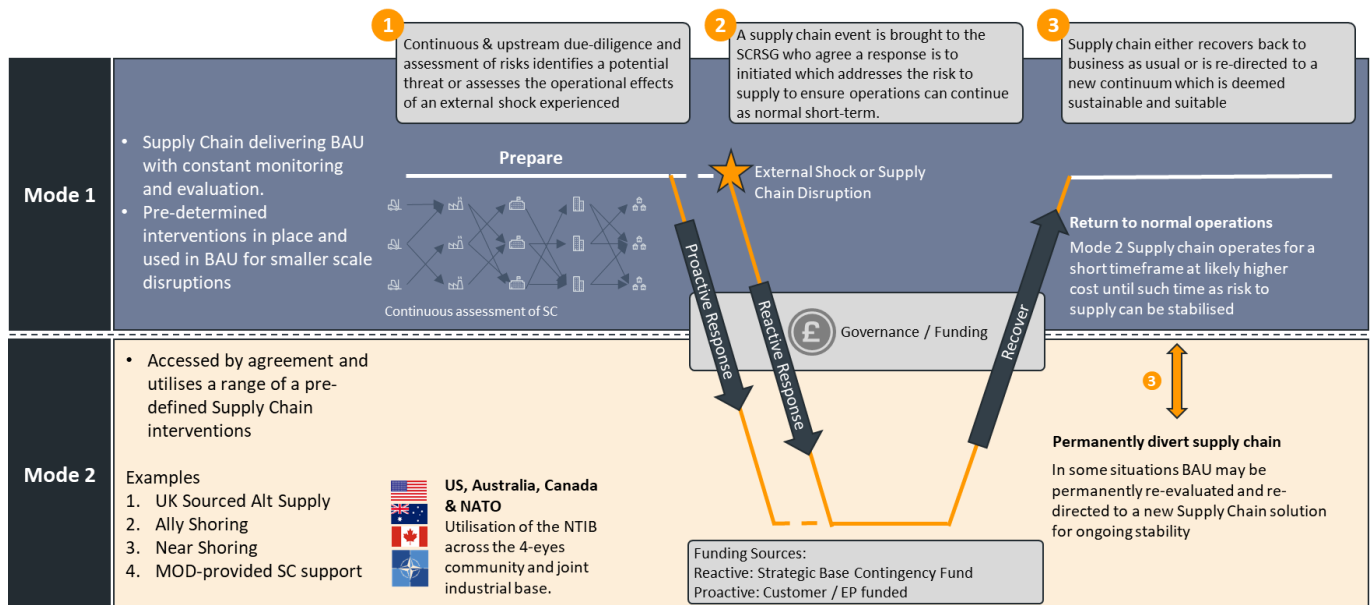
Governance is required to deliver Mode 1 and Mode 2, which builds on structures already in place for inflight initiatives such as the Strategic Base Contingency Fund.



of industry and MOD stakeholders engaged supported the concept of developing a Bi-modal supply chain.

Headmark 2: A Bi-Modal Supply Chain

Through pre-agreement and pre-determined lines of action, Defence would be given the option to access a Mode 2 supply chain with potential alternate sources of supply to react to emergency situations, or proactively mitigate against identified threats.



Illustrative examples:

- Mode 1 - Continuous Improvement**

This represents the business as usual of Just in Time logistics, allowing routine risk identification and continuous improvement of the Defence Supply Chain. It infers that we must continue to use of data for informed decisions, improved demand and supply planning, whilst accessing actionable intelligence. Importantly it encompasses the transformation of our systems and logistic process applications under Business Modernisation for Support (BMfS). Our fully funded programme of record will, as a first phase outcome, rollout a CuP for Inventory and Movements / Transport Management (including an uptake in industry) such that we apply the power of the combinations of purpose, intelligence, collaboration and data sharing, to better mitigate the effects of the new normal and achieve Just Right logistic solutions.

- Mode 2a – Proactive**

Acquisition. A land capability platform approaching FBC sign-off has its support solution stress tested (modelled) and Supply Chain network illuminated on the DE&S SC Resilience Control Tower (CT). Node 5 in the network reveals a weak resilience score resulting from an undesirable 3rd country as sole supplier of a critical piece of componentry. A conversation is instigated with the Industry Prime (treat or tolerate) and options are generated. SRO circles around the value proposition to prioritise reliability and performance on an enduring basis. Node 5 is near shored instead, with commercial

agility prioritising resilience by design. Outcome might cost slightly more, but delivers long-term reliability and better ultimate value.

- **Mode 2b – Reactive**

Operations. The Defence Clothing inventory is 85% sourced from China resultant from normal quality vs cost dynamics. Intelligence shows a physical upstream disruption will likely cause downstream supply issues and low order fulfilment. Choices are generated by the Delivery Partner for alternative sources of supply. Essential, albeit temporary, diversification is desired. An option to on-shore to the UK is offered. Decision window lasts for only 48hrs. OPBC is raised. Temporary relocation of manufacturing agreed. SB Contingency Fund funded. Review in 8 months. Threat gone Yes or No? Yes, revert to Mode 1 again. No, decide to move to Proactive 2a and endure. Customer now funds the difference in the value proposition.






Headmark 3: Maturity ambition for DSC

The goalposts for performance and functional maturity for Defence Supply Chain have been set for 2030. The current governance models, processes, behaviours, culture, platforms and tools are contributing to an organisational inertia which limits the speed at which decisions can be made.




The case for change: DSC is currently rated as reactive rather than proactive as well as siloed and mistrusting of industry

Industry and Defence stakeholders mutually recognise the need to address the Defence-Industry interface and provide greater clarity of the ownership structure across the defence supply chain

The top areas where industry can better support Defence

-  Real-time visibility of supply chain (SC)
-  Timely sharing of SC intelligence
-  Proactive data sharing

The top areas where Defence can better support Industry

-  Collaborative contracting
-  Transparency with industry
-  Clarity on Org. structure

Note: generated via stakeholder engagement using REMESH questionnaire tool held on 25th April 2022

Gartner diagnostic in 2021 found maturity to be as siloed & focused on functional scale

Current maturity level

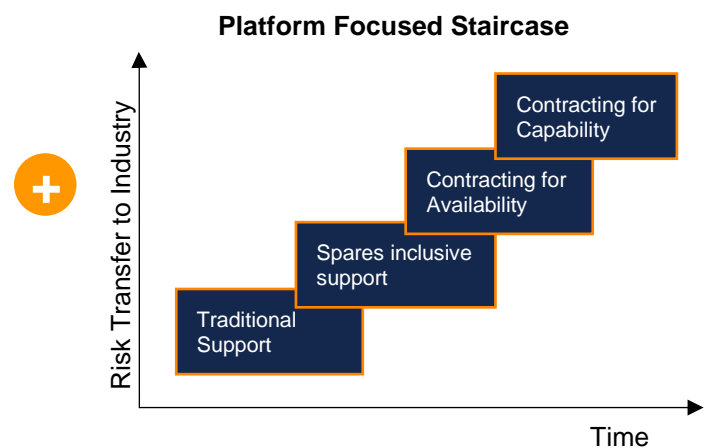
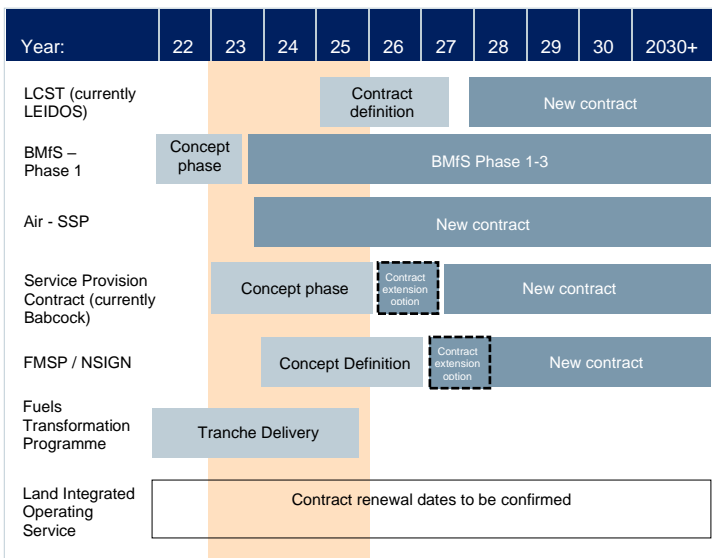
Level 1 Siloed activity	Level 2 Functionality agile
Characterised by disconnected departments driving supply chain priorities via manual processes and disconnected systems	Characterised by growing centralisation of Supply Chain activities and Supply Chain performance is captured on an organisation-wide basis. Activities are standardised for improved economies of scale

Gartner supply chain maturity model

Headmark 3: Maturity ambition for DSC

What needs to happen: Coordinated efforts are required to drive transformation in functional maturity across DSC

Minimise commercial fragmentation which undermines supply chain resilience and find the right trade off between availability type platform contracts and functional contracts.



Target organisation maturity characterised by improved integration and collaboration

2030+ Target maturity level

Level 3 Cross-functional Integration	Level 4 External Collaboration
Characterised by increased consideration of overall strategic priorities and collaboration across internal departments	Characterised by consistent approach to trade-off decisions considering cost, service and reliability. Collaboration and integration with suppliers and customers is common and there are high levels of visibility across supply networks

Gartner Supply Chain Maturity Model

Implementation

Action plans for each headmark have been developed and consolidated into an DSCS implementation roadmap which includes key activities and initiatives aligned to workstreams which required to deliver the performance ambition for Defence Supply Chain.

The six workstreams outlined in the implementation plan

People & change	Initiatives to ensure the change transformation is embedded appropriately in the organisation and results in new behaviours
Continuous due diligence	Monitoring suppliers on an on-going basis, for risks and threats, including sub-tier supplier risk
Planning	Initiatives which improve both demand and supply planning processes, increasing traceability of supply chain plans to command plans
Decision making	Processes, roles and responsibilities which ensure defence supply chain delivers target outputs
Collaboration	Initiatives and structures through which MOD engages industry, allies and other gov. departments
Commercial strategy & contracts	Commercial strategy and constructs which reduce commercial fragmentation and provide the mechanisms to deliver Bi-Modal Defence Supply Chain

There are inflight programmes such as Business Modernisation for Support (BMfS) and Direct Supply which are already addressing specific challenges in parts of the support chain. The six workstreams outlined above are additive to these initiatives.



Strategic Command

Defence Support