Defence Supply Chain Strategy

November 2022
Edition 1
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
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.
The DSCS offers three headmarks which define the vision for the Defence Supply Chain (DSC) and thereby frame the initiatives required to deliver it.

1. **Headmark 1**
   - **Resilience by design: A new value proposition**
   - 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.

2. **Headmark 2**
   - **A Bi-Modal Supply Chain**
   - 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.

3. **Headmark 3**
   - **A maturity ambition for the Defence Supply Chain**
   - 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
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**

<table>
<thead>
<tr>
<th>Strategy Definition</th>
<th>Planning</th>
<th>Bringing into Service</th>
<th>Logistic Support</th>
<th>Equipment Support</th>
<th>Enabling &amp; Other Business Capabilities</th>
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<tbody>
<tr>
<td>Movements Capability Definition</td>
<td>Logistics Planning</td>
<td>Product Intent</td>
<td>Logistics Support Reporting &amp; Analysis</td>
<td>Obsolescence</td>
<td>Human Resourcing</td>
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<td>Acquisition Strategy Definition</td>
<td>Engineering Planning</td>
<td>Through Life Support Design</td>
<td>Inventory Mgmt (Base &amp; Deployed)</td>
<td>Asset Management</td>
<td>Digital Delivery</td>
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<td>Supply Policy Definition</td>
<td>Product Design Management</td>
<td>Movement &amp; Transport</td>
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<td>Fleet Management</td>
<td>Health and Safety</td>
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<tr>
<td>Supply Network Strategy Definition</td>
<td>Bringing Into Service Management</td>
<td>Warehousing</td>
<td></td>
<td>Recondition/Repair</td>
<td>Finance</td>
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<td>Operation Model Definition</td>
<td>Resourcing</td>
<td></td>
<td>Logistics Support Reporting &amp; Analysis</td>
<td>Maintenance and Repair</td>
<td>Estates Management</td>
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<td>New Service Planning</td>
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<td>Safety Management</td>
<td>Digital Definition</td>
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<td>Prototyping</td>
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<td>Technical Information</td>
<td>Training</td>
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</tbody>
</table>

**Geographic Scope**

The map shows the main hub, sea movement, and air movement routes.

**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
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.
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 operations.

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1 Further detail regarding environmental sustainability is available in the Sustainable Support Strategy.
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.

Current Demand Signal to Industry

Industry partners are not able to effectively plan for volatile demand resulting from current resupply theory and emphasis on cost. This incoherence has depleted UK wide stockpiles.

Target Demand Signal to Industry

Considering the balance of supply chain trade-offs while assessing methods of increasing collaboration and streamlining governance will address the challenges faced in Ukraine GiK Programme. This in turn will build resilience through the DSC ensuring a steady, programmed response.
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:

- Ensures continuous improvement of the business-as-usual state.
- Pre-determines and pre-agrees optionality into supply chain design and de-risks procurement.
- Delivers the capability to better prepare, respond, re-evaluate and recover in times of crisis.
- Empowers decision makers to effectively make use of a Strategic Base Contingency Fund.

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:

**Mode 1**

Mode 1 is to remain a continuously improving business as usual approach to supply chain management across defence and its partners.

**Mode 2**

Mode 2 is to be available as a mechanism of response to shock events or the mitigation of threats to supply could have a significant effect on Defence Outputs.

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.
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.
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**

<table>
<thead>
<tr>
<th>Level 1</th>
<th>Level 2</th>
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<tbody>
<tr>
<td>Siloed activity</td>
<td>Functionality agile</td>
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<tr>
<td>Characterised by disconnected departments driving supply chain priorities via manual processes and disconnected systems</td>
<td>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</td>
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**Gartner supply chain maturity model**
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

<table>
<thead>
<tr>
<th>Year</th>
<th>22</th>
<th>23</th>
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<th>25</th>
<th>26</th>
<th>27</th>
<th>28</th>
<th>29</th>
<th>30</th>
<th>2030+</th>
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<tbody>
<tr>
<td>LCST (currently LEIDOS)</td>
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<td>Concept definition</td>
<td>New contract</td>
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<td>BMIS – Phase 1</td>
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<td>BMIS Phase 1-3</td>
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<td>Air - SSP</td>
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<td>New contract</td>
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<td>Service Provision Contract (currently Babcock)</td>
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<td>Concept phase</td>
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<tr>
<td>FMSP / NSIGN</td>
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<td>Concept Definition</td>
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<tr>
<td>Fuels Transformation Programme</td>
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<tr>
<td>Land Integrated Operating Service</td>
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<td>Contract renewal dates to be confirmed</td>
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</tbody>
</table>

Target maturity level

2030+

**Level 3**

Cross-functional Integration

Characterised by increased consideration of overall strategic priorities and collaboration across internal departments

**Level 4**

External Collaboration

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
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.