Economic Vision: The Cambridge - Milton Keynes – Oxford Arc

Home of the New Innovation Economy

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Contents

1   Introduction

1.1   This introduction sets out what the Cambridge – Milton Keynes - Oxford Arc is today, and provides an overview of the policy context the economic vision responds to.

The Cambridge – Milton Keynes – Oxford Arc

1.2   The Arc is the uppermost part of the geographical area also known as the 'Golden Triangle', which connects Oxford, Cambridge and London. The Arc brings together three Local Enterprise Partnerships, for Oxfordshire, Buckinghamshire Thames Valley and South East Midlands, and the Cambridgeshire and Peterborough Mayoral Combined Authority. [DN – We are redefining the geographic space from the NIC sub-reports, to include all areas covered by the three LEPs and the Combined Authority.]

1.3   The Arc is home to 4.9 million people, and in 2016 contributed £135 billion Gross Value Added (GVA) to the UK economy.[1] It has the highest concentration of world-class research and innovation assets in the world. These include the two highest ranking universities in the world in Oxford and Cambridge, which have been at the heart of the growth of the Arc's knowledge-intensive economy, along with seven further universities and a network of science parks, research institutions, businesses and incubators. Together, these innovation assets form a wider innovation economy that drives growth across the region and generates additional growth for the UK.

1.4   The Arc is home to world-leading research and development and is already renowned as a place of global firsts – pioneering cures for disease, innovating in future energy and transport systems, and developing world-leading strengths in technologies that are shaping the twenty first century. Our knowledge and innovation assets enable us to be world-leading in industries that have global and rapidly growing markets.

1.5   Areas across the Arc are also home to the most highly skilled workforces in the UK, some of the most productive and fast growing cities, and the some of the highest levels of entrepreneurship. Our cities and town are some of the most desirable places to live in the UK. They are also leading the way for the UK for 'good growth', home to two of the top four ranking cities in PwC's 2018 Good Growth for Cities report, which measures the performance of cities against key economic and wellbeing indicators, such as employment, health, income and skills.[2]

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[1] ONS Statistics, 2016
[2] PwC and Demos, 'Good Growth for Cities 2018', 2018.
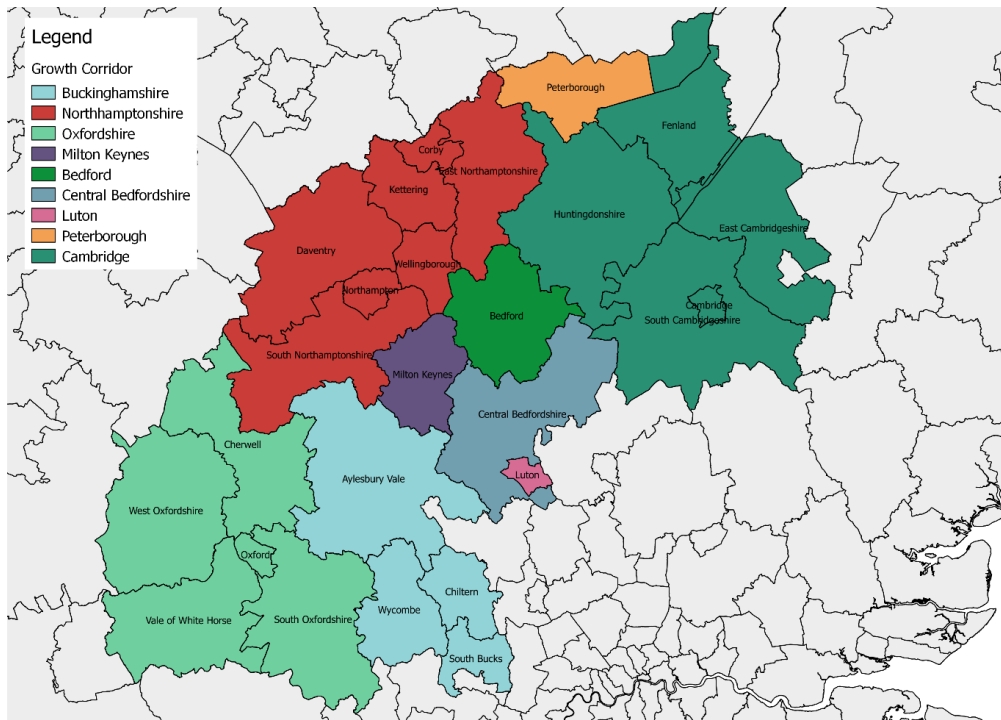
1.6　　*Figure 1 – Location of the Arc, as per county boundaries.*

The vision's purpose and policy context

1.7　　The purpose of the economic vision is to present the Arc region's unified proposition as a globally leading innovation and growth catalyst. The Arc offers access to each of the critical ingredients for business and innovation led growth and this collective offer represents a powerful and coherent expression of the region's current assets and future potential.

1.8　　This Vision comes at critical time for the UK. The world is changing rapidly and in ways we cannot predict. Our futures are being shaped by new disruptive technologies and trends that are transforming the twenty first century and the ways we live and work. Global markets are shifting, and in an uncertain world the UK needs to innovate to address the productivity puzzle it is facing and respond to new challenges and opportunities to remain globally competitive.

1.9　　This Economic Vision for the Arc sets out an ambitious long-term plan to unlock the economic potential of the region to deliver transformative growth for the UK between now and 2050. It provides a vision for how the Arc can better connect its unique and world-leading assets to become truly globally competitive in frontier markets, for business investment and for top talent. With a bolder brand and stronger international presence the Arc can continue to lead the whole of the UK to the forefront of global innovation excellence in the coming years and decades.

1.10　　This will be high-value growth, driven by higher productivity and innovation sparked by better collaboration between industry clusters across the Arc. The NIC has stated that it will be driven by the creation of one million new homes and jobs and improved infrastructure. The stakeholders associated with the vision are determined this growth be sustainable, enhancing the environmental and cultural assets and ensuring that existing and new communities are healthy, inclusive and all benefit from new economic opportunities.

1.11   This Economic Vision has been developed in partnership with the three LEPs and the Combined Authority, who have been given a mandate by Central Government to drive forwards the vision for the Arc.

>   1.11.1.   *[BOX] "Our vision is for the corridor to be the world leading place for high value growth, innovation and productivity. A global hub where ideas and companies are generated and thrive, home to exemplary models of 21st century development, with a high quality environment and outstanding quality of life, and with a strong economic focus that drives inclusive clean growth" Arc members have agreed this statement with Central Government – and this is the driving force behind our vision.*

1.12   It is designed to clearly set out our vision for central Government. It is also designed to help local authority stakeholders, investors, businesses and communities understand the vision for the future of the Arc.

1.13   The Economic Vision for the Arc is a response to this national policy context. In particular, it builds on the Local Industrial Strategies being developed by the three LEPs and the Combined Authority. These strategies bring together extensive evidence and analysis about the performance of each local economy, the opportunities ahead and priorities going forwards.

1.14   The Economic Vision will exist alongside these, setting out a shared set of priorities that will maximise the Arc's potential to collaborate to drive economic growth. It frames the narrative that the opportunity available across the Arc is greater than the sum of its parts working on their individual priorities alone.

1.15   It will also align to emerging proposals for housing and economic growth, including for new settlements, and will feed into an ambitious Economic Vision for the Arc to 2050 that Government intends to develop in collaboration with the Arc.

1.16   This document should be read in conjunction with a number of associated documents. ==These include…==

1.17   This document sets out… *==[NB – To be completed last when the document content is finalised.]==*

The National Industrial Strategy

1.18   It is in this context that the Government published the UK Industrial Strategy in November 2017. The National Industrial Strategy seeks to boost the productivity and earning power of people across the UK and create a Britain that is fit for the future. It seeks to do this by strengthening the foundations of productivity, agreeing sector deals between industry and government, and inviting business, academia and civil society to tackle the Grand Challenge: ageing society, data and artificial intelligence, clean growth and mobility.

1.19   It initiates a regional-led approach to growth, asking each area across the UK to develop a Local Industrial Strategy to take forward the UK's ambitions. The three LEPs and the Combined Authority have been developing individual Local Industrial Strategies in response to this.

The National Infrastructure Commission and Government's response

1.20   Government has specifically been looking to the Arc to deliver economic growth, commissioning the NIC to review the growth potential of the region. In 2017 the NIC concluded that the Arc has the potential to become the UK's Silicon Valley, provided the right planning for homes, jobs and infrastructure.

1.21   To secure the area's success, the NIC recommended delivering one million new homes and jobs in the area by 2050 in new and expanded settlements. This should be supported by investments in transport infrastructure including an Expressway between Oxford and Cambridge and an East West Rail line, and as part of a 50-year vision for the Arc as a whole.

1.22   The response stated that with the right interventions and investment, the Arc can be positioned as a Government's response in October 2018 designated that Arc as a key economic priority and a significant opportunity for transformational growth, supporting the ambition to deliver up to one million homes by 2050 to maximise the Arc's economic potential. With the right interventions and investment, the Arc can be positioned as a world-leading place and can support the National Industrial Strategy aim to boost productivity and prosperity across the country.

1.23   Government has already taken action to deliver the Arc, committing funding for transport infrastructure including the Expressway and East-West Rail, and agreeing an ambitious Housing & Growth Deal for Oxfordshire to support the delivery of 100,000 homes by 2031. [Add other relevant commitments]

2 The Economic Vision

Introduction

2.1 This section sets out our combined economic vision and ambitions for the Arc. Although the economy touches all aspects of our lives, the vision detailed here is not a geographic or societal one but an economic one, exploring how the Arc's economic and business clusters can be connected in new ways and under an ambitious vision that generates growth for the region and for the UK.

Our vision: Home of the new innovation economy

2.2 **The Arc will be a breakthrough region for the new innovation economy. It will build on the distinctive assets and strengths from across the Arc to create an innovation economy that is more than the sum of its parts. The Arc will drive growth across the UK by harnessing technological change to drive improvements in productivity in our businesses and prosperity in our communities. It will provide the critical mass necessary to create an innovation leader that will push the UK to the forefront of global competition in key markets and industries of the future.**

The Arc will be:

2.3 **A place where knowledge collides with world-leading research and development assets to shape existing and new industries.**

The Arc is home to a wealth of unique assets, from world-class universities to globally-renowned industry clusters operating in knowledge-intensive sectors and operating at the cutting edge of global research. When combined, our innovation assets are second to none and will push the UK to the forefront of global innovation in industries of the future.

2.4 **A testbed for innovation that will shape the twenty first century.**

The Arc is the most innovative place in the UK, and will become globally-renowned as a living laboratory for testing innovation and shaping places that harness and embrace new technologies. Together, we will build sustainable, technology-enabled communities and deliver breakthroughs in new and emerging industries that are shaping our futures.

2.5 **A business-led environment where ideas and inventions are rapidly commercialised and spun out into high growth ventures.**

The Arc is already home to a high concentration of high-growth technology firms, a highly skilled and entrepreneurial workforce and a dynamic business base. Working across the Arc, we will become a world-leading hub for high-growth start-ups with a business environment that enables businesses to commercialise technologies, grow to scale, and export internationally.

Our ambition: Growth within limits

2.6 The Arc has the potential to generate transformative growth for the region, and additional growth for the UK. As part of our vision, we have set out the following ambitions: [DN – Does the Steering Group support the following ambitions?]

2.7 **Double (?) the GVA of the Arc economy to be worth £x billion by 2050.**

2.8   The Arc currently contributes around £135 billion to the UK economy each year.[3] [DN - Placeholder]

2.9   **Increase investment by x%, becoming the premiere investment location in the UK.**

2.10   Receiving investment will be critical to enabling us to achieve our vision of becoming a breakthrough region for the new innovation economy. This is why we have including an investment ambition - to increase investment into the Arc by x%.

2.11   **Deliver green growth across the Arc that is sustainable and enhances environmental and cultural assets, including a carbon neutral footprint by 2050.**

2.12   Doubling/tripling the GVA of the region must not be at the expense of environmental sustainability. Our ambition is to ensure growth embraces, protects and enhances the environmental, cultural and heritage assets of the Arc and builds on its natural capital assets to achieve its results. To reduce our environmental impact and ensure the success of the Arc for future generations. Our ambition is for the Arc to lead progress towards carbon neutrality by 2050.

2.13   To do this, growth will be innovation-led, creating and embracing new technologies that support the creation of healthy and sustainable communities and that harness advances in industries such as transport and energy. Solutions invented, tested and commercialised here will also be implemented here, putting the Arc at the forefront of environmentally conscious global generations, economic opportunity and twenty first century development.

2.14   **Ensure growth is inclusive, delivering the benefits of economic growth to everyone across the Arc.**

2.15   Areas in the Arc currently have high levels of disparity, with pockets of both urban and rural deprivation. The economic vision and its delivery is an opportunity to address the inequalities that are undermining economic growth. We will ensure that growth in the Arc promotes an inclusive and diverse economy, with good jobs and greater earning power for all. We will ensure that all communities are able to benefit from the opportunities of economic growth and greater collaboration across the Arc.

In practice: A network of economic clusters

2.16   **Central to our vision is building a network of sector-focused clusters across the Arc that, when connected, become more than the sum of their parts. Together, this network of clusters will foster a breakthrough region for the new innovation economy that will drive growth across the UK economy.**

2.17   The Arc will become a network of well-connected economic and business clusters centered on key industries and connecting across boundaries. Clustering businesses in the same geographical area, or increasing connectivity between them, can lead to direct increases in productivity through economies of agglomeration.

2.18   This is the case both between businesses within the same industry, and between businesses across different industries. In the midst of an era of unprecedented disruption, characterised by the blurring of boundaries between traditional industries as new technologies underpin

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[3] ONS Statistics, 2016

innovations across sectors, agglomeration can have a dynamic effect on growth and productivity by stimulating innovation.

2.19 The benefits of agglomeration for the economy include productivity growth, higher net business startups, increased overseas trade, high quality jobs, and positive spillovers to the rest of the UK.

2.20 We provide more detail on this concept and how it will work in practice across the Arc in chapter 4.

2.21 The next chapter sets out the Arc's key industries, on which the network of clusters and this economic vision will be based.

3 The new innovation economy: Sectors

The foundations of growth

3.1 This section sets out the strong economy that the Arc already has and on which it can build. It first sets out a high level view of why the Arc has such strong foundations for growth. It then goes into more detail on the key industry clusters that the Arc has particular strengths in and which will form the network of clusters of the economic vision.

3.2 These clusters align to those identified in each area's Local Industrial Strategy, and are sectors that are receptive to technological improvements and therefore have high potential for growth when looking forwards to 2050. They rely on similar technologies, skills and strengths, and have a high level of overlap and convergence that will encourage innovation and productivity growth between now and 2050.

3.3 Evidence already exists within each industry of collaboration across the different regions in the Arc, and collaboration across different industry clusters to spark innovation and productivity growth.

3.4 We will develop this network of clusters to enhance connection and collaboration, to generate more growth across the Arc.

3.5 The Arc already has strong foundations for growth on which it can build. [DN – *To include a range of high-level statistics that demonstrate the existing strengths of the Arc.*]

    3.5.1. The Arc already contributes £135 billion of annual GVA to the UK economy.[4]

    3.5.2. Top two ranked universities in the world in Oxford and Cambridge.[5]

    3.5.3. 60% in Oxford and Cambridge hold a degree compared with 36% nationally.[6]

    3.5.4. The most patent applications per 100,000 residents in the UK[7]

    3.5.5. Nine times more patents in Cambridge than the national average.[8]

    3.5.6. Milton Keynes has almost 25% more productivity per worker than the rest of the UK.[9]

    3.5.7. Two of the top UK cities in the European top 20 for innovation.[10]

[DN - Does you agree with the below sectors? Noting that these sector profiles cannot be comprehensive, what is missing from each sector profile that must be included?]

Life Sciences

3.6 The Arc is home to the two globally renowned life sciences clusters in Oxford and Cambridge. They are the strongest life sciences clusters in Europe and already compete internationally with

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[4] ONS Statistics, 2016.
[5] Times Higher Education World University Rankings 2019.
[6] Centre for Cities (2016), Cities Outlook 2016.
[7] Centre for Cities (2018), Cities Outlook 2018.
[8] Centre for Cities (2016), Cities Outlook 2016.
[9] Cambridge Econometrics and SQW (2016) Cambridge, Milton Keynes, Northampton, Oxford Growth Corridor: Final report for the NIC'.
[10] Centre for Cities (2016), Competing with the Continent.

the global leaders in San Francisco and Boston, Massachusetts. Together, the Arc's concentration of assets can rival these clusters and be known as a place where pioneering discoveries and inventions are transformed into treatments and cures for disease. The diverse expertise across the Arc is second to none, and is pushing the boundaries of innovation by applying new technologies such as machine learning and artificial intelligence to deliver world firsts and life-changing innovations.

3.7   The Cambridge life sciences cluster alone is home to over 400 companies, with 15,500 people and contributing around £2.9bn annually to the UK economy.[11] The Cambridge cluster is underpinned by the presence of world-leading R&D at the University of Cambridge and the specialist research institutes, hospitals and businesses in the city, clustered in a number of science parks and with particular strengths in bioscience and pharmaceuticals.

3.8   The **Cambridge Biomedical Campus** combines world-class biomedical research, patient care and education on a single site with the University of Cambridge teaching hospitals. It is home to national research assets including the Wellcome Trust Stem Cell Institute, the MRC Laboratory of Molecular Biology, and Cancer Research UK, along with global companies, such as AstraZeneca. The **Babraham Research Campus** in Cambridge is another leading campus with over 60 organisations on site including the Babraham Institute, and a number of leading bioscience facilities. **Cambridge Science Park** is also home to over 100 businesses working on life-enhancing technologies, with planned further developments including the Bio Innovation Centre.

3.9   Oxfordshire is also home to a leading bioscience cluster, with an estimated 180 companies in R&D and over 150 companies in associated industries – across the Thames Valley there are an estimated 500 biotech, medtech and diagnostic companies.[12] Oxfordshire is home to several global players in the industry as well as a wealth of innovative companies that have been spun out of the universities and have received valuations of over US$1bn, including Oxford Nanopore and Adaptimmune.

3.10   Oxfordshire's life sciences clusters includes leading R&D facilities, with four new innovation centres including the Oxford BioEscalator and the Begbroke Accelerator, and one each at Harwell and Culham. **Oxford Science Park** is home to the life sciences facilities of the University of Oxford, and the **Biomedical Research Campus in Headington** is home to a number of national research assets including the Li Ka Shing Centre for Health Information and Discovery and the Big Data Institute and three NHS Foundation Trusts. **Harwell Science and Innovation Campus** in Didcot has a rapidly growing HealthTec cluster, with research assets such as the Diamond Light Source and the UK's most powerful supercomputer, Emerald, both of which have life sciences applications.

3.11   Buckinghamshire is also home to a growing medtech sector, with the Buckinghamshire Life Science Partnership leading the development of the Buckinghamshire Life Sciences Innovation Centre. The county is also home to number of global industry leaders in healthcare such as GE Healthcare, as well as national facilities such as the spinal centre in Stoke Mandeville.

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[11] AztraZeneca and MedImmune (2018), Cambridge: driving growth in life sciences: Exploring the value of knowledge-clusters on the UK economy and life sciences sector.
[12] OxLEP, Oxfordshire Sector Profile: Life Sciences.

Opportunities <mark>[DN – What are the future opportunities for this cluster? Early suggestions below:]</mark>

3.12 Together, the Arc's life sciences cluster have the critical mass of assets necessary to rival the world's biggest life sciences ecosystems. Looking forward to 2050, the Arc has the potential to develop its life science industry

3.13 **Expanded clusters in the middle of the Arc:** New east-west links across the Arc provide an opportunity to extend the benefits of clustering and open up a new wave of science parks and incubation centres in other parts of the Arc between the two existing clusters in Oxford and Cambridge, and connecting south into London. In particular, this will enable growth in the emerging cluster in Buckinghamshire, where more affordable business and residential space will be attractive to businesses and talent.

3.14 **Arc Life Sciences Network:** We will seek to establish a cross-Arc life sciences industry network, working together to innovate in ways to secure new funding (to replace funding expected from EU programmes), to ensure continued access to venture capital and early stage growth funding

3.15 **Cross-sector collaboration:** Cross-sector knowledge spillovers and collaboration will also provide opportunities for growth going forwards – for example in the growing digital health sectors. This could include improving links between the Oxford, Cambridge and Buckinghamshire clusters with the high performance technologies cluster in Silverstone, and the space cluster in Harwell.

      3.15.1. CASE STUDY: HealthTec cluster in Harwell is able draw on the expertise and strengths of other clusters at Harwell, including space. The cross-fertilisation of ideas across different fields, access to world-leading large-scale science facilities and their associated technologies, expertise and capabilities, and an investment network

3.16 **Testbed for new healthcare technologies and services:** Planned housing growth across the Arc will provide opportunities to pioneer new approaches to healthcare locally, testing and evaluating the application of new technologies and services. Creating testbeds for innovation will enable businesses to better commercialise new technologies and services, and also improve quality of life and build healthy sustainable communities. The new and existing garden towns in Oxfordshire and Buckinghamshire, as well as new developments in the South East Midlands, provide unparalleled opportunities for these living laboratories.

Space

3.17 The Arc is home to the largest space cluster in Europe, competing against global aerospace players such as Silicon Valley in the USA and other emerging clusters in Europe and Asia.

3.18 The space cluster at **Harwell Science and Innovation Campus** in Oxfordshire is the gateway to the UK space sector, with 80 space organisations employing 800 people. It is home to leading public space organisations, including the European Space Agency, RAL Space, Satellite Applications Catapult and UK Space Agency. It is also home to the Science and Technology Facilities Council, with over £2 billion of infrastructure for research and development. Oxfordshire's capabilities stretch across the industry, from 'upstream' manufacturing of

spacecraft to 'downstream' application where companies offer services and products that rely on space-based data or services.

3.19 Global space companies, such as Airbus Defence & Space, have an established presence at Harwell, which is also home to innovative companies pushing the boundaries of space such as Reaction Engines Limited, who are pioneering the next generation of hypersonic and space access propulsion. There are also a range of SMEs from start-ups in the European Space Agency Business Incubation Centre to rapidly growing companies such as Oxford Space Systems.

3.20 **Westcott Venture Park** in Aylesbury Vale, Buckinghamshire, is also home to an important space cluster, with particular strengths in upstream space – the manufacture of spacecraft and sending objects into space. Westcott is home to the National Propulsion Test Facility where the UK Space Agency are investing over £4 million to develop space propulsion engines, along with a 5G Catapult Centre and a new innovation and incubation centre.

3.21 There are other space clusters located across the Arc, including a cluster in **Cranfield**, where the university has particular strengths in aerospace engineering and is home to the Aerospace Integration Research Centre and Aerospace Technology Institute, and in South Cambridgeshire and Stevenage, where the Airbus Defence and Space team is based. **Luton** is also home to a cluster that specialises in aircraft manufacturing and maintenance, one of the top three hubs for business aviation services.

3.22 The space clusters across the Arc have already formed a number of connections – both within sectors and across them. In particular, the unprecedented amounts of data generated from satellite applications is used for an array of 'big data' services that brings benefits to many other sectors.

   3.22.1.   CASE STUDY: Reaction Engines, an Oxfordshire based company, which has now chosen Westcott as the site for developing its new, innovative SABRE engine technology.

Opportunities [DN – What are the future opportunities for this cluster? Early suggestions below:]

3.23 The UK space sector is rapidly growing, and has unique potential to generate growth for the UK - space sector productivity is nearly three times the national average, and the industry is expected to grow rapidly over the coming decades. The UK Government's ambition is to capture 10% of the global space market by 2030 - investing to better connect the Arc's unique and world-leading space cluster is critical to achieving this. Specific opportunities for the space industry include:

3.24 **Arc Space Network:** We will establish an Arc-wide network of companies in the space industry to enhance collaboration between key players across the Arc.

3.25 **Extend the Westcott cluster:** We will extend the Westcott cluster as a key link in the UK space supply chain, building on its capabilities in early-stage propulsion testing and drone applications, and establishing the UK's first in-orbit service demonstration centre.

3.26 **Collaborate to increase skills provision:** We will establish the Space Academy, bringing together partners across the Arc to create new STEM and degree apprenticeships and specialist PhD programmes.

Creative and Digital

3.27 The Arc is home to a number of leading creative and digital clusters. The creative industries including advertising and marketing, arts and film, TV and radio, museums and galleries, as well as computer services and wider digital industries. Milton Keynes, Peterborough, Cambridge, Luton, Oxford, High Wycombe and Aylesbury all have highly concentrated creative and digital clusters, with a number of different specialisations.

3.28 The Arc's central creative and digital cluster is located in **Pinewood**, which is globally renowned for its excellence in state-of-the-art film and TV production. It is home to a range of world-class facilities, services and expertise, along with 250 businesses, including international brands, which drive the UK's fast growing creative exports market. Buckinghamshire is also home to the National Film and TV Centre School, the UK's only 4k film and TV studios.

3.29 Oxfordshire is also home to a globally competitive and strong creative and digital cluster, with more than 4,700 businesses. Oxfordshire's strengths include computer games, software development, cybersecurity, high performance computing as well as film and TV. Oxfordshire is home to major companies including Sophos (cybersecurity), Natural Motion (animation), Rebellion (gaming), some of which developed as spin outs from the universities and have successfully grown to scale.

3.30 These sectors are also particularly strong in Cambridge, which is home to a number of award-winning games companies such as Jagex with other 400 staff in its two studios. Cambridge is also home to the Microsoft Research Lab, the company's first lab outside of the UK, and is joined there by Google, Amazon and Apple. In the city of Cambridge, the IT and digital technologies cluster is highly concentrated, and has a track record of creating companies such as Arm, which was bought for £24bn in 2016. Cambridge, Oxford and Peterborough are also home strong publishing sectors, with Oxfordshire the largest centre of publishing in the UK outside of London. [13]

3.31 Other creative and digital clusters across the Arc include Milton Keynes, High Wycombe, Chiltern, South Bucks and Luton. Milton Keynes in particular has an emerging and growing creative and digital sector, with the second highest proportion of SMEs in high-tech and digital sectors in the UK.[14]

Opportunities [DN – What are the future opportunities for this cluster? Early suggestions below:]

3.32 Looking forwards to 2050, the Arc has an opportunity to better connect these existing clusters to stimulate

3.33 **Connect new and existing clusters:** We will establish stronger links between specific creative and digital clusters across the Arc. For example, 'Film City' being developed in Upper Heyford in Oxfordshire can be better linked to the close Pinewood cluster, and could create a strong link between Pinewood and the film and television cluster in Oxford, as well as the wider creative and digital industry. Other new/expanded clusters include the High Wycombe Station Quarter Hub, particularly for gaming, and the Luton Cultural Quarter.

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[13] Nesta (2016), The Geography of Creativity in the UK.
[14] Centre for Cities (2015), Small Business Outlook.

3.34 **Sector and sub-sector networks**: We will establish sector and sub-sector networks to encourage collaboration between clusters across the Arc. This would recognise the heterogeneous nature of the creative and digital industry and the number of specialised clusters that exist across the Arc. More developed levels of networking are critical to future growth of the creative clusters outside of the main cities, as networking is essential for enabling businesses to have rapid access to information required to detect and adapt to new disruptive trends.[15]

3.35 **Vocational skills at HE and FE levels:** We will work across the Arc, with businesses, stakeholders and education providers, to pioneer new approaches to vocational skill development at HE and FE levels. This could include pioneering creative and digital T-Levels, and establishing a Centre for Immersive Technologies in Buckingham for skills training at all levels.

Advanced manufacturing

3.36 The Arc is a world leader in advanced manufacturing, with particular specialisms in sub-sectors including high performance technology and motorsport engineering. The Arc's high performance technology and motorsport cluster in particular is a unique concentration of industries that specialise in the design and manufacture of innovative technologies, engines and products, incorporating low carbon engineering and the application of lightweight materials and composites.

3.37 **Silverstone** is the heart of the advanced manufacturing sector in the Arc. It is home to 40 advanced manufacturing companies, the Silverstone circuit, and workforce training capabilities of the National College of Motorsport and a rapidly growing Enterprise Zone.

3.38 There are over 4,000 companies, employing 36,000 people, operating in this sector and based within a one-hour radius of Silverstone, crossing over the three LEP boundaries. This brings significant benefits of co-location, networking and a specialist skills pool with strong local roots. This broader region is also home to 8 of the 11 Formula One teams, as well as iconic businesses like Cosworth, Prodrive and Millbrook Proving Ground.

3.39 This 'Motorsport Valley' extends from Silverstone into Oxfordshire, and itself is a £6bn automotive global cluster of high performance technology, motorsport and advanced manufacturing companies. **Milton Park** in Oxfordshire is home to a specific cluster of technology and manufacturing firms such as Cobalt Light Systems, General Electric, BMW and Jaguar.

3.40 Other high technology manufacturing clusters exist in Peterborough, where this industry contributes 20% of the area's GVA, and in Cambridge, which is home to a number of manufacturing companies based in Granta Park and in and around Huntingdon.

3.41 The Arc's strengths in advanced manufacturing expand beyond motorsports to include a range of other sectors, including aerospace, defence, electronic sensors and medical devices. The Arc also has unique and globally distinctive strengths in underpinning technologies such as cryogenics, the production and behavior of materials at very low temperatures.

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[15] Nesta (2016), The Geography of Creativity in the UK.

3.42   Oxfordshire is the global leader in cryogenics, with the most powerful concentration of cryogenic expertise in the world. This is a critical enabling technology that underpins high value manufacturing and engineering across a broad range of sectors. The Oxfordshire cryogenics cluster includes the RAL at Harwell Innovation Campus, which pioneered the development of a multifilament superconducting cable known as the 'Rutherford Cable', and a number of manufacturing and supply chain companies.

3.43   The Arc is home to a number of globally-leading education institutes, that are critical to developing the workforce the region needs to succeed, such as Cranfield University with its specialisms in engineering. The Arc is also home to a number of University Technical Colleges (UTC), for example the UTC in Didcot which is the world's first school to install a cryogenics lab, and the Silverstone UTC which specialises in high performance engineering and business and technical events.

>   3.43.1.   CASE STUDY [DN – We would like the Steering Group to provide case studies for each of the industries.]

Opportunities [DN – What are the future opportunities for this cluster? Early suggestions below:]

3.44   **Arc Advanced Manufacturing Network:** Establish a network to better connect the advanced manufacturing and high performance technology clusters across the globe.

3.45   **Zero emission vehicles:** The advanced engineering sector across the Arc has the capability to innovate to solve the UK's Clean Growth Grand Challenge, developing cleaner, low carbon and energy efficient products and solutions.

3.46   **Cross-sector collaboration:** We will enhance cross-sector collaboration by developing Silverstone as a global high-technology super cluster, driving growth of the sector and collaboration across a broad range of other sectors in which the Arc has strength, including healthcare, clean-tech, space, materials and electronic sensors.

Future transport

3.47   The Arc is at the forefront of innovation in the future of transport - specifically in the research, development and commercialisation of Connected and Autonomous vehicles (CAV), a sector identified by Government as having the potential to be worth £28bn to the UK economy. Under future of transport we are specifically looking at connected and autonomous vehicles, electric vehicles, and the impact of future transport technologies on traditional industries such as logistics, which is a significant industry in the Arc.

3.48   Oxfordshire is at the forefront of CAV development - this is a vanguard application of Robotics and Autonomous Systems (RAS), in which RACE at Culham Science Centre is a key UK centre of excellence. RAS shows us how robots can move people and goods more efficiently with far-reaching implications across industries. Oxford Robotics Institute kick-started the UK's CAV programme in 2010; their spin-out Oxbotica is leading a UK consortium to launch a fleet of driverless vehicles to drive from Oxford to London; and RACE at Culham is one of the four national CAV testbeds. Oxfordshire is also home to a number of other companies including Zeta, Latent Logic and Arrival.

3.49   The wider Arc is becoming globally renowned as a testbed region for CAV, with a number of areas across the Arc investing in test sites to commercialise CAV technologies. Oxfordshire itself is at the centre of a 70 mile radius CAV testing area, with London and Birmingham at each end. Other testing

sites stretching across the Arc include the Multi User Environment Autonomous Vehicle Innovation project at Cranfield; the UK Autodrive project in Milton Keynes, which is a world first in demonstrating a new form of public transport within a shared urban space; and Northampton's 2.5km route for fully autonomous vehicles between its town centre, Enterprise Zone, University Campus and Brackmills Business Park.

3.50 Milton Keynes is another key cluster for future transport systems in the Arc, and has been leading the way with Smart Cities as well as innovation stimulated by the Transport Systems Catapult. The wider SEMLEP area is als home to a strong logistics sector. The logistic sector has significant potential to benefit from the innovation and new technologies developed across the Arc, to boost productivity for the region.

Opportunities <mark>[DN – What are the future opportunities for this cluster? Early suggestions below:]</mark>

3.51 **Arc Future Transport Network:** We will establish a network that brings together the future transport clusters from across the Arc, increasing collaboration between the clusters. In particular this could include further developing the cluster at the Milton Keynes Transport Catapult as a central node along the Arc for future of transport innovation, coordination and collaboration. This network will also look at ways to create a cross-Arc fully integrated transport system, incorporating new technologies in transport such as autonomous vehicles, live journey mapping and ticketless systems. It will also explore future infrastructure schemes to 2050 that can harness new technologies for freight and commuter use.

3.52 **Testbeds for future mobility solutions:** We will establish living laboratories to test new solutions to mobility and future transport technologies across the Arc. These will build on existing testbeds, and will also be incorporated into developments for new settlements. As new homes and infrastructure and designed and built, we will ensure that they are future proofed and ambitious, incorporating the newest technologies for mobility and clean growth. They will innovate in entire transport and mobility systems developed to include sensors to enable smart infrastructure, communications systems such as 5G, MaaS (mobility as a service), and use of data to evaluate technologies for further development. They will also aim to encourage a modal shift away from private car usage, critical to reducing congestion, emissions and achieving our vision of a carbon neutral Arc by 2050.

3.53 **Logistics:** We will invest in our logistics sector based in the South East Midlands, encouraging integration of new technologies and innovations from across the Arc to be integrated into logistics business models. As part of this we will look at new modes of transport for first/last mile delivery, such as drone technology.

Future energy

3.54 **The Arc is home to a number of cluster that are innovating in future energy technologies and services. These clusters are important in tackling the UK's Clean Growth Grand Challenge, and achieving our vision of clean growth and carbon neutrality by 2050. Similarly to future of transport, this industry will be critical to the development of the Arc. As new infrastructure and settlements are built between now and 2050, we must harness innovations and new technologies in these sectors to future proof our communities.**

3.55   Oxfordshire is home to a nationally leading energy cluster, unique in the UK for its specialism in working to develop future energy systems that can work at scale and that have significant overlaps with other sectors, such as transport and electricity. This includes strengths in areas such as novel batteries, battery management systems, and data analytics.

3.56   Oxfordshire is also home to a cluster in the sub-sector of fusion energy, centered on the Culham Centre for Fusion Energy and the Faraday Institution. The UK Atomic Energy Authority (UKAEA) at Culham Science Centre is a lead participant in the coordinated EU fusion programme managed by EUROfusion and operates the largest fusion device in the world, JET. By hosting JET, UKAEA has developed globally unique fusion capability.

3.57   Westcott in Buckinghamshire is also home to a significant energy cluster, with specific capabilities are hydrogen fuel cell testing and development, making it one of the only locations in the UK where the final stages of development and pre-market safety testing can be done for this technology. Buckinghamshire has other innovation capabilities around lithium ion battery development.

3.58   [DN – What assets do Cambridgeshire and Peterborough and the South East Midlands have in future energy systems and technologies?:]

Opportunities [DN – What are the future opportunities for this cluster? Early suggestions below:]

3.59   **Arc Future Energy Network:** We will establish a formal cross-Arc network to bring together clusters working with future energy technologies, both within the energy industry and linking in with other industries such as transport.

3.60   **Pioneering energy infrastructure:** We will pioneer innovative energy infrastructure as part of the development of new settlements and infrastructure across the Arc, to achieve the Government's target of building up to one million new homes. Collaborating across the Arc and setting out an innovative energy strategy that ensures a viable and secure energy supply will be critical to achieving this growth.

3.61   **Clean Growth:** We will seek to pioneer new solutions to the UK's Clean Growth Grand Challenge, harnessing the growing market for clean growth technologies and services and attracting new investment into the region. We will work across our future transport and energy networks to shift towards low carbon transport systems.

4 The innovation network

Introduction

4.1 Central to our vision is building a network of business clusters across the Arc. When connected, these economic hubs have the potential to interact within and between sectors in ways that enhance their productivity, creativity and competitiveness. Connection brings economic adjacencies, agglomeration and scale which helps to assert the region as a globally leading innovation network.

4.2 Our vision is to build on our distinctive assets and strengths from across the Arc to create an innovation economy that is more than the sum of its parts. Together, the Arc can provide the critical mass necessary to create an innovation leader that is capable of pushing the UK to the forefront of global competition.

4.3 The previous chapter set out the main new economic sectors that we will build on to achieve this. In this chapter, we set out how we will deliver this vision through creating a network of highly connected clusters.

Network design: A hierarchy of hubs

4.4 **This network will be centered on a spine the three primary economic hubs of Cambridge, Milton Keynes and Oxford, each of which connects out to a network of secondary centres and economic assets that cooperate across the Arc.**

4.5 The areas around Oxford and Cambridge have already developed considerable knowledge-intensive economies, with strong industry clusters in science and technology-based industries. They are home to world-class universities, as well as numerous research and development assets and globally competitive businesses. While these locations have their own distinctive strengths and specialisms, they will both continue to be the primary hubs for stimulating research and innovation across the region, attracting global top talent and businesses to the wider region.

4.6 The network will also be centered on a rapidly growing third hub: Milton Keynes. Milton Keynes has seen impressive growth over the last few decades, particularly in business and service industries, but there is much more latent potential. Milton Keynes will become the key connectivity point and commercial centre in the centre of the Arc. Its central location as well as unique specialism in its own right as a leading business and professional services cluster will enable it to become the central node in the Arc that facilitates collaboration between clusters in all industries across the region.

4.7 Secondary hubs are essential to success, providing room for growth and receiving the benefits of this in return. Northampton, Luton, Aylesbury, Bedford, Banbury and Bicester all offer specialised locations for business growth, offering a range of land and business accommodation at a range of price points, as well and providing essential economic inputs, markets for products and housing and services for residents.

4.7.1. CASE STUDY: Northampton area has recently seen growth, partly driven by the benefits of a comparative increase in the supply of affordable housing and commercial premises, as well as close links to industrial sectors in the West

Midlands and service hubs to the south. Northampton has above average business birth rates and a large proportion of small and micro businesses.

4.7.2. [DN – what other examples should we use, a box with a mini profile on each hub / cluster?]

4.8 With investment to connect these hubs to other sites and clustering locations across the Arc allows the network to work as a single system. It will also enable businesses and talent to have more flexibility in where they choose to locate, helping solve the critical challenges of affordability and availability of residential and business space that exist within the centre of Oxford and Cambridge

4.9 **4.19[KEY DIAGRAM] insert conceptual diagram of the Arc/network**

The network effect

4.10 The Arc will be a network of clusters, built on the industry clusters in each region that will drive forwards economic growth in the future. It will be a polycentric network that is focused on business clusters rather than geographical areas, and that highlights the unique contribution of each place in the Arc.

4.11 Clusters will be highly connected, harnessing new infrastructure and technology that to enable greater physical and digital connectivity. Increasing the connectivity between businesses and clustering businesses together in the same geographical area can lead to direct increases in productivity through economies of agglomeration.

4.12 Economies of agglomeration stimulate growth in the economy by increasing the productivity of firms, increasing opportunities for overseas trade, creating more high quality jobs, ensuring higher net business start-ups, and generating positive spill-overs for the rest of the UK.

4.13 This will stimulate growth across the Arc through two types of linkages:

4.14 **Links between businesses *within* the same clusters and industries**

4.14.1. Clustering businesses that work in the same industries into the same geographical area, and ensuring that clusters within the same industries across the Arc are well connected and accessible, will stimulate growth. It can lead to direct increases in productivity through:

4.14.2. Improved access to a pool of skilled labour and labour matching: businesses are attracted to an area because of the availability of skilled workers, and skilled workers are attracted because of the availability of high quality jobs.

4.14.3. Enhanced inter-firm collaboration: businesses are more likely to collaborate with other businesses they are most aware of and have easy access to. Enhanced collaboration can lead to new opportunities, research collaboration, and collaboration to access international markets and private investment.

4.14.4. Knowledge spill-overs between businesses in the same industry and clusters: Small and medium sized enterprises (SMEs) can be better supported to grow to scale through learning from other businesses within their cluster and industry.

4.14.5.   Shared supply chains and infrastructure: business operating in the same area and industry have the ability to share supply chains and infrastructure, including innovation infrastructure built specifically for the industry.

4.15   Links between businesses *across* clusters and industries

4.15.1.   We are the midst of an unprecedented era of disruption, characterised by the blurring of boundaries between traditional industries as new technologies underpin innovations across sectors. Connecting businesses and clusters across multiple different industries can have a dynamic effect on growth and productivity by stimulating innovation. This can happen through:

4.15.2.   Cross-sectoral knowledge spill-overs: increased collaboration between businesses and movement of workers between different industries leads to wide dissemination of ideas that stimulate innovation. Many of the most powerful innovative ideas arise when firms or workers from two distinct but related sectors interact.

4.15.3.   Convergence of technologies: traditional industries are increasingly being disrupted by technologies that are shaping the twenty first century. Enabling links between industries will support the convergence of technologies across sectors, stimulating innovation as new technologies unlock new opportunities.

5 Delivering the vision

Introduction

5.1   To deliver our vision and enable the Arc to become a breakthrough region for the new innovation economy, we need to initiate a step change in the way we work together to support our businesses and develop a network of clusters that pushes the Arc to the forefront of global competition. We need to ensure our businesses are highly connected, able to collaborate across regions and industries, and have access to the business space, talent and investment they need to grow.

5.2   Going forwards, each industry will need to undertake detailed analysis of its specific needs for growth. Below, we set out the overarching themes where we will work together to enable growth across each industry and for the Arc as a whole. These themes cover the essential building blocks of a successful innovation ecosystem, and will be critical to develop if the Arc is to redefine itself as a breakthrough region for the new innovation economy.

5.3   They include:

  5.3.1.   A globally recognised proposition

  5.3.2.   Future proofed places

  5.3.3.   Commercialisation culture

  5.3.4.   Innovation assets

  5.3.5.   Workforce of the future

  5.3.6.   Investor ready region

A globally recognised proposition

5.4   **The Arc will be globally renowned as a breakthrough region for the new innovation economy. It will have a strong, instantly recognisable brand that is centred on its unique innovation and commercialisation strengths in industries that are shaping our futures.**

5.5   The Arc will have a globally recognisable brand around which communities, investors and national and international partners can unite. This will position the Arc as a breakthrough region for the new innovation economy, competing with locations across the globe, such as Silicon Valley in the USA and the Guangzhou-Hong Kong Corridor in China. We will work together as the Arc, along with Central Government, to develop and promote a strong brand for the region that sets out our unique proposition, setting out how our individual industry clusters work together to create a whole that is significantly greater than the sum of its parts. This brand will also promote the Arc's quality of life offer, the diversity of places along the Arc, and the opportunities for communities and businesses to locate here.

Developing an international brand will include:

5.6   **Brand promotion:** We will work with the Department for International Trade to develop the Arc's brand – home to the world's highest concentration of research and innovation assets and a highly connected network of clusters in industries that are shaping the twenty first century.

5.7 **Industry propositions:** We will work with the Department for International Trade and our industry bodies to develop propositions for each of our key industries. These will set out the range of assets in each industry from across the entire Arc, demonstrating how together they provide the critical mass necessary to place them at the forefront of global competition.

5.8 **Increased international presence in global markets:** We will work with the Department for International Trade to set out a strategy to increase our presence in global markets, opening new opportunities for trade and investment for the Arc. Through this, the Arc will funnel investment both into the region and into the rest of the UK, accelerate export-led growth, and increase the UK's global market share in key sectors.

Future proofed places

5.9 **The places along the Arc will harness new technologies and innovation to be future proofed and pioneering examples of twenty first century development. The network of clusters will be highly connected, enabling people and ideas to move seamlessly across the Arc to stimulate innovation and productivity growth. The Arc will also be home to healthy and connected communities that use the technologies and innovations developed in the Arc to improve quality of life and enhance the natural, cultural and heritage environments.**

5.10 The Arc will be a highly integrated and connected place. Better connectivity and commuter journeys will widen labour markets and create new opportunities for employment across the Arc. This will increase the economic capacity of each employment hub, increase the levels of interaction and integration along the corridor, and increase affordability of business and residential space across the Arc. The movement of people and ideas across the Arc and the network of clusters will stimulate knowledge spill-overs, innovation and productivity growth. Improved connectivity will enable the Arc to attract and retain a highly skilled and globally agile workforce, and enhance the Arc's quality of life offer as people can move seamlessly across the region, living and working in locations of their choice.

5.11 New and expanded settlements will be developed in a way that harnesses the newest technologies and innovations developed in the Arc, future proofing these places and demonstrating pioneering twenty first century development. This will enable the Arc to become a living laboratory that tests and evaluates technologies in real life communities, and will also shape communities that are technology-enabled to have a higher quality of life. New infrastructure and settlements will be ambitious, looking forwards to 2050 and the new technologies and capabilities that will be reshaping the art of the possible.

This will include:

5.12 **Infrastructure**. We will work with the private sector and Government to complete the East-West Rail link that will provide fast and extensive rail connectivity across the Arc; a fully realised Expressway to link the three cities; and upgraded radial links that connect south to London and upwards to the Midlands. We will provide full level transport integration between regional and local level transport systems to ensure seamless connectivity across the entirety of the Arc.

5.13 **Future of mobility.** We will model the Arc as the future of mobility for the UK, as a global innovator in multi-modal future transport and energy systems that enhance connectivity, the

natural environment, and healthy and inclusive communities. This will include being the first region to roll out widespread use of autonomous and electric private and shared vehicles. We will use new technologies to deliver a fully integrated, technology-enabled, real-time multi-modal transport system to provide seamless connectivity for passengers. We will address congestion and air quality in the region by encouraging shared, clean mobility wherever possible and active transport as the priority mode for short journeys.

5.14 **Living laboratories.** To meet the Government's ambition to deliver up to one million new homes in the Arc by 2050, we will need to develop new and expanded communities. This provides an unparalleled opportunity to create communities that are living laboratories, developing innovation in place-making at scale. These communities will be globally recognised as sustainable, liveable places that utilise new technologies and services to tackle challenges, including the UK's Grand Challenges: mobility; ageing society; data and artificial intelligence; and clean growth. They will incorporate new ways of building housing, designing communities, providing public services, and improving mobility and will be healthy, inclusive and sustainable.

Commercialisation culture

5.15 **The Arc and its network of clusters will be a testbed for commercialising innovation and technology, with a dynamic business culture that encourages entrepreneurship and commercialisation and enables businesses to grow to scale. The Arc will become a world leader in spinning out companies that grow to market values of over a billion US dollars.**

5.16 A dynamic business culture is a culture in which entrepreneurship, investment and innovation thrives. It covers broad factors, such as regulation and competition, as well as cultures of collaboration and knowledge exchange that encourage innovation and commercialisation.

5.17 The network of business and industry clusters across the Arc will be underpinned by a dynamic business culture that enhances collaboration between and across industries, stimulating innovation and business growth.

This will include:

5.18 **Industry Boards:** The Arc's network of clusters will be underpinned by enhanced collaboration between clusters within and across industries. We will initiate this by establishing a board for each industry that brings together the clusters and economic actors in that industry from across the Arc. Each industry board will be supported to develop its own secretariat and a space in a central location to connect and collaborate. Boards will be responsible for a number of linked recommendations, e.g. liaising with DIT to develop sector propositions for international trade, as well as developing industry-specific skills and apprenticeships schemes available to people from across the Arc. They will fit into a new governance structure for the Arc, to be agreed with Central Government in early 2019.

5.19 **Cross-sector networks:** We will establish cross-sector networks to enable businesses across different industries to collaborate and initiate knowledge transfer that will stimulate innovation and productivity growth. This will be responsive to changing technological trends, and the new industries and technologies that will emerge over the next thirty years, to ensure that the Arc is at the forefront of the industries of the future.

5.20 **Testbeds and living laboratories:** Linked to the above theme on liveable place, we will work together across the Arc to designate new and existing communities as living laboratories that

act as test bed for innovations and technologies. As part of this, we will work with central Government to designate new regulation zones across the Arc that will enable businesses to more easily test and commercialise technologies. We will also create cross-Arc partnerships for specific living laboratories and testing zones that go across existing boundaries and borders. New testbed zones and commercialisation centres across the Arc will benefit from a greater amount of available and affordable space in the central portions of the Arc .

Innovation assets

5.21 **Our vision is for the Arc to have the highest concentration of innovation assets in the world, which are highly integrated into the economy through the network of clusters.**

5.22 A strong innovation economy must be anchored by national and international innovation assets, ranging from education institutions, national and international research facilities, and world-class industry clusters. The Arc already has one of the highest concentration of innovation assets in the world, with its world-class universities and research institutions attracting global top talent and business and stimulating innovation, spin outs and business growth across a range of sectors.

5.23 We will build on these, ensuring they are better connected as part of our network of clusters, and invest in new keystone assets that will enable us to become a breakthrough region for the new innovation economy.

This will include:

5.24 **Innovation infrastructure.** We will invest in developing new innovation infrastructure, linked to our network of clusters, which will push us to the forefront of global innovation in new technologies and industries of the future. This will include, for example, being home to the UK's first twenty cubit **quantum computer** by 2020.

[DN – We would like to discuss additional ideas for innovation assets across the Arc.]

Workforce of the future

5.25 **The Arc will be a spring of world-class talent and the number one UK career destination, both attracting global top talent and nurturing the local labour market to develop the skills needed to become a workforce of the future and enable the innovation economy to thrive. The Arc will be a place of opportunity and inclusivity, where people are enabled to succeed.**

5.26 Talent is integral to the knowledge-intensive, innovation economy – the ability to attract and retain world-class talent, as well as nurture the talent and skills of the local workforce and developing skills aligned to business and industry need, is critical for future growth.

5.27 The Arc will build on its already highly skilled and qualified workforce to become a hub of world-class talent that can be mobile across different areas of the Arc as well as across industries, stimulating knowledge spill-overs and enhanced collaboration. We will work closely with businesses as well as education providers to ensure that skills development are aligned with the changing needs of business, to ensure that our workforce is fit for the future and that

people across the Arc can be reskilled and upskilled to engage in the twenty first century economy.

5.28 Recommendations above on increasing connectivity will widen the labour markets, increasing the available pool of talent for businesses across the Arc to hire from, as well as expanding job opportunities for local, national and international talent. On top of this, we will also introduce:

5.29 **Industry-specific skills programmes**: Industry boards, bringing together businesses as well as education providers and professionals for secondary, further and higher education, will be responsible for establishing skills programmes to upskill and reskill the workforce. Industry boards will work both individually and collaboratively where skills overlap, and will ensure that skills programmes work towards inclusive growth and towards aligning skills development with business need. This will ensure greater business leadership and engagement in skills development.

5.30 **A revolution in education:** We will set up a cross-Arc education panel to work with local authorities, education providers and professionals and businesses to initiate a step change in early years, primary and secondary education. This will support all children and young people from across the Arc to be coached and mentored about the innovation economy, and supported to develop the skills needed to succeed in the workforce of the future.

5.31 **A university network.** We will build on existing networks of collaboration between universities in the corridor for developing skills and educational advantage for existing and future communities.

Investor ready region

5.32 **The Arc will be an investor ready region, and a central UK hub for attracting a diverse range of investment for the region and the rest of the country. Our vision is to maximise returns for investors and build an investor community that will enable transformative growth across the Arc between now and 2050.**

5.33 Availability of finance is essential to creating and commercialising innovation, scaling spin outs and investing in the talent and infrastructure necessary for innovation to flourish. We will diversity our investment strategy to attract venture capital, business angels and sovereign wealth.

[DN – The Arc needs to attract a wider range of investment. Are there any particularly investment strategies you would like to pursue, for example developing a proposition to attract more Sovereign Wealth, venture capital and angel investors to the region? Are there any specific funds you would like to see set up?]

6   Next Steps

6.1   This document has set out our Economic Vision for the Arc to 2050 – to become a breakthrough region for the new innovation economy. This will be founded on a unique and distinctive network of clusters that promote collaboration and integration across the Arc, stimulating innovation and business growth. By better connecting our clusters and providing them with the support they need to find investment, business space and talent, the Arc will provide the critical mass necessary to become a global innovation leader. The UK needs the Arc to achieve this vision if it is to continue to compete at the forefront of global innovation in key markets and industries of the future.

The next steps for the Arc include:

Governance

6.2   The Economic Vision demands that there is a way of engaging with the region as one entity, rather than as the collection of local authorities, Local Enterprise Partnerships and Combined Authority. Establishing a visionary regional governance mechanism will be critical to enabling cross-Arc collaboration, connecting the network of clusters and creating a highly competitive economy that acts as an engine of growth and innovation and a powerful attractor for skilled labour and private investment.

6.3   The Government has set out its commitment to working with local authorities to put in place appropriate governance arrangements to support the delivery of the wider Arc priorities. This governance structure will support the delivery of local growth while retaining appropriate democratic accountability. It will have a clear and proactive remit, be streamlined and practical to 'do business' with Government, stakeholders and investors with ease, and have sufficient influence and expertise to manage decisions and maintain confidence in the success of the Arc.

Delivery plan and investment prospectus

6.4   This Economic Vision will be followed by a detailed delivery plan and investment prospectus. This will set out in more depth how we will work together across the Arc, and with our local, national and international partners and stakeholders, to deliver our vision.

6.5   Delivering a programme of the size and complexity will require partners to develop their capacity across a number of areas – including a number of technical fields, as well as the project management required to ensure effective delivery. The partners would benefit from an external strategic delivery and finance partner that would provide strategic implementation advice / finance and commercial advice / procurement advice / program management support as well as deep technical advisory support for the partners to dip into as and when required.