
LINK PARK DATA CENTRE

Economic Benefits Statement
Final Report

November 2020

LINK PARK DATA CENTRE
ECONOMIC BENEFITS STATEMENT
NOVEMBER 2020

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EXECUTIVE SUMMARY

1. This economic benefits statement addresses the economic value to Buckinghamshire, in terms of employment, gross value added (GVA) and strategic added value, of a data centre at Link Park.
2. Our calculations are based on published research¹ that identifies the value of the data economy at the national and regional level, capacity for growth, the value of data centres and on site employment at data centres of the type envisaged for Link Park.
3. To estimate the scale of local benefits, we have modelled the scale and structure of the data economy in Buckinghamshire and its growth potential to 2025 using local sector level jobs and GVA data from ONS², as a basis to establish Buckinghamshire's share of the benefits arising from a data centre located at Link Park.
4. To sense test our assumptions and distribution of benefits, we have also modelled the scale, structure, regional and national share of the digital sector in Buckinghamshire, using the DCMS³ sector definition, local GVA and jobs data published by ONS.

About the Data Economy and the Value of Data Centres

5. The Data Economy can be defined as the 'financial and economic value created by the storage, retrieval, and analysis - via a sophisticated software and other tools - of large volumes of highly detailed business and organisational data at very high speeds'.
6. These activities are present, to varying degrees, in every sector of the economy. In aggregate, they combined to produce a total GVA of £73.3 billion in 2016. The ICT, financial services, and professional services sectors - the largest contributors in the U.K. - accounted for 64% of this total.
7. Nationally the data economy is estimated to be worth about £77bn in 2018, accounting for 4% of UK GVA, a sizeable proportion, albeit far smaller than its potential. It is estimated that the UK data economy operates at 58% of its current potential. Investing in data centres is key to closing the gap and driving high value economic growth in the future.

¹ The Data Economy Report, Digital Realty, 2018

² Business Register and Employment Survey and Regional Gross Value Added (balanced) by Industry: all NUTS level regions, 2020

³ DCMS Sectors Economic Estimates, 2020

8. The potential value of the data economy in 2025 is estimated to be £86bn, assuming that investment is constrained, increasing to £102bn, if constraints, including constraints on investment, are relaxed.
9. Data centres are specialised buildings primarily housing computer equipment combined with high-capacity telecommunications infrastructure, storage systems and energy supply. They enable the receipt, storage, transmission and processing of very large quantities of digital data generated because of the increasing number of digital devices and functions across a range of applications and sources; including telecoms, financial services, retail, transport, health, entertainment and social media.
10. Data centres require substantial investment to build and fit out, with often over £100 million required for each data centre (80% fit out) and £1bn investment over the data centre lifetime. Consequently, they require a highly skilled workforce to maintain and operate the equipment provided within each centre.
11. There are estimated to be in the region of 500 data centres in the UK, employing about 46,000 workers, an average of 92 workers per data centre, with an output of GVA £135,000 per worker. This is exceptionally high value in the context of a UK data economy with an output of GVA £64,000 per worker. We expect that a data centres of the type envisaged at Link Park (20MW colocation) will employ 90 workers, based on the average number of workers per data centre.
12. In the UK, the average amount of GVA per data centre is estimated to lie between £291 million and £320 million p.a. This range is significantly higher for newly built data centres, which add between £397 million and £436 million p.a.
13. For this assessment we assume that a new data centre adds £417m GVA per annum to the UK economy, the mid-point of the new data centre figures identified above.

The Benefit to Buckinghamshire

14. As discussed at the start of this summary, the apportionment to Buckinghamshire is based on the value of the on-site data centre workers, the area's share of the data economy in a national context, and comparable data centres.
15. Buckinghamshire is adjacent to the dominant London market which account for about 30% of the data economy. Buckinghamshire's host region, the South East, is the second largest regional data economy, accounting for about 20% of the UK total.
16. As explained above, construction and fit of a data centre requires investment of about £100m supporting an estimated 200 jobs on site.

17. Once operational, a data centre at Link Park will require 90 highly skilled workers on site, generating a direct local impact £12m GVA per annum.
18. As well as direct jobs, the data centre will have the indirect effect of creating at least 65 skilled in the Buckinghamshire's data economy and a further £3.8m GVA per annum.
19. We have also considered strategic added value, addressing the data centre as part of the investment required to unlock the growth potential of Buckinghamshire's data economy. Based on published research, we estimate that Buckinghamshire's data economy could increase its output from £631m GVA in 2018 to between £740m GVA and £890m GVA by 2025.
20. The higher figure depends in part upon increased capital investment, and increased absorption of data analytics and IoT, compared to trend levels. Investment in data centres are central achieving this. In employment terms, based on data economy GVA of £64,000 per worker, the benefit to the Buckinghamshire economy would be a contribution towards the creation of up to 4,200 new jobs in the high value data economy.
21. Compared to the GVA per worker across all sectors (c£51,000) the data economy is 1.25x more valuable data centre workers are 2.6x more valuable. Accordingly, they are key drivers of national economic growth and productivity, the latter being a key UK Industrial Strategy and Buckinghamshire Local Industrial Strategy priority. The value of data centres is also reflected in their rateable value.
22. We estimate that a 55,000 sq. m data centre at Link Park would have a rateable value of £6.8m and that business rates would be £3.4m per annum.

CONSTRUCTION AND FIT OUT

£100M
INVESTMENT

200
JOBS

DATA CENTRE DIRECT LOCAL IMPACT

£12M
GVA PER ANNUM

90

HIGHLY SKILLED
JOBS ON SITE

DATA CENTRE INDIRECT LOCAL IMPACT

£3.8M
GVA PER ANNUM

70

SKILLED JOBS IN
BUCKINGHAMSHIRE

BUCKINGHAMSHIRE DATA ECONOMY NOW

£630M
GVA PER ANNUM

11,400

SKILLED JOBS

BUCKINGHAMSHIRE DATA ECONOMY IN 2025

**£740 TO
£890M**
GVA PER ANNUM

**14,000 TO
16,000**
SKILLED JOBS

ENABLING DATA ECONOMY GROWTH

+£260M
GVA PER ANNUM

+5,000
SKILLED JOBS

1.0 INTRODUCTION

- 1.1 Barton Willmore's has been instructed by Link Park LLP to assess the economic benefits of a 55,000 sq. m, 20 to 40 MW data centre at Link Park, Thorney Mill Road, UB7 7EZ.
- 1.2 To that end, this report addresses the economic value to Buckinghamshire, in terms of employment, gross value added (GVA) and strategic added value, of a data centre at Link Park.
- 1.3 Our analysis is grounded in published research that identifies the value of the data economy at the national and regional level, capacity for growth, the value of data centres and on site employment at data centres of the type envisaged.
- 1.4 The remainder of this Economic Benefits Statement is structured as follows.

Section 2 addresses the value of data centres, explaining their purpose, drivers of growth and value to the economy.

Section 3 focuses on national and local industrial policy and demonstrates the significant extent to which boosting productivity and increasing earnings relies upon growing the data economy.

Section 4 sets out the economic benefits and strategic added value of a data centre at Link Park at a local (Buckinghamshire), regional (London and the South East) and national level, alongside the assumptions used and an explanation of the process followed.

2.0 THE VALUE OF DATA CENTRES

- 2.1 Data centres are specialised buildings primarily housing computer equipment combined with high-capacity telecommunications infrastructure, storage systems and energy supply. Data centres enable the receipt, storage, transmission, and processing of very large quantities of digital data generated because of the increasing number of digital devices and functions across a range of applications. They are equipped with a guaranteed and resilient power supply and high bandwidth connectivity. Data centre functions are performed by servers (computers that are usually assigned to specific roles as opposed to personal computers which are more generic)⁴.
- 2.2 The demand for data centres is derived from an increasing reliance on computer use, fuelling growth within the digital economy. The data centre sector has demonstrated rapid, sustained and apparent recession-proof growth without government assistance. It has driven growth and generated high value-added jobs throughout a complex supply chain. They also support technologies that will reduce the carbon intensity of economic activity - smart metering, smart transport, teleworking, e-commerce and dematerialisation.
- 2.3 A report by Intellect comment *that 'Data should be regarded as one of the key utilities of the 21st century, along with energy and water. In the same way that governments prioritise the efficiency and security of their energy supply and distribution, they must recognise in data centres a key technology, resource and skill set that should be retained within national and economic borders. All high-tech manufacturing and knowledge economies are especially dependent upon ICT and on data centres in particular'*⁵.
- 2.4 It is evident that Data Centres do not grow in isolation. A single data centre can provide the IT function for thousands of businesses. Data centres contribute to growth across the wider economy. The digital services they provide improve efficiency and make customers more competitive, irrespective of their area of business. Data centres are key components of the wider cloud computing ecosystem and present an opportunity for the UK to capture the full economic value, efficiency gains and growth potential of the transition to cloud networks⁶.
- 2.5 Data centres involve investment equating to hundreds of millions of pounds of construction, engineering and telecommunications infrastructure. Over their 15 to 20-year life investment is likely to equate to around £1bn. This simply relates to management and maintenance of the infrastructure (i.e. the running costs of the building) and does not include the hundreds of

⁴ Intellect, So What Have Data Centres Ever Done For Us, July 2013, Page 5

⁵ Intellect, So What Have Data Centres Ever Done For Us, July 2013, Page 6

⁶ Intellect, So What Have Data Centres Ever Done For Us, July 2013, Page 7

millions of pounds of IT hardware that it houses and its associated supply chain, or, more importantly, the economic activity that is enabled and supported by this data centre, or other spill-over effects.

- 2.6 Data centre development in the UK represents significant investment value, both from UK operators expanding their activities or building new sites and from inward investment by multinationals. The analysis below shows that data centre investment in the UK was \$3.35bn (£2.1bn) in 2012. This is second only to that of the US at \$3.5bn (£2.18bn) and marginally ahead of China, which spent \$3.1bn⁷.
- 2.7 The importance of data centres to growth is captured in the following quote from UKTI *"if we are to encourage technology companies from overseas to expand into the UK, rather than other countries, it is vital that they have the infrastructure here to enable them to run their businesses. We need to have the infrastructure in place now as these are fast-moving companies that don't wait for markets to catch them up. The UK needs additional data centre capacity to meet this need for not only niche technology companies, but the data centre providers themselves"*⁸.
- 2.8 The Intellect report⁹ refers to the UK as a perfect location for data centres from a communications point of view. With unparalleled connectivity westward to the USA and eastward into Europe, it would be hard to improve the UK's strategic position. Other European nodes like Amsterdam and Frankfurt may have better eastbound connectivity but cannot match the UK's bilateral connectivity.
- 2.9 Data centres generate both direct and indirect employment. In terms of direct employment this includes the initial construction phase, the management of the data centre infrastructure and the management of the ICT services and hardware housed within that data centre¹⁰.
- 2.10 For the construction phase, a single large data centre represents around £100m of inward investment just for the build. Of this, 20% is for the shell and 80% is for the electrical and mechanical infrastructure which requires high end engineering and technical skills at all stages from design to implementation¹¹.

⁷ Intellect, So What Have Data Centres Ever Done For Us, July 2013, Page 7

⁸ Intellect, So What Have Data Centres Ever Done For Us, July 2013, Page 8

⁹ Intellect, So What Have Data Centres Ever Done For Us, July 2013

¹⁰ Intellect, So What Have Data Centres Ever Done For Us, July 2013, Page 8

¹¹ Intellect, So What Have Data Centres Ever Done For Us, July 2013, Page 8

- 2.11 Existing data centre operators in Slough and London (Equinix, Telecity and Telehouse, among others) have set up their own apprenticeships to give young local people technical and business skill sets¹².
- 2.12 Indirect employment generated by data centres is much more significant than direct employment. Data centres generate two forms of indirect employment: the first relates to the creation of jobs in the supply chains that serve the industry. The second form employment generated by data centre clustering and co-location.
- 2.13 The construction of a data centre alone involves three separate supply chains: the supply chain involved in the physical building, the supply chain involved in implementing the communications infrastructure (sometimes known as “holes and poles”) and the supply chain involved in the provision, management and maintenance of the ICT equipment that is housed in the data centre. But data centres also generate indirect employment because they demand a wide range of high value-add professional services.
- 2.14 Companies tend to cluster, or co-locate, other corporate functions around their data centre locations. Clustering and co-location in the UK encourages companies investing in data centre infrastructure to locate additional corporate functions in the same place, and this clustering is augmented by competitors, customers and “competitors who perceive these locations as potential hubs for a range of associated activities. The second reason is that some data is location-specific and there is interdependency between customers and their data centre provider.
- 2.15 The UK Data Economy is estimated to have generated economic output (GVA) worth £73.3 billion in 2016. The largest contributions to this total were provided by the ICT, Financial and Professional services sectors: these together accounted for 64% of the total¹³.
- 2.16 The average amount of GVA per data centre is estimated to lie between £291 million and £329 million per annum. This range is significantly higher for newly built data centres, which add between £397 million and £436 million per annum¹⁴.

¹² Intellect, So What Have Data Centres Ever Done For Us, July 2013, Page 8

¹³ Data Economy Report 2018, Page 35

¹⁴ Data Economy Report 2018, Page 81

Data centre employment and multiplier effects

- 2.17 There is no authoritative source for estimating the number of workers employed to operate or work at data centres. Our starting point is the Data Economy Report, which tells us that in 2015, UK data centre operators employed a workforce of 46,000. It then adds that in 2017, there were over 500 data centres located in the UK, with 70% of these located within or around the M25.
- 2.18 Setting the different years, for the job number estimate (2015) and data centre estimate (2017), data centres divided by jobs yields an average of 92 workers per data centre. Addressing more recent evidence, it appears that the UK market is dominated by colocation data centres, that is, the data centre owner selling space, power and cooling to multiple customers in a specific location.
- 2.19 According to the Data Centre Catalogue (accessed online, June 2020) there are 342 data centres in the UK. Data Centre Map (accessed online, June 2020) lists 271 colocation data centres in the UK. Whilst it is likely that neither list is comprehensive (set against the estimate quoted in the Data Economy Report 2020) it appears that colocation data centres dominate supply at the present time. For that reason, we use the Data Economy Report 2018 derived average of 90 (rounded down from 92) workers per data centre as our colocation data centre employment estimate.
- 2.20 Distinct from colocation data centres are hyperscale data centres; facilities that are owned and operated by the company they support. This includes companies such as AWS, Microsoft, Google, and Apple. There are estimates to be 500 hyperscale data centres worldwide (Data Centre Knowledge, accessed June 2020) and the Data Economy website tells us that 6% (30, based on the Data Centre Knowledge number) are located in the UK.
- 2.21 To understand the number of people required to operate a hyperscale data centre, we have examined the following case study evidence.

Facebook Case Study

- 2.22 According to the Impact of Facebook's U.S Data Centre Fleet (March 2018) after five years of operation, an average Facebook data centre has an on-site workforce of 196 people. When accounting for income spent by suppliers and people, for every 1 Facebook data centre worker there were 5 jobs supported elsewhere in the economy by operating expenditures. For every \$1 million in Facebook spending on data centre operations, there were 13 jobs supported elsewhere in the economy.

Google Case Study

- 2.23 Google data centres contribute to jobs, GDP, and income at the national level. From Figure 1, we see that Google directly employs 1,900 workers across six data centres, equating to around 300 direct operational workers per centre. There are over 440 indirect workers and a further 585 induced positions supported by each centre¹⁵.

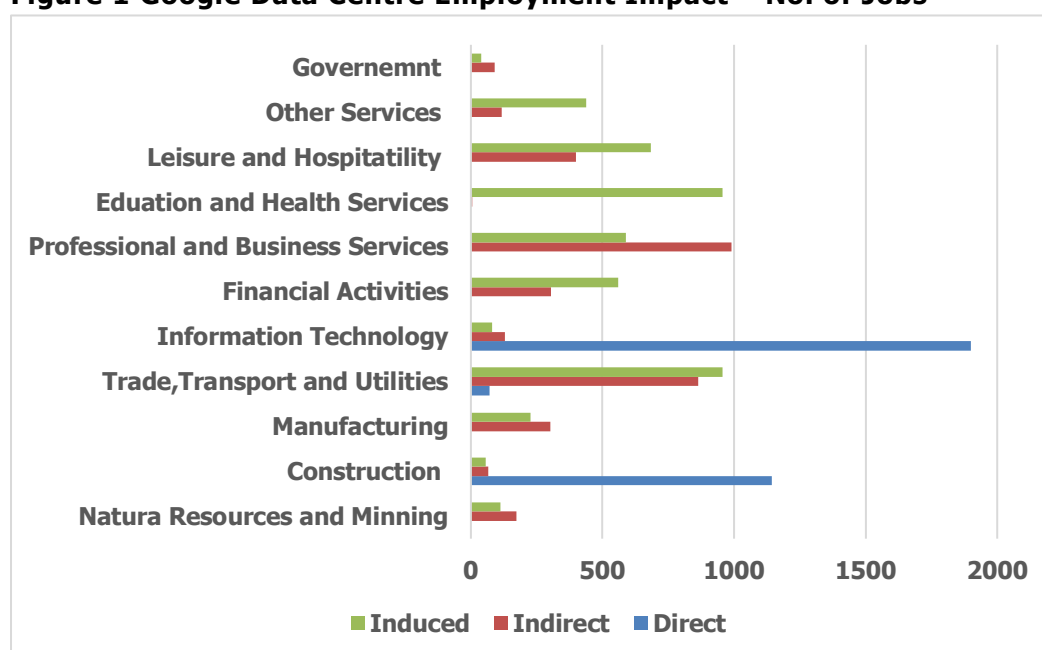
Table 1: Supporting 11,000 Jobs Nationwide

	Direct	Indirect	Induced	Total
Operations	1,900	2,620	3,510	8,030
Construction	1,140	600	950	2,690
Renewable	70	210	240	520
Total	3,110	3,430	4,700	11,240

Source: Source: Oxford Economics, IMPLAN

- 2.24 In addition, in an average year, there are more than 1,100 construction workers engaged on site working to expand or upgrade the facilities on the six campuses (combined).
- 2.25 Figure 1 sets out the industries that benefit from the direct, indirect and induce job generation generated by Google data centres. It is evident that the indirect and induced employment profile are more diverse than the direct job creation, demonstrating the extensive reach data centres have across the economy.

Figure 1 Google Data Centre Employment Impact – No. of Jobs



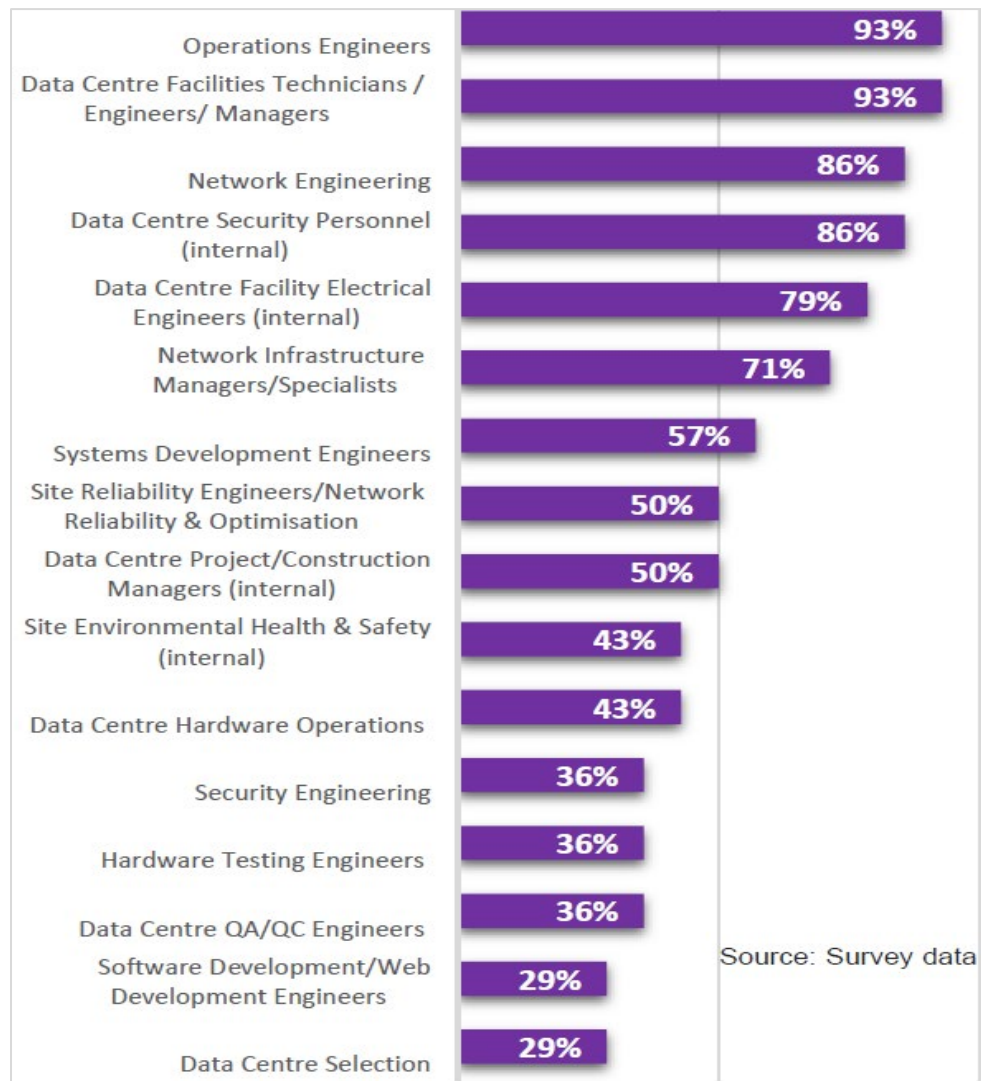
Source: Google Data Centres Economic Impact and Community Benefit Report (2018)

¹⁵ Google Data Centres Economic Impact and Community Benefit Report (2018)

- 2.26 According to the report A Study of the Economic Benefits of Data Centre Investment in Ireland¹⁶ (May 2018), the roles created as a result of data centre development are typically high-skilled, well-remunerated roles that require significant training and educational and professional qualifications. Section 1 of this report has demonstrated that the local area and Slough have a high proportion of residents who have achieved a level 3 and 4 qualification.
- 2.27 The Study¹⁷ also notes that data centres help elevate the level of advanced STEM (Science, Technology, Engineering and Maths) skills. These measures result in knowledge uplifts, as students attain a higher level of skills and knowledge in these areas. It also enhances the knowledge base of the economy through the impact on the types and uptake of courses offered at educational institutions. Section 2 highlights that the 2018 Industrial Strategy specifically highlights aspirations to align higher education more closely with the needs of the future economy and increase investment in and attainment of STEM (science, maths, engineering and maths) skills.
- 2.28 The Study refers to these higher-skilled roles requiring tertiary level education and professional qualifications. Data centres train and employ highly skilled individuals in their operations. Data Centres also train their staff to provide them with the skills and know-how needed to undertake their advanced technical roles.
- 2.29 Primary data collection undertaken by the Study of the Economic Benefits of Data Centre Investment in Ireland illustrates the demand for advanced software engineering and networking skills amongst Data centre roles. Other roles employed by data centres include efficiency experts, IT process staff, and service staff. Figure 2 sets out the percentage of survey Data Centre respondents who have staff carrying out these functions.

¹⁶ A Study of the Economic Benefits of Data Centre Investment in Ireland¹⁶ (May 2018)

¹⁷ A Study of the Economic Benefits of Data Centre Investment in Ireland¹⁷ (May 2018),

Figure 2: Data Centre Job Roles

Source: A Study of the Economic Benefits of Data Centre Investment in Ireland (May 2018)

3.0 DATA CENTRES AND ECONOMIC POLICY

- 3.1 A data centre at Link Park would deliver high skilled, innovative and productive employment choices on-site, whilst creating an extensive supply chain. This would contribute to meeting UK Industrial Strategy objectives and promote the UK as a centre for data driven information.
- 3.2 The Buckinghamshire Local Industrial Strategy, published in 2019, will deliver the aims of the UK Industrial Strategy; boosting productivity by backing businesses to create high quality, well-paid jobs through investment in skills, industries and infrastructure. The catalyst is the nationally significant, data heavy and digital infrastructure reliant economic assets of Buckinghamshire:
- i. Westcott Space Propulsion Cluster.
 - ii. Pinewood Studios and the National Film and Television School Creative Cluster.
 - iii. Silverstone Park and Technology Cluster; and
 - iv. Digital health, med-tech, and artificial intelligence (AI) with a Stoke Mandeville Cluster.
- 3.3 Buckinghamshire intends to deliver this change by transforming economic drivers and the business ecosystem to drive productivity through:
- i. A skills and inspiration revolution;
 - ii. Transformative investment in digital infrastructure;
 - iii. Development of enhanced and long-term R&D collaborations as part of a Living Lab;
 - iv. Advancement of commercial innovation; and
 - v. Boosting business scaleup and efficiency
- 3.4 The UK Strategy and the Buckinghamshire Local Industrial Strategy support for a data driven economy is explained in more detail below.

UK Industrial Strategy

- 3.5 The Industrial Strategy 'Building a Britain fit for the future' was published in November 2017 and places a strong emphasis on improving national productivity. Higher productivity is said to be founded upon creating 'better' jobs that add greater value to the economy as a whole and which are by their nature higher skilled, better paid and more resilient.
- 3.6 The benefit to society is improved living standards. Rather than an employment generating strategy, the Industrial strategy is one that acknowledges and celebrates the current national context of historically high employment but recognises the problem of the parallel story of low wage growth and low household incomes.
- 3.7 The Strategy rests upon five foundations of productivity:
- a) **Ideas:** to be the world's most innovative economy, the government will increase investment in R&D and increase R&D tax credits, stimulate greater private sector investment in R&D, and foster partnerships between innovators (universities and research organisations) and industry; creating high skilled, high value, well paid jobs throughout the UK. To this end, through an Industrial Strategy Challenge Fund, £725m will be invested across four Grand Challenges of i) artificial intelligence and data driven technology (including helping service industries to identify how they can be applied to transform operations); ii) clean growth (including transforming food production, to make it more efficient and sustainable); iii) adapting to an ageing society, and; iv) future mobility.
 - b) **People:** to generate good jobs and greater earning power for all, government commits to establishing a world class technical education system creating 15 new industry backed education routes (T Levels) to employment, digital being one of the first. To aligning higher education more closely with the needs of the future economy, increase investment in and attainment of STEM (science, maths, engineering and maths) skills, post 16, responding to demand, the study of maths being a particular focus, as is digital skills. Create a National Retraining Scheme to support people to re-skill, initially in digital and construction training.
 - c) **Infrastructure:** a major upgrade to the UK's infrastructure, to support long term productivity, government commits to increasing the National Productivity Investment Fund (transport, housing and digital infrastructure) to support the delivery high quality infrastructure; efficient transport systems, 5G and full fibre networks; supporting the Grand Challenges.

- d) **Business Environment:** to be the best place to start and grow a business, the government will add to the funds available through the British Business Bank and other channels to boost investment in high growth, innovative businesses; continue funding and other support for local Growth Hubs (business advice and state up loans), improve support to access export markets, and; continue to simplify regulation. In addition, this foundation commits to strengthening partnerships with industry, encouraging specific sectors to come together under clear leadership and make a case to negotiate a sector deal with government. Sector deals will include artificial intelligence and manufacturing, specifically industrial digitalisation, embracing AI and data - the fourth industrial revolution.
- e) **Places:** to have prosperous communities across the UK, is concerned with driving productivity in all parts of the country, recognising that different approaches and policies will be needed for different places. To ensure that effective local strategies are developed (covering ideas, skills, infrastructure and business environment), the Industrial Strategy introduces Local Industrial Strategies and commits to strengthening local leadership through LEPs and MCAs. Through this architecture of local productivity growth, funds such as the aforementioned Transforming Cities Fund (infrastructure) will be distributed. The government intends to agree the first Local Industrial Strategies by March 2019. Priority will be given to areas 'with the potential to drive wider regional growth, focusing on clusters of expertise and centres of economic activity'.

- 3.8 The Strategy states that one of its key challenges will be to **'put the UK at the forefront of data revolution and development of the data economy. A data-driven economy is defined as 'a digitally connected economy that realises significant value from connected, large-scale data that can be rapidly analysed by technology to generate insights and innovation. The strategy aims to make the UK a global centre for data driven information.**

Buckinghamshire Local Industrial Strategy

- 3.9 The Buckinghamshire Local Industrial Strategy (LIS) was published in July 2019. It sets out how Buckinghamshire will deliver the national Industrial Strategy and is one of four linked Local Industrial Strategies covering the Oxford-Cambridge Arc.
- 3.10 For Buckinghamshire, the starting point is an economy ranked fourth most productive in England and the highest employment rate in the Arc. The four economic assets that will drive further growth are all heavy data users:

- a) **The Westcott space cluster:** significant investment from government, Buckinghamshire LEP, and the private sector has nurtured local expertise in the space cluster. This is signified by the UK Space Agency's recent decision to invest £4.12m into Westcott Venture Park to develop the National Space Propulsion Test Facility. The LIS sets out how partners will take the cluster to the next level, by working with businesses to address skills shortages for technicians and propulsion test specialists and developing a long-term investment plan for Westcott to develop new R&D infrastructure and an established base for manufacturing excellence in the fields of space propulsion and in-orbit maintenance, based on working across value chains.
- b) **Pinewood Studios and the National Film and Television School at the heart of a creative industries cluster:** home to Pinewood Studios, the National Film and Television School and the International eGames Committee, Buckinghamshire stands out in the creative media and entertainment sector. As this creative cluster evolves, Buckinghamshire aims to be at the forefront of future changes in the way in which creative content is developed and consumed. Working with the creative industries network, Buckinghamshire LEP will take action to work with government to consolidate a global industries capability furthering export capacity and inward investment in the sector, aiming to secure investment in and access to key research facilities and programmes.
- c) **Silverstone Park and technology cluster:** Buckinghamshire's Silverstone Technology Cluster is a significant part of the Arc's high technology capability, and there exists major opportunity to stimulate potential high technology crossovers between, and across, sectors. To stimulate growth, Buckinghamshire LEP and the Silverstone Technology Cluster aim to focus business investment and financial incentives on SME innovation, and attract interest from the finance community, large corporates and overseas investors. Action will also be taken to support emerging technologies through improving links between firms and the knowledge base, developing the ecosystem to improve connectivity between businesses and universities, and improving networking across the Arc's 'super-cluster'.
- d) **Digital health, med-tech and advanced artificial intelligence:** Buckinghamshire benefits from significant assets in the digital health sector, including the Buckinghamshire Life Sciences Innovation Centre, Stoke Mandeville (the UK's national spinal centre) and global industry leaders such as GE Healthcare and Johnson and Johnson with well-established research bases within the area.

3.11 Underpinning these four economic assets are the five foundations of productivity set out in the national Industrial Strategy. Buckinghamshire's contribution will be as follows:

- a) **Ideas:** In support of the government's target of 2.4 per cent of gross domestic product (GDP) going into R&D by 2027, **Buckinghamshire will bolster knowledge transfer** between its four major economic assets, its thriving network of micro, small, and medium sized enterprises and world-leading research institutes and businesses across the Arc.
- b) **People:** Buckinghamshire population is highly educated and benefits from several significant technical education institutions. However, there are gaps and the LEP is alive to the importance of ensuring that all residents are equipped with the skills to compete in a high value and productive economy – and that the skills needs of employers are met. To that end, the Skills Advisory Panel and Sector Skills Groups will connect businesses with skills providers and people with **targeted support including apprenticeships, STEM skills, T levels, technical and degree apprenticeships.**
- c) **Infrastructure:** Buckinghamshire is at the heart of significant infrastructure investment, with major planned transport projects and housing growth. However, **Buckinghamshire's digital infrastructure lags behind its neighbours in coverage and quality of provision. The area's strong data-orientated sectors, computer consultancy businesses and creative-digital media sectors all need a robust digital spine in order to grow.** To that end, Buckinghamshire will establish a **Productive Places Programme** purposed to:
 - i. Address digital connectivity bottlenecks, map digital coverage and through a Digital Investment Strategy prioritise future investment in R&D hotspots.
 - ii. Support business with high value potential.
 - iii. Enhance and develop new economic relationships.

4.0 LINK PARK DATA CENTRE ECONOMIC BENEFITS

- 4.1 The preceding sections of this report have highlighted the importance of data centres to our economy and why they have such high intrinsic value. They are the physical manifestation of our digital economy: we cannot lead connected lives without data centres.¹⁸
- 4.2 It is not surprising that they are key to realising national economic policy that seeks to put the UK at the forefront of data revolution and development of the data economy and make the UK a global centre for data driven information. Essential to boosting productivity by creating high value jobs that increase earning power.
- 4.3 A newly built data centre is reckoned to add to between £397m and £436m gross value added (GVA) per annum¹⁹. The mid-point of £417m is used here as the UK wide GVA per annum impact of a newly build data centre, a value that could support thousands of jobs across the UK economy.
- 4.4 To understand the distribution of that impact and what it means in employment terms, the following assumptions have been used.
- a) A new build data centre of the type envisaged at Link Park would support **90 jobs on site**²⁰
 - b) Data centre jobs **directly contribute £134,800²¹ GVA per annum**, a per job value that reflects the highly skilled workers required operate the data centre.
 - c) The **main impact of data centres is indirect**, providing vital IT services that enable other businesses to operate with greater efficiency and achieving higher productivity than would otherwise be the case. Because the datacentre is a data economy asset, we calculate indirect employment using **£63,900 GVA per job, the GVA per job realised by the data economy²²**.
 - d) The **distribution of the indirect impact is informed by the size of the local data economy**, derived using regional analysis that reports the proportion of each business sector that operates within the data economy²³. This regional analysis provides a basis for modelling the data economy in Buckinghamshire, using ONS jobs and GVA data.²⁴

¹⁸ Emma Fryer, TechUK, 20 March 2020

¹⁹ According to the Data Economy Report, 2018

²⁰ In line with the Facebook and Google case study evidence (see Section 2 of this report) and experience in Slough

²¹ Based on data and analysis published in the Data Economy Report, 2018

²² Based on data and analysis published in the Data Economy Report, 2018

²³ According to the Data Economy Report 2018

²⁴ Business Register and Employment Survey and Regional Gross Value Added (balanced) by Industry: all NUTS level regions, 2020

This is moderated by reference to the local share of the digital sector using the DCMS²⁵ sector definition. The local share of UK's data economy and digital economy is used to distribute indirect employment.

- 4.5 The final measure of impact is the strategic added value of a data centre. This refers to the local growth potential of the data economy, based on published national and regional growth scenarios²⁶. Here, strategic added value quantifies the scale of the economic opportunity that data centres will help to unlock.

Economic impact distribution

- 4.6 A newly built data centre at Link Park represents an investment of £100m in Buckinghamshire in construction and fit out, supporting in the region of 90 workers during the construction and fit out phases.
- 4.7 **90 jobs to maintain and operate the Link Park data centre over its lifespan will add £12.1 m GVA per annum to the local economy.**
- 4.8 Of the £417m GVA per annum created by the data centre, if £12.1m relates to direct data centre maintenance and operations, **the remaining £404m GVA per annum created by the data centre would support 6,300 indirect jobs across the UK data economy.**
- 4.9 In 2018, the latest year for which actual GVA and jobs data is available, we estimate that 52% of the value of the data economy resides in London and the South East²⁷.
- 4.10 It is reasonable to assume that a data centre in Link Park would predominantly (e.g. 80%) benefit the data economy in London and the South East, in which case, the indirect benefit would amount to £323m GVA per annum supporting 5,000 jobs.
- 4.11 We estimate that in 2018, Buckinghamshire accounts for 2.5% of all data economy jobs across London and the South East and 2% of the GVA. **On that basis, a data centre at Link Park would indirectly support in the region of 130 jobs in the local data economy.**
- 4.12 If the benefit of a data centre at Link Park was distributed on the basis of our estimate of Buckinghamshire's share of the UK data economy (0.9% of GVA and 1.0% of the jobs, the indirect benefit would be 65 jobs to the local economy.

²⁵ DCMS Sectors Economic Estimates, 2020

²⁶ According to the Data Economy Report, 2018

²⁷ Data for 2016 published in the Data Economy Report, 2018; uprated to 2018 estimates using Oxford Economics Local Forecasting Model.

Digital Sector sense check

- 4.13 Our assessment of the economic benefit, to Buckinghamshire, of a new data centre relies heavily on modelling the size of the data economy there, based on national and regional estimates available at broad sector level.
- 4.14 As a sense check, we have used the DCMS digital sector definition²⁸ to estimate digital sector employment in Buckinghamshire and compare it to the digital sector across London and South East and the UK. The advantage of this approach is that the digital sector is a key driver of the data economy and the sector definition is more fine grain (sub sector), therefore more readily identifiable, than the local data economy.
- 4.15 We find that the digital sector is more valuable than the data economy and in that respect is more reflective of the value of data centres. In 2018 the digital sector was estimated by DCMS to be worth £146bn, employing 1.5m workers; GVA per annum of £97,000²⁹.
- 4.16 According to DCMS, London and the South East accounted for 57% of UK digital sector GVA and 48% of employment, a greater concentration than for the data economy. The digital sector in London and the South East is especially valuable. GVA in 2018 of £83bn generated by a workforce of 720,000 gives rise to GVA per annum of £115,000 (more than double average GVA per annum across all sectors)³⁰.
- 4.17 To estimate the digital sector in Buckinghamshire we have used the DCMS digital sector footprint, comprising 36 economic activities (including data processing, hosting and related activities), to extract a digital sector employment estimate.
- 4.18 In line with (but greater than) our estimate for the data economy, we find that Buckinghamshire accounts for 2.5% of the digital sector across London and the South East and 1.2% across the UK (compared with 2% and 1% respectively of the data economy), suggesting our apportionment of data centre economic benefits to Buckinghamshire is conservative.

Strategic Added Value

- 4.19 In Section 3 of this report we noted the fact that the data economy sits at the heart of national and regional plans to boost productivity and increase earnings. Further, in Section 2 of this report, we explain that data centres are fundamental to data economy growth and explore their intrinsic value to a modern economy. As enablers of growth, data centres confer strategic

²⁸ DCMS Sector Economic Estimate Methodology, September 2019

²⁹ DCMS Sectors, various tables (digital sector GVA and employment) published March 2020

³⁰ DCMS Sectors, various tables (digital sector GVA and employment) published March 2020

added value, because they are essential infrastructure for growth and have been likened to railways in the 19th century.

- 4.20 To put the strategic added value of data centres in context, they should be understood as key to closing the gap in UK data economy performance, calculated to running at 58% of its full current potential and capable of growing by £21bn to 28bn in 2025. Reaching the higher figure depends on increasing the current rate of investment, both capital and skills. Apportioned to Buckinghamshire, in line with the approach taken to benefits, this growth potential amounts to GVA per annum increasing by £110m to £260m per annum and data economy jobs increasing by 2,200 to 5,000. A data centre at Link Park will help realise this potential.

Business Rates

- 4.21 To arrive at an estimate of business rates, we have taken Equinix on Slough Trading Estate (8 Buckingham Avenue c.31k sq. m in total, rateable value of £3.85m) to be a comparable development.
- 4.22 On the assumption that the proposed development is in proportion with Equinix (the share of the floor area that is given over to offices, servers, plant etc.), then 55,000 sq. m at Link Park would have a rateable value of £6.8m and the business rates would be £3.4m per annum.