



ADS SUBMISSION TO COMMISSION OF ENQUIRY – VISION FOR HAMPSHIRE 2050

03 AUGUST 2018

About ADS

- 1.1 ADS is the national trade association advancing the UK's Aerospace, Defence, Security and Space industries. ADS comprises over 1,000 member companies across all four sectors, with over 950 of these companies identified as Small and Medium Size Enterprises (SMEs).
- 1.2 The UK is a world leader in the supply of aerospace, defence, security and space products and services. From technology and exports, to apprenticeships and investment, our sectors are vital to the UK's growth – generating £74bn a year for the UK economy, including £41bn in exports, and supporting around 1,000,000 jobs across the country.

1. Prospects for the UK's Aerospace & Defence Sectors

- 1.3 Our 2018 Industry Facts & Figures published in May showed that UK aerospace has grown to an annual turnover of £35bn in 2017, with £30bn in exports (including over £19bn to non-EU markets). As the global aerospace industry grows, so too has the sector in the UK, with 39 per cent growth recorded since 2012. This industry now directly employs 123,000 people in the UK, delivering high value jobs in every part of the country, while 3,900 apprentices show our investment in skills and the future of the sector. The average salary in
- 1.4 The UK is playing a vital role in supporting continued global growth in aircraft production, and industrial strategy has proved to be one of our key strengths, with Government and industry working together through the Aerospace Growth Partnership (AGP) to continually improve our international competitiveness.
- 1.5 Successful initiatives include the Aerospace Technology Institute (ATI), launched five years ago in 2013, which is delivering an independent research programme backed by £3.9bn of joint industry and UK Government funding. The Sharing in Growth programme is helping to accelerate the growth and development of key UK supply chain companies, and the SC21 programme has established itself as a class-leader in achieving supply chain excellence.
- 1.6 Longer term, both Airbus and Boeing 20-year forecasts suggest that growing global passenger demand is likely to translate into demand for over 42,000 new passenger aircraft worth almost \$6 trillion by 2036 (see Chart 1). Currently, 85% - 90% of UK aerospace production is destined for export markets, over 60% of which is outside the EU.

1.7 The UK is the second largest defence exporter in the world, which helps deliver the equipment and services our armed forces and security services need to safeguard national security. In 2017, the UK Defence sector generated £22.1bn in turnover and directly employed 140,000 people across the UK, including 4,200 people. UK Defence export orders in 2017 were worth £9bn, with just 11% of orders coming from the EU market. Longer term, the defence export market is forecast to be dominated by the Middle East, North America and Asia Pacific.

Box 1 – Contribution of the UK’s Aerospace & Defence Sectors

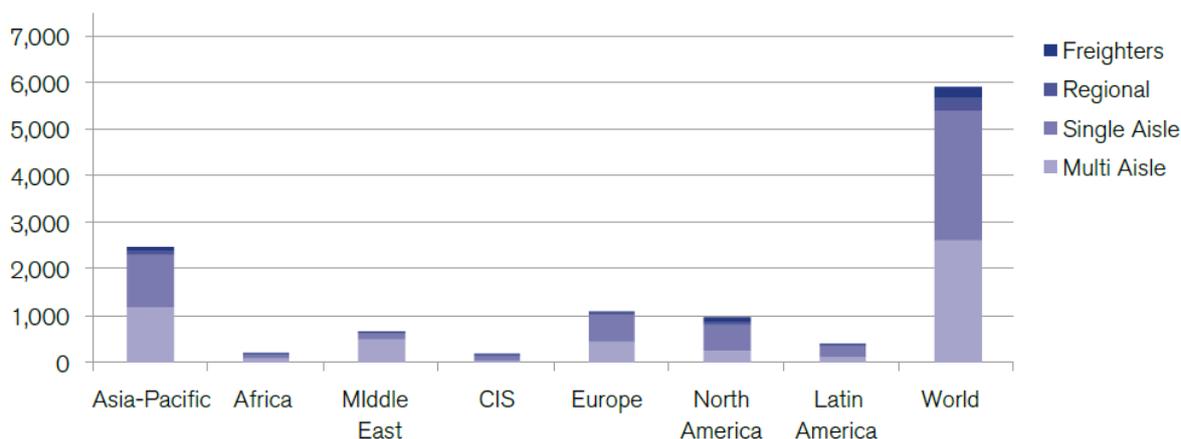
In 2017, the UK Aerospace Sector generated £35bn in turnover, including £30bn in exports, and directly employed 123,000 people. In addition the sector contributed to the UK’s prosperity through:

- Productivity growth of 65% since 2010, versus just 15% in the wider economy;
- Supporting 164,000 jobs indirectly across the economy; and
- Paying an average salary of almost £41,000, 43% more than the national average.

In 2017, the UK Defence Sector generated £22bn in turnover, including £9bn in export orders, and directly employed 140,000 people. In addition, the UK Defence sector contributed to prosperity and national security through:

- Employing 31,000 in the Defence Aerospace sector, which accounts for 87% of the sector’s export orders;
- Delivering productivity growth of 25% since 2010, versus just 15% in the rest of the economy; and
- Paying an average salary of almost £40,000, 38% more than the national average.

Chart 1 Forecast value of aircraft deliveries by region, 2017-2036, \$billions



Sources: Achieving the Difference LLP

Opportunities in the civil and defence aerospace sector

1.8 ADS’ 2018 Global Aerospace Outlook shows that, in 2017, 1,740 commercial aircraft were delivered, resulting in a fleet increase of 4%. Order backlog represents nearly 10 years of production and 2018 is set to be the eighth consecutive year of output growth as manufacturers ramp-up delivery rates of most models, particularly those that have entered service in the last few years like the A350 and 787.

- 1.9 In the business jet market, economic and political uncertainty lead to predictions of modest growth in deliveries in the short-term. The recent and imminent introduction of several new models in the large and super-midsize segments is expected to stimulate additional growth in the mid- to long-term.
- 1.10 The near-term outlook for the rotary-wing market remains cautious. Growth has returned to US and global defence spending with particular interest in light air support aircraft and intelligence, surveillance and reconnaissance.
- 1.11 The cost and risk of developing a new aircraft type are huge. In the narrow-body market, competition has increased with new entrants from Bombardier of Canada, COMAC of China and UAC of Russia.
- 1.12 Embraer is attacking the segment from below with the E-Jet E2. All of these feature new, more fuel efficient engines. Both Airbus and Boeing decided not to introduce new aircraft but incorporate new technology into existing airframes with the A320neo and 737MAX, respectively.
- 1.13 Apart from the improved efficiency of the next generation of engines being offered with these aircraft, there is not a technology that is mature enough and able to offer the operating cost improvements that would make the risk of a new model worthwhile. We are not likely to see a Next Generation Single Aisle (NGSA) until the end of the next decade when a game changing technology is available.
- 1.14 This incremental approach to new aircraft is becoming more common. Airbus is pondering a A321neo-plus and A321neo-plus-plus. The A330neo has been launched as has the Boeing 777X. In the regional aircraft segment, Mitsubishi is developing its all-new MRJ but Embraer has opted for the incremental approach with an updated E-Jet E2.
- 1.15 It is the continuation of and incremental development of existing aircraft platforms that will continue to meet the bulk of demand in the near and medium-term. Just like clean sheet aircraft designs, incremental developments of aircraft can offer large opportunities for the UK supply chain via its systems, engine and wing primes.

New programmes

- 1.16 Beyond current programmes, Boeing is considering the launch of a New Middle-market Aircraft (NMA) to fit between its 737MAX and 787 ranges, China and Russia have announced a joint wide body development in the CRAIC CR929, Embraer has publicly discussed the possibility of entering the large turboprop market and there is the prospect of a new supersonic transport from a market entrant.
- 1.17 Beyond 2030, the US forces Future Vertical Lift programme could lead to large volumes of new rotarywing platforms. These new programmes provide opportunity for UK suppliers to secure long term business.
- 1.18 In the large civil aerospace passenger aircraft market, Boeing and Airbus aircraft programmes are expected to continue to dominate global sales to meet growing demand for air travel over the next 20 years, including in Asia, and despite the emergence of indigenous programmes.

1.19 The prospect of unmanned commercial aircraft has been much discussed. In its 2011 report, “Flightpath 2050 - Europe’s Vision for Aviation”, the European Commission predicts that in 2050 “A proportion of... vehicles are pilotless and some are autonomous.” It goes on to say that, in this future, “...unmanned aircraft systems (UAS) are playing an increasing role as freighters.” It is widely agreed that large commercial passenger aircraft are unlikely to be operated unmanned in the timeframe of this outlook.

Electric Propulsion and Urban Air Mobility

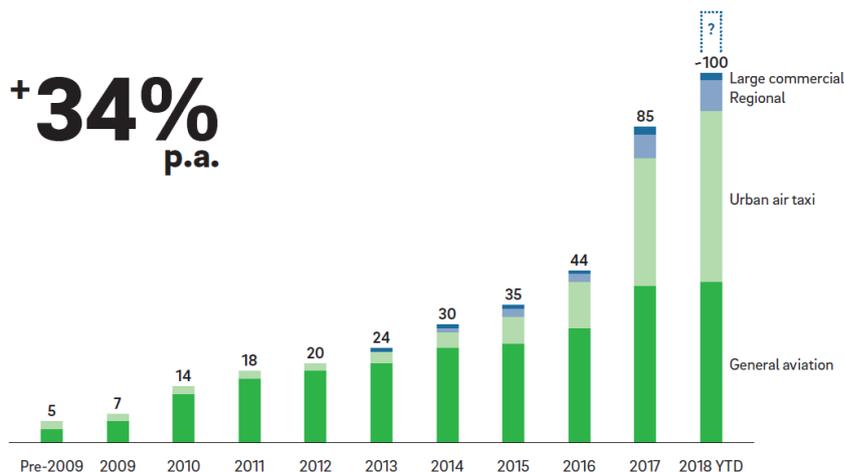
1.20 An area where disruptive approaches are more likely to succeed earlier is urban mobility. The technology to deliver short-range unmanned aerial transport is available. There are many projects aimed at maturing the application of this technology for operational use but the greatest impediments to its commercial use are social acceptance and regulation. Choosing the projects that are likely to be successful and estimating when regulatory approval will be achieved is high risk. As a recent Roland Berger analysis¹ launched at the Farnborough Airshow suggests, electric propulsion is ushering in a new age of innovation in aerospace:

“Autonomous flight is a trend that is running in parallel with propulsion system electrification – and it may be a key building block for certain use cases such as Urban Air Taxis/eVTOLs. Significant progress is certainly required to enable a future in which passenger and unmanned drones can fly in an unsegregated airspace with general/commercial aviation traffic, safely navigating around city infrastructure to complete their missions.

“To handle this complex environment, aircraft will rely first on advanced onboard autonomous piloting an “sense and avoid” technologies. Advanced sensors, increased processing power and decision-making processes relying on machine learning/artificial intelligence may constitute some key aspects of these technologies. A logical starting point and precursor to widescale autonomous manned flight could be the development of systems for safe low-altitude unmanned aerial system (UAS) operations. Experiments involving fleets of drones are already technologically feasible today and could provide valuable information.

“There are a number of notable initiatives already underway in this area in the US (such as the collaboration between UberAir and NASA), and in Europe with the EIP-SCC-UAM initiative in Hamburg, Geneva and Ingolstadt setting up pilot projects to test the first UAS integration into air traffic.”

Chart 2 Known developments by date of announcement (cumulative, 2009 – May 2018)



Sources: Roland Berger

¹ Roland Berger: Aircraft Electrical Propulsion – Onwards and Upwards

MRO and servitisation

- 1.21 ICF predicts that the global large commercial MRO market will grow at 4.1% CAGR to 2026 with strongest growth in the modifications market. As new platforms are introduced with increased intervals, labour intensity of airframe heavy checks will decline. As its fleet and traffic grows, Asia-Pacific will generate and increasing share of MRO demand at the expense of North America and Europe.
- 1.22 Although 'power-by-the-hour' contracts are nothing new for engine suppliers, interest in the provision of other aerospace products and whole aircraft as a service is growing. This can allow operators to pay suppliers for only what they use, align costs with revenues and drive product reliability improvements. The military MRO market is predicted to grow more slowly from \$57bn in 2017 to almost \$62bn in 2024 by ICF.

Aircraft interiors

- 1.23 Passenger travel appears set to continue experiencing steady growth requiring an ever-expanding world fleet of commercial aircraft that is predicted to nearly double over the next 20 years. This global fleet growth, along with lease requirements and aircraft transition work, brings extensive opportunities for the aircraft interiors market.
- 1.24 In 2017, Counterpoint valued the interiors market at \$14.6bn for new-build aircraft and retrofit. ICF estimated that the interiors retrofit market was valued at \$3bn in 2016 and would grow at nearly 6% to \$5.2bn in 2026. For an airline as a customer, "passenger experience" is a differentiator for ticket sales. It includes aesthetic perception, "mood", entertainment, connectivity, food and drink, physical comfort, ergonomics, sound, and colour. To achieve the desired experience, the airlines look to the supply chain for innovation that will reduce costs (e.g. weight savings, reliability, and wear resistance), while further enhancing their passengers' experience and expectations.
- 1.25 Retention of older aircraft, brought about by low fuel prices, and the wish to ensure brand consistency is pushing retrofit demand. Airlines refresh the aircraft interior, to varying degrees, on average 4 to 5 times throughout the life of an aircraft. Lease transitions often see interiors being "downgraded" back to "as leased" condition, even before the interior shows any real signs of wear and tear.
- 1.26 The "skyscape" of aircraft interiors is changing. The aircraft manufacturers have long recognized the huge revenue potential offered by the interior of their aircraft. This has prompted vertical integration in this area which could change the dynamic, and structure of the market. For example, Boeing is now forming a joint venture company in Germany with Adient Plc, previously a major seat supplier to the auto industry. It is thought that developments may be limited in scope, at least initially, so the supply chain retains significant opportunities to position itself to take advantage of growth in the global commercial aircraft fleet. However, innovation and technology will begin to play an increasingly important role in not just achieving full growth potential, but also survival within the sector.

Combat Air Strategy

- 1.27 The UK is a leader in military aviation with a proud history stretching back from the present day to the first days of combat aviation, something the UK has been celebrating this year with the centenary of the Royal Air Force. The best of today's modern combat aircraft like the F-35 and Eurofighter Typhoon depend on UK engineering to provide the RAF and the air forces of our allies with the capabilities they need to defend the skies.
- 1.28 While these fighter jets provide a strong combat air capability for the present, the UK must look to the future and our role in designing, developing and building the next generation of military aircraft.
- 1.29 In an unpredictable and dynamic world where the threat environment is ever-changing, the need to look for new solutions and ways to gain a lead over potential adversaries drives the development of next generation capabilities. Developing and housing this new innovation and intellectual property in the UK should form a key part of the Government's new strategy. Doing so will provide an operational advantage for our armed forces, ensure freedom of action and help in maintaining sovereign capability; it will also strengthen the partnership between Government and the UK's internationally successful defence industry, and position this industry as a world leader in the field for the decades to come.
- 1.30 Investing in future combat air capability will secure thousands of high-value jobs and skills in the UK for the foreseeable future. Cross-collaboration with sectors supporting our combat air offering is a key part of what the industrial strategy is all about – investing in and supporting skills and business of the future for a strong UK economy and industry. Through high-value design, the UK can position itself as an important international partner through technological leadership.
- 1.31 To support such future combat air systems, and to keep up with the speed of threat and the speed of competitors, the Government has launched a new Combat Air Strategy.

2. UK Government must support supply chain and SME growth and productivity

- 1.32 In 2015 (the most recent year with data), productivity of the largest UK aerospace companies was 2.5x that of small companies and 2x that of medium-sized companies. For small aerospace companies employing 10-49 employees, productivity was 20% lower than the EU28 average.²
- 1.33 Eurostat data also shows just how skewed the UK aerospace sector is towards the smaller, lower-productive companies relative to our key European competitors. The UK's challenge is not only to improve the performance of companies with below-median productivity, but to also grow them into larger companies that are more able to compete globally.
- 1.34 Although aerospace sector productivity has grown by almost 60% in the last decade, defence productivity growth has stagnated in recent years. There is insufficient data on the defence

² The Eurostat data has obvious flaws. ONS data shows that aerospace productivity grew by 12% between 2013-2015, while Eurostat data shows an almost 20% decline. One explanation is that Eurostat does not provide size-based statistics for the high-value maintenance and repair segment of the aerospace sector.

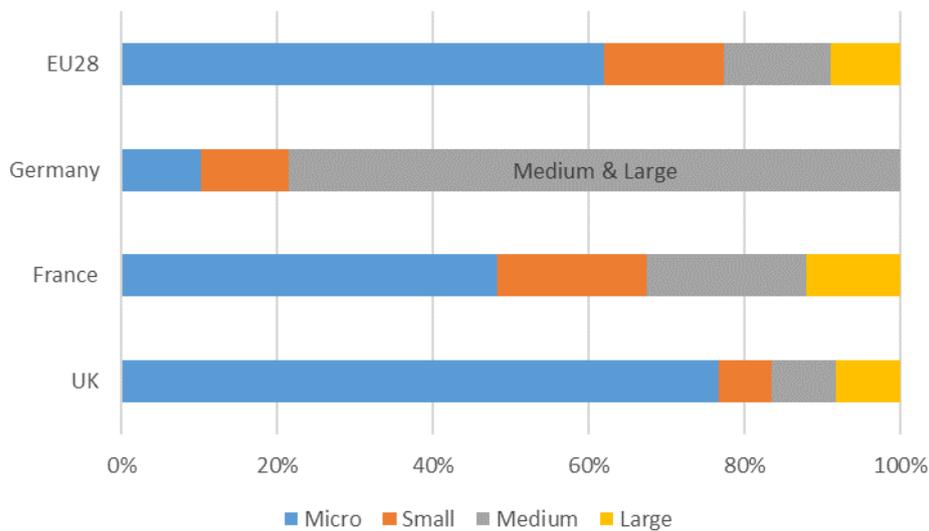
industry to provide further breakdown in productivity performance either by company size or to make adequate comparisons globally. ADS's working assumption therefore, is that the productivity challenges in the aerospace sector also exist across the defence sector.

Chart 3 Productivity in European aerospace sectors by company size, 2011-2015, GVA per employee



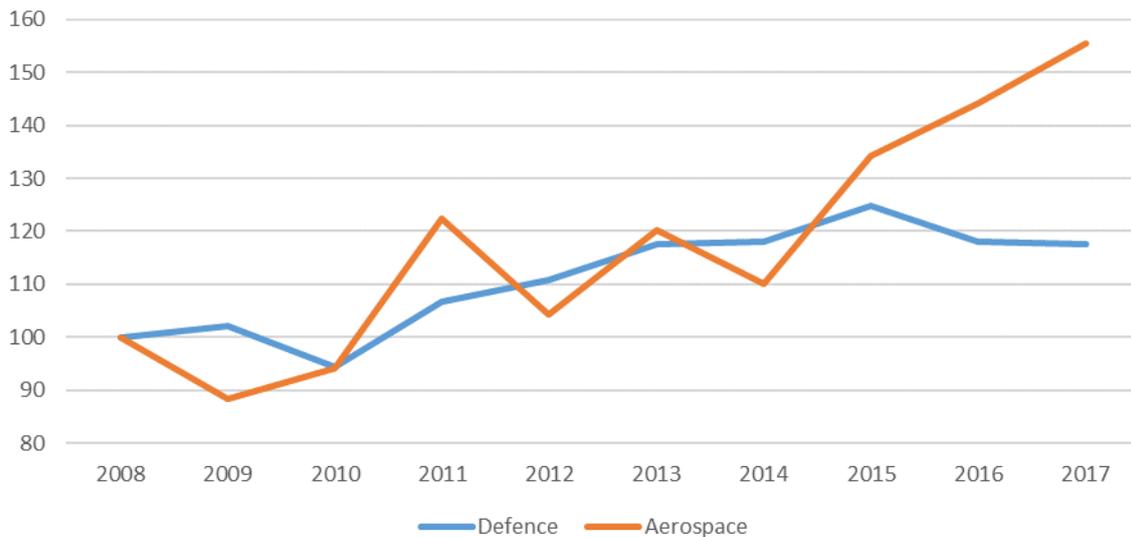
Sources: Eurostat, ADS

Chart 3 Percentage of firms in European aerospace sectors by size class, 2015



Sources: Eurostat, ONS

Chart 4 Defence productivity has lagged behind aerospace productivity in recent years



Sources: ADS, BEIS, ONS, Oxford Economics

1.35 In the UK, the aerospace and defence sectors have operated two successful supply chain productivity improvement schemes in recent years – the light-touch Supply Chains for the 21st Century programme (SC21) and intensive Sharing in Growth (SiG) (see Box 1) – which have highlighted two additional characteristics that ADS believe are fundamentally vital:

- **Management ambition.** The Sharing in Growth (SiG) scheme has shown that management and leadership ambition can be like flipping a switch: companies tend not to demonstrate the characteristics listed in paragraph 3.9 until their management and leadership address the productivity and competitiveness challenge they face.

This point is made clearly in paragraph 5.4 of the Government’s recent Business Productivity Review, which states (emphasis added):

*“5.4 Studies have found that **strong leadership is key to building the desire and vision for a business to adopt new technologies, and that good management practices are vital for identifying the right technological solutions.**”*

- **Customer engagement.** To underpin productivity improvement and growth, manufacturers need to have a clear understanding of why customers buy their products, both now and in the future. Understanding the basis of competition i.e. Quality, Cost, Delivery Performance, Flexibility, Technology/Product or Customer Service, and what level of performance is required to become order winning, is the starting point to inform which productivity improvements must be made.

1.36 The proposals for the new SC21 Competitiveness & Growth (SC21C&G) programme included in the Aerospace Sector Deal bid (which is similar to the supply chain programme announced for the automotive and nuclear sectors) is designed to bridge the gap between the highly-beneficial first step of the SC21 programme and the far more intensive SiG. Participants in both the SC21 C&G and SiG programmes are nominated by their customers, which strengthens the management incentive to invest in sustained productivity gains.

Box 2 – Existing supply chain improvement programmes

In order to continuously and sustainably improve supplier productivity, the Aerospace Growth Partnership has designed, along with the Auto Council, a ladder productivity improvement programme that turn the ‘long tail’ of low-productivity suppliers into globally competitive companies.

The ladder begins with the base-level intervention provided by the ADS SC21 scheme, which delivers basic but essential productivity improvements. Companies can then move through to the SC21 C&G programme to use customer data on supplier performance to determine a targeted productivity improvement plan. The SC21C&G programme is designed to develop a pipeline of companies ready for the intensive Sharing in Growth programme, which transforms companies into truly world-class performers.

Supply Chains for the 21st Century (SC21)

Supply Chains for the 21st Century (SC21) is an improvement programme designed to accelerate the competitiveness of the aerospace and defence industries by raising the performance of its supply chains.

The programme is endorsed by all major UK aerospace and defence companies, it is overseen by the Aerospace Growth Partnership (AGP) and delivered by ADS at a national level working with SC21 participants, prime contractors, Regional Aerospace Associations, strategic partners, accredited practitioners and training partners.

Over its lifetime, the programme has had over 770 active participating companies signed up to the principles of SC21 and engaged in a continuous performance improvement journey.

The programme provides a simple standard improvement framework which defines performance goals and standardises the approach and tools for continuous sustainable improvement. These reflect the exacting requirements of some of the major aerospace and defence organisations worldwide. Participants achieving and maintaining agreed criteria in terms of delivery, quality, sustainable improvement and the associated improvement frameworks (business, manufacturing and relationship excellence) receive national recognition in the form of a Bronze, Silver or Gold Performance Standard Award.

SC21 Competitiveness & Growth (SC21C&G) and National Manufacturing Competitiveness Levels (NMCL)

To underpin productivity improvement and growth, manufacturers need to have a clear understanding of why customers buy their products both now and in the future. Understanding the basis of competition i.e. Quality, Cost, Delivery Performance, Flexibility, Technology/Product or Customer Service, and what level of performance is required to become order winning, is the starting point to inform productivity improvements must be made.

To achieve this, the SC21 Competitiveness & Growth (SC21C&G) programme announced by the Prime Minister at the 2018 Farnborough Airshow will use the standard NMCL cross sector framework (see Annex 1 for more details) to understand and quantify the competitiveness of the manufacturer using three mutually supporting perspectives of:

1. Capability of the manufacturing business
2. Customer competitiveness benchmarking vs. peer group
3. Revenue growth and export

The SC21C&G assessment provides a clear picture of current and future required competitiveness and uses this as the basis to inform which business capabilities must be developed. Once it's clear which business capabilities need development and why, a detailed improvement plan with a supporting business case for investment is developed. Every participating company will have an individual plan which is crafted around what they need to do to become more competitive and win more orders.

Certain factors like leadership capability, degree of aspiration, cultural context, company bandwidth, in-company resource availability, immediate company issues, and company driven timescales will need to be considered when designing a successful approach for each supplier.

There is no one-size fits all. Experience has proven that offering a standardised prescribed solution detrimentally impacts supplier engagement with such frameworks. The improvement activity will only progress if the business case is positive.

Sharing in Growth (SiG)

Sharing in Growth UK was set up in 2013 and is set to deliver a £250m programme of intensive business transformation over four years to 64 UK suppliers. The main funding support for this ambitious and innovative programme has come from the Regional Growth Fund and industry. By focusing on leadership, strategy, culture, skills, and operational excellence, this ambitious and innovative programme is improving the global competitiveness of the UK supply chain. The scheme provides concentrated training and development programmes tailored to the assessed needs of each supplier and targeted at world class standards of performance. The training and development covers all relevant disciplines, including lean operations, manufacturing processes, purchasing, cost modelling, and leadership.

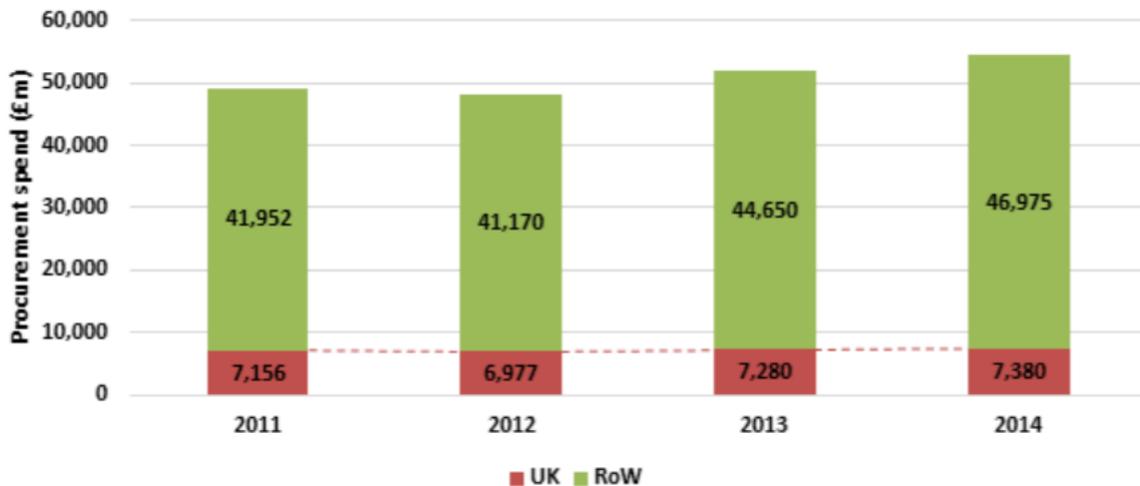
The programme is backed by industry primes and by the Aerospace Growth Partnership's Supply Chain Competitiveness Charter. Signed by the sector's leading civil aerospace manufacturers, the Charter has been designed to strengthen relationships between the large companies and their suppliers so that they work together more effectively to raise productivity and competitiveness.

- 1.37 In the SC21 C&G and SiG programmes, companies undergo detailed diagnostics based on customer feedback and the suppliers' own operations to identify the specific management and operational practices, and skills the company needs to invest in to meet the breadth of customer requirements. The diagnostic is then used to develop a company-specific productivity and competitiveness improvement plan.
- 1.38 For Sharing in Growth, this bespoke model of intervention has delivered over 2 million hours of training for 63 companies, resulting in over £2.5bn in contracts being secured because of the productivity and competitiveness improvements. In addition, the net worth of SiG participants is up 23%, while that of peer companies is flat.

Investing in management ambition

- 1.39 ADS believes that UK suppliers are overconfident in their own global competitiveness and therefore risk being complacent when it comes to investing in their own productivity.

Chart 5 Total procurement spend by Prime contractors and major Tier 1s for the UK and the rest of the world



Source: BEIS

- 1.40 A 2016 study of aerospace supply chains by the Department for Business³ is worth quoting in full on the mismatch in perceptions between suppliers and their customers on the suppliers' competitiveness (emphasis added):

*“Lower-tier companies may lack the management structure and processes required to achieve growth. The survey response indicates **an ambitious UK supply chain, with 78% of respondents indicating that they are either already growing, or are planning future growth. This is in direct contrast to the view of many interviewees that many suppliers are either unwilling to grow, or lack the continuous improvement programmes necessary to effectively manage growth.***

“The declining UK market share illustrated above also supports this more pessimistic view, with much of the growth in Prime contractor and Tier 1 purchasing going abroad. Indeed, only 53% of survey respondents indicated that they use at least one form of improvement programme for efficiency, supporting the interviewees’ views on the lack of appreciation of the need for such programmes. The majority of suppliers that use improvement programmes implement more than one of these programmes, with 48% of all respondents using at least two improvement programmes.

*“The interviewees also expressed the view that **whilst improvement programmes, such as SC21, are highly beneficial for improving competitiveness, they are only a first step and follow-on programmes are required to achieve global excellence.** Additionally, a lack of business acumen, supply chain management, support functions and sales and marketing strategy were identified as contributing factors to the apparent limited ability to grow within the lower tiers.*

*“It is likely that **these apparent deficiencies are leading to the falling UK market share identified earlier** [see Chart 2 below]; these results also support the view that there is a disconnect between the upper and lower tiers of the aerospace supply chain...”*

³ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/536903/bis-16-310-aerospace-supply-chain-study.pdf

- 1.41 As mentioned above, the proposals for the new SC21C&G programme included in the Aerospace Sector Deal bid (which is similar to the supply chain programme announced for the automotive and nuclear sectors) is designed to bridge the gap between the highly-beneficial first step of the SC21 programme and the far more intensive SiG.

Support from all levels of Government

- 1.42 We have highlighted some examples of best practice within our sector in the UK and would encourage Government to further invest in programmes that are already working. We also know what does not work: programmes that rely on more passive methods for diffusing best practice and new technologies.
- 1.43 ADS's experience in delivering the SC21 programme has shown that diffusion has its limits in terms of take-up, lasting impact and the ability target of a given company's specific productivity needs. In fact, ADS believes that relying simply on diffusion to boost productivity can be counterproductive, as it allows companies to tick the productivity box by dabbling in a few different schemes without making a lasting impact on their productivity growth or global competitiveness.
- 1.44 High-value manufacturing sectors, including aerospace, automotive, defence, and nuclear are entering an unprecedented period of high global product demand at all levels of their respective supply chains. Due to the rapid growth of demand and increasing business pressures the primes leading the sectors are seeking significant improvement in competitiveness from their suppliers.
- 1.45 UK Primes and OEMs wish to maintain a domestic supply chain for improved supply chain transparency; but reduced risk and the competitive advantages which should come from close geographic proximity, the poor performance of UK suppliers and rising product cost pressure is motivating them to source product offshore to highly productive or lower cost foreign suppliers who are more willing to make the required investments to develop their capabilities and support the OEMs and Primes (for aerospace this trend has recently been evidenced in a BEIS survey).⁴
- 1.46 This situation is due to three market failures:
- 1. Market failure 1 – Information Asymmetry**
 - One significant cause of the UK suppliers 'competitiveness shortfall' is understood to arise from a lack of investment in supply chain management and advanced manufacturing.⁵
 - This lack of investment arises, in part, from a disconnect between the views of Primes/OEMs and suppliers with regards to the global competitiveness necessary to retain or win new business.
 - Analysis of UK supply chains shows that SMEs are more positive about their global competitiveness and ability to grow.
 - This optimistic view stands in direct contrast to the assessment of many OEMs/Primes that suppliers are either unwilling to grow or lack the continuous improvement programmes necessary to effectively manage growth.

⁴ A capable and competitive domestic supply chain is essential to ensure OEMs and Primes can continue to build their products competitively in the UK and ensure UK suppliers are able to grow their export potential. This can start with improvement of their leadership and operational skills which would need to be further supported by R and D and capital investment to deliver the ultimate solution. This proposal covers the first step.

⁵ BIS Research Paper 294 (2016), UK Aerospace Supply Chain Study

- BEIS analysis of supply chains shows that, even as UK industry is growing, it is not keeping pace with global growth, supporting the more pessimistic view of UK suppliers' global competitiveness.⁶

Solution 1: Structured, publicly funded assessment of a supplier's absolute & relative global competitiveness.

2. Market failure 2 – Information Asymmetry

- The BEIS analysis highlights a lack of awareness of the need for continuous improvement and adoption of advanced supply chain management and manufacturing capabilities amongst the lower-tiers.⁷
- Since a structured approach to understand capabilities and competitiveness does not exist, suppliers have little understanding as to how and why they should improve their competitiveness.

Solution 2: Offer a structured, standardised, quality assured 'improvement support' to deliver individual supplier competitiveness against a pre-agreed business case. In turn this will deliver a stronger and improved UK supply chain.

3. Market failure 3 – Coordination failure & positive externalities

- Current industry and government funded continuous improvement programmes lack sufficient scale and coverage to deliver productivity and competitiveness improvements across the entire supply chain.⁸
- Analysis by BEIS shows OEMs/Primes believe that whilst improvement programmes, such as SC21, are highly beneficial for improving competitiveness, they are only a first step and follow-on programmes are required to achieve global excellence.
- Given the information asymmetries above, individual companies are likely to underinvest in the socially desirable levels of continuous improvement. In addition, if only a handful of companies invest in their own global competitiveness, it would not be enough to sustain the entire sectors' global competitiveness or the UK's global market share.
- Academic analysis shows that where positive externalities and coordination failures exist, government policy should foster coordination in sectors where the economy already shows a competitive advantage.

Solution 3: Government funding supports private investment in structured competitiveness assessments and delivery of targeted continuous improvement plans in order to achieve socially and economically desired levels of investment in supply chain competitiveness.

1.47 The UK needs productivity programmes in which customers identify suppliers that need to improve, then each supplier develops a plan and engages with the proposed improvement mechanism to a national standard which is robust enough to deliver what they require (each and every supplier). Experience suggests that the improvement mechanism must be structured, and offer consistent quality-assured support.

1.48 Our experience also suggests that leaving the suppliers to their own devices does not work, or at best, is sub-optimal. The suppliers therefore need to be managed through the process. It is essential for the suppliers to be provided with a standard recognised syllabus, approved

⁶ *ibid.*

⁷ Only 53% of respondents to a BIS survey of aerospace suppliers were participating in at least one continuous improvement programme.

⁸ Analysis by the Sharing in Growth (SiG) programme shows little to no productivity growth for companies with £5m-£100m turnover

trainers working to the syllabus (endorsed/quality assured by the experts at the Primes) to ensure achievement of objectives.

3. Technology adoption and Industry 4.0

- 1.49 ADS believes that technology adoption is less about which discrete technologies need to be adopted but aren't being adopted, and more about a cultural change needing to take place, and that's all about people and leadership. The programmes and investments coming out of the Government's Industrial Digitalisation Review will not only see large scale R&D and skills programmes, but an investment in digital leadership to help drive through that cultural change.
- 1.50 Workers in the sector, and indeed the leadership and management, are not digital natives, which can make understanding the technology, how it is to be implemented, and what the benefits are, quite difficult. Companies are able to invest but they are unclear as to where in this very large landscape they should be investing. Business cases around digital are therefore difficult to build.
- 1.51 What is important is to see these largely technological capabilities as enablers for improving the productivity and competitiveness of the industry – not technology for technology's sake. These technologies are only of use if they help individual companies to keep striving for improved quality, reduced time and cost of manufacture, increased efficiency, and better products – drivers that have underpinned our industry for decades.
- 1.52 ADS believes that manufacturers of all sizes need to embed technology and digitalisation into their strategies, but not necessarily develop a bespoke digitalisation strategy. Technology adoption and digitalisation have to inform and enable roll-out of the company's business strategy, not the other way around.