Digital Industries
(including Artificial Intelligence and Data)

As the Prime Minister wrote in her foreword to the Tech Nation 2018 Report: 'The digital tech sector makes an essential contribution to local economies in our towns and cities. Clusters built around AI, machine learning, cyber security and big data industries are supporting growth, jobs and productivity in communities large and small.'

The Digital Sector contributed £130.5bn to the UK economy in 2017, accounting for 7.1% of UK GVA.[35] The contribution from this sector has increased by a third since 2010 (£98.2bn in 2010). Between 2014 and 2017, employment in the digital tech sector increased by 16.1%.[36] The GVA in the UK Cyber Security Sector is estimated to contribute around £2.3bn in 2015/16.[37]

At a local level, digital and cyber security firms are forming more and more business clusters inside and outside the major cities, which are motors for local economic growth and higher productivity.[38]

Developing a Baseline

The Tech Nation 2018 Report can provide you with an initial understanding of the size of the tech sector within local areas, with information on sector density, growth stage, location of high growth firms and sector productivity. It also provides detailed insights into the growth of individual tech clusters, which should provide valuable information on turnover, contribution to local GVA and important firms.

The UK Cyber Sectoral Analysis Report gives an overview of the clusters of cyber security firms throughout the UK. Both reports show that digital and cyber security companies cluster within certain parts of the country, with firms being concentrated within London and the South East, but with clusters developing across the country, with firms not only growing in big cities but smaller cities, towns and suburbs as well.

DCMS encourages you to consider the extent that businesses within your local area outside of the digital sector have adopted digital technologies. The Lloyds UK Business Digital Index provides regional assessments of the digital capability of businesses and civil society organisations that can be used to assess some of the barriers to digital take up among SMEs within local areas and benchmark against the national average.

This take-up is also tied in with levels of digital skills within local areas. See the Digital Skills section below for more guidance.

Many local areas are starting to see the benefits of sharing data across public sector agencies and where possible making that data available as open data. Doing this proactively, and encouraging other local partners to do this, would give a richer supply of data to encourage AI solutions to support local needs.

The box overleaf provides more detail for LEPs seeking to support the Artificial Intelligence and Data sectors, which represent one of the government's Grand Challenges in the national Industrial Strategy.

35 DCMS (2017) Economic Estimates: GVA

36 DCMS Economic Estimates - Employment 2017

37 UK Cyber Security Sectoral Analysis and Deep-Dive Review 2018

38 Tech Nation UK (2018), Tech Nation Report

The AI and Data Grand Challenge

Looking at AI and Data in particular, the following questions can help when considering the contribution that can be made locally to the Grand Challenge:

Current situation

- What is the current extent of adoption of AI technologies among local businesses?
- What is the current level of awareness of AI in your local area?
- What is the composition of the local workforce and how might an increased use of AI impact or be impacted by this composition?
- What is the value of collaborative R&D in AI and data analytic technologies among local industry and research partners?
- What is the current extent of adoption of AI technologies by the public sector locally?

Opportunities

Supply

- Is there an AI ecosystem in your area; are there active AI companies, research institutions, investors or AI hubs?
- If so, what are their specialities and particular needs/challenges?
- What is the AI/STEM skills base in your local area, and how available is AI expertise to local businesses?
- What training opportunities can businesses and individuals access to improve competency and expertise in AI?
- What types of local datasets, private or public, have been, or could be, made available for wider use in your area?
- How diverse is your AI skills base?
- What opportunities are there to create local data trusts and explore other models of data governance to facilitate easy and secure sharing of data?

Demand

- What is the sectoral make-up of your local area and in which are there opportunities for AI adoption?
- What is the level of demand for AI/data expertise from local businesses?
- Which local public services are most in demand and/or least digitised?
- Which local products/processes could be made more efficient through better use of data?
- Is there demand for public datasets that are currently held by local government?
- What linkages exist between industry and academia for collaborative R&D in AI and data analytic technologies?

Agreeing Objectives

The UK Digital Strategy (2017) sets out our plans to develop the digital economy across all parts of the UK. Government's ambition to support all businesses to digitise, grow tech jobs and unlock the power of data are complemented by a commitment to build the skills and infrastructure which people and businesses need.

Local leaders know that investment in the business environment is needed to maximise the local benefits of technologies. The UK is an international leader in the development of a range of the tech of tomorrow; including AI and data, robotics, quantum and autonomous vehicles. In 2017, our tech business sector grew 2.6 times faster than the economy as a whole, increasing by 4.5%.[39]

The Digital Strategy and the national Industrial Strategy can only be delivered in places. Our National Cyber Security Strategy sets out objectives for growing clusters based around interdependent strengths which are applicable to local conditions. Together in partnership with local leadership, businesses and citizens, government is committed to working towards the following outcomes to be achieved through investment in our digital business environment:

- More businesses accessing appropriate external support, and being satisfied that they have access to specialists who understand digital enterprise.
- More businesses understanding the challenges they face arising from technological development, and the opportunities to grow and thrive through digital adoption of productivity-enhancing technologies.
- Increased entrepreneurial activity, including number of startups, and higher firm-level GVA.
- Increased finance for businesses applying digital technology generating higher demand for external finance from diverse sources.

Designing interventions

There may be existing programmes within your local area that are stimulating growth within the local digital and cyber security sectors, investing in and supporting companies at every stage of development. Tech Nation provides a number of Growth Programmes that can help businesses to grow, and you can help promote these growth programmes to companies in your areas. The National Cyber Security Centre Cyber Accelerator and London Office for Rapid Cyber Advancement are designed to help cyber security startups and bring innovative new cyber security solutions to market, while Cyber 101 coaches cyber security leaders in critical business skills.

Evaluation and monitoring

Evaluation should distinguish between the direct impacts of the programmes you are implementing and the secondary impacts to the overall economy. Where interventions focus mainly on supporting individual businesses, we recommend monitoring the individual performance of these businesses. However, you should also consider assessing (and monetising) the wider impacts that supporting these firms has on the wider local economy.

The Tech City UK Impact Evaluation can be a guide to help with monitoring the impact of programmes intended to improve growth of digital companies. This evaluation showed the particular difficulties in directly attributing effects on 'hard performance measures' (such as sales turnover and employment) to the activities of the programme, which should be borne in mind when designing an evaluation.

39 Tech Nation Report (2018)