

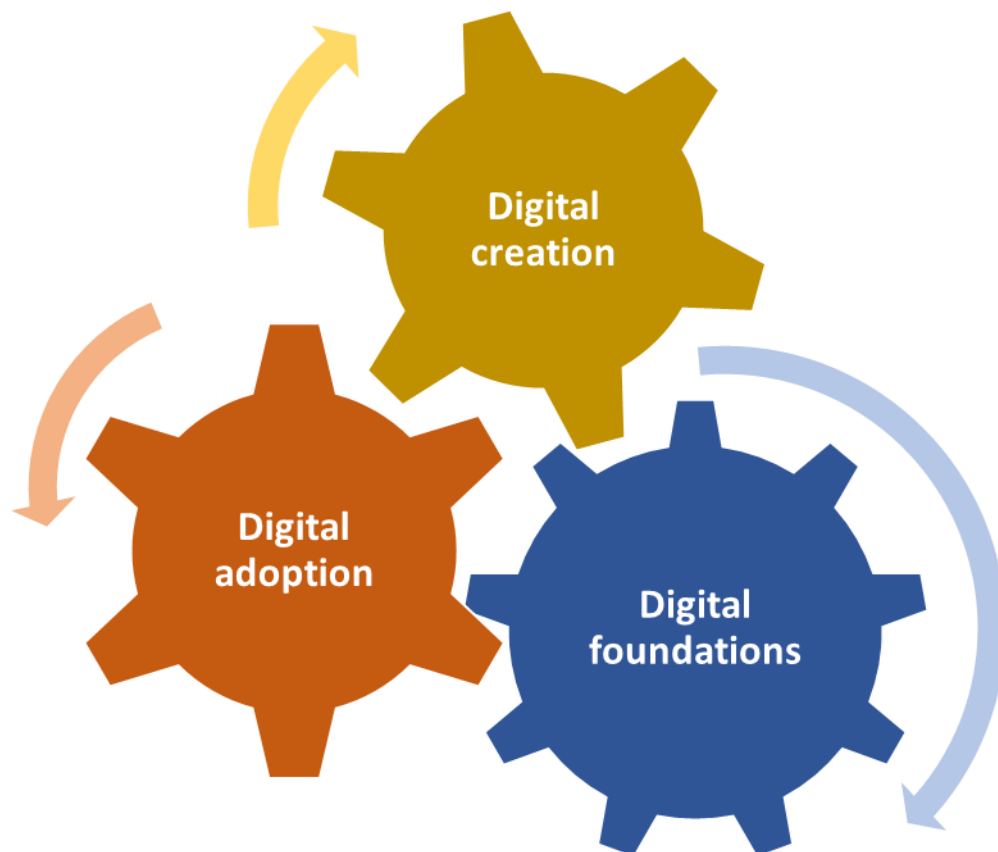
Swindon and Wiltshire Digital Capabilities Strategy

Draft Strategy

September 2018

FINAL DRAFT

FOR CONSIDERATION BY SWLEP



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Introduction

Welcome

Welcome to Swindon and Wiltshire's Digital Capabilities Strategy. This strategy has been prepared at a time of rapid technological change, leading to the rise of completely new products and services and changing the way in which all sectors operate. So, ensuring that the area has the right 'capabilities' to take advantage of the opportunities presented by advanced digital technology will be central to Swindon and Wiltshire's industrial strategy over the next few years.

Based on evidence, this strategy seeks to support:

"a growing, resilient and competitive economy, which is at the leading edge of digital technology"

It is built around three key themes:

- **Digital creation:** enabling the growth of those businesses at the 'leading edge' of digital innovation
- **Digital adoption:** ensuring that across the economy, businesses remain ahead of the curve in using digital technology to stay competitive and resilient
- **Digital foundations:** making sure that our future success is underpinned by the right infrastructure and the right skills as technology advances

Across these key themes, this strategy sets out a series of actions that Swindon and Wiltshire LEP – bringing together business, education and local authority partners, and working closely with Government – will take over the next five years. The future is hard to predict, and technology is disruptive. But together, we can help to create the conditions for disruption to be a positive force for

Swindon and Wiltshire's businesses and residents, and for the UK as a whole.

What we mean by 'digital capabilities'...

In developing this strategy, we have defined 'digital capabilities' as *"those factors that (ideally) work together to promote technology-driven productivity growth"*. These include:

- the composition of the **business base**: the combination of large and small firms, different sectors and the extent to which they will be impacted by digital technology
- the local **skills supply and demand** picture, particularly at advanced technical level, and relating both to the current and future workforce
- the nature of the **support infrastructure** that exists to facilitate business growth and development
- the role of the **public sector** in driving demand for new technologies and using those technologies to shape the provision of public services
- the **'hard' digital infrastructure** that contributes to growth, including existing and planned broadband provision

All these factors are interconnected and need to be considered together.

... and the 'digital economy'

All businesses use digital technology. The acquisition, storage and use of vast amounts of data is leading to new processes and products in all sectors. It is therefore increasingly difficult to define a 'digital sector', although as an (imperfect) proxy, we have used a definition developed by Tech Nation, built up from

standard sector classifications, and we refer to this below¹.

Within our analysis and strategy, we have drawn a broad distinction between those firms that generate most of their value from the development of products and services that are reliant on the exploitation of new digital technologies, and those within the wider economy that will be impacted by digital technology.

¹This definition is imperfect, as many businesses using advanced digital technologies will have SIC codes that are not included within the Tech Nation definition (e.g. some fintech companies may be counted as financial services

firms, rather than within the 'digital' definition. However, the definition is useful to give us an idea of approximate scale and to compare Swindon and Wiltshire with other parts of the country.

Why it matters – and where we are heading

The policy context

The potential benefits that local economies can gain through digital innovation have been widely publicised.

According to the most recent *Tech Nation* report, the growth rate of ‘digital jobs’ was more than double that of non-digital jobs between 2011 and 2015, and the GVA of a digital worker was more than twice that of a non-digital worker. The UK’s relative strengths are also widely quoted: in the five years to 2016, Britain’s digital sector attracted £28 billion in venture capital and private equity investment, more than double the amount attracted to the sector in any other European country.

This understanding has made the development of the ‘digital economy’ a national priority for the Government. In particular:

- the **Industrial Strategy White Paper** published in November 2017 sets out four ‘grand challenges’ to “put the UK at the forefront of the industries of the future”, all of which have innovation in digital technologies at their heart
- the **UK Digital Strategy** contains an ambition to “*make the UK the best place to grow and start a digital business*”, highlighting UK strengths in artificial intelligence, cyber security, gaming, fintech and virtual reality; while also aiming to “*help every British business become a digital business*”
- the **Made Smarter review**, which focuses on industrial digitalisation (particularly in manufacturing) highlights the *potential* of the UK to

become a world leader in the ‘fourth industrial revolution’, but identifies significant constraints that hold it back, including poor levels of SME adoption and fragmented support

Within this context, Swindon and Wiltshire’s **Strategic Economic Plan** identifies digital capability as a key priority, highlighting that “*we need to deliver excellence in digital connectivity and cyber transformation to achieve business growth, innovative public services and influence societal change*”, forming the basis for this strategy and the future development of a local industrial strategy.

Technology trends

A look back over the past decade gives us an indication of how rapidly technology has developed. In 2008, for example, Facebook had around 100 million users (compared with over 2 billion today), and the first iPhone was released in 2007. Looking to the future, five major trends are likely to be important over the next few years:

1. **The expansion of artificial intelligence**, its impact on a much wider and more sophisticated range of customer interactions and the ability of machine learning to replace a wide range of tasks and decisions that are currently carried out manually
2. **The continued development of digital platforms** and the relationship between providers of goods and services and the providers of their routes to customers. This could mean a changed relationship between producers of physical goods and suppliers of services as – for example – rental models are made more viable by new technology
3. **The use of data to affect behaviour change**, for example in monitoring customer feedback and gaining a

better understanding of how people use or respond to particular products and services

4. **Changes in the nature of the workplace**, as online work management and the development of 'on demand' labour platforms disrupt conventional employment structures. Potentially, this could accelerate the trend towards businesses with smaller cores, drawing on larger pools of flexible and freelance talent
5. **The development of new standards and business models**. Regulatory standards frequently lag behind the development of new products and services (witness the current controversies around Facebook and Uber). As technology moves forward, so will the standards that influence new business models

These trends will influence economies everywhere, although the advent of *specific* products and services is more difficult to predict. How Swindon and Wiltshire takes advantage of them will depend on its digital capabilities.

Looking back and looking forward... headlines on the pace of change

12 years ago in 2006, the technology landscape was very different. For most consumers, broadband speeds of 8 Mbps were regarded as 'lightning fast'; most bank transactions were still done by phone or in branch; music was purchased in 'solid' form; and online retail was still limited to certain sectors (with Amazon – for example – still primarily a bookseller).

So what might the world look like in 12 years' time, in 2030? From a consumer perspective, we might envisage:

- ubiquitous seamless coverage for mobile devices
- massively high-speed broadband, able (for example) to download a feature film in a few seconds
- widespread use of virtual reality in product design and development
- transformation in the way that we interact with devices, as voice and gesture recognition reduce the need for keyboards and light field displays project 4D images directly onto your retina
- widespread availability of 3D printers with libraries of objects that can be downloaded and printed
- ubiquitous smart home technology, with users able to monitor and control their homes remotely

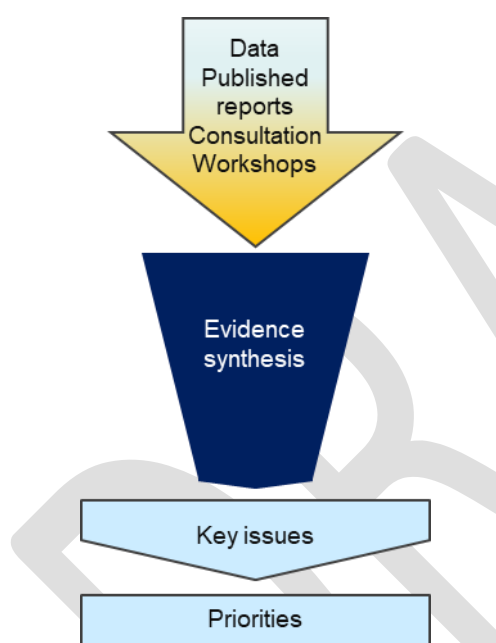
Like the technology advances in the past twelve years, these changes will not just provide faster and more convenient ways of doing things – they will create new business opportunities, make some existing business models obsolete and drive organisational change. As new technologies become available, they will also generate increasing demand for the infrastructure needed to support them

Swindon and Wiltshire's digital economy

Assembling the evidence

In preparing this strategy, we have drawn on a wide range of evidence. As illustrated below, this includes analysis of data and published reports, as well as a series of workshops and interviews with businesses and other stakeholders.

Figure 1: From evidence to priorities



A full evidence base accompanies this strategy. Drawing on this, the paragraphs below highlight the key features of Swindon and Wiltshire's digital economy, and the opportunities and challenges that it faces.

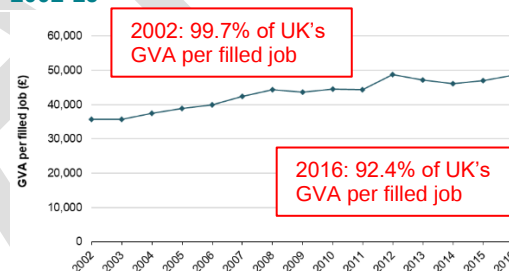
The big picture: Swindon and Wiltshire in the wider context

A buoyant and growing economy – but with challenges in relative terms...

Swindon and Wiltshire had an economy worth around £17.8 billion in 2016. GVA per head – at around £24,600 – was slightly below the UK average (£25,600):

Labour productivity (measured as GVA per filled job) was £48,315 in 2016, around 92% of that of the UK as a whole. Given the extent to which productivity data are skewed by London, this is a good performance – but as Fig. 2 shows, the area's *relative* performance has deteriorated somewhat. This highlights the need to avoid complacency. The effective exploitation of digital technology will be vital in driving future productivity growth.

Figure 2: Productivity: GVA per filled job (£), 2002-16



Source: ONS (nominal unsmoothed data)

Looking to the future, recent forecasts by Cambridge Econometrics and Oxford Economics each anticipate average productivity growth of around 1.6% per annum between 2016 and 2030 (higher than the historic 1.1% annual growth in 2000-13²).

... a diverse geography...

Swindon and Wiltshire is diverse in terms of its spatial form and settlement structure. At the time of the last census,

² Hardisty Jones Associates for Swindon Borough Council and Wiltshire Council (2016), *Swindon and Wiltshire Functional Economic Area Assessment*, p.29

Swindon had an urban population (on a “built up area” definition) of about 185,000 people – bigger than both Cambridge and Oxford, and slightly smaller than Milton Keynes. Whilst Swindon lacks the scale of a large city, it is a significant “larger town” within a swathe of southern England that is growing quickly.

Swindon is about four-times larger than the next biggest town in the LEP area, and elsewhere, the settlement structure is very different. Salisbury, Trowbridge and Chippenham each have a population of between 30,000 and 45,000 people, with all three within identified ‘growth zones’. Thereafter, there is a larger group of smaller market towns and a very substantial – and thinly populated – rural area, including much of Salisbury Plain. This spatial distribution is important in influencing digital infrastructure provision and the distribution of the business stock.

... at the centre of a wider region with a substantial digital technologies asset base

While diverse, Swindon and Wiltshire also occupies an important position at the intersection of the M4 and Cambridge – Milton Keynes – Oxford corridors. The universities and ‘tech clusters’ at Bristol, Bath, Oxfordshire and Reading are in close proximity and London is not far away; in the course of developing this strategy, several business consultees highlighted the importance of easy access to markets as a key location factor. Planned transport infrastructure improvements (such as on the Great Western Main Line) will add to this, and while businesses referred to the challenge faced by the area of being in the ‘shadow’ of higher-profile locations in the West of England and the Thames Valley, there should be potential to build on this proximity.

Digital infrastructure

Broadband infrastructure is good and improving...

Ofcom data show that Swindon and Wiltshire has good broadband infrastructure. **Almost 90% of premises have access to broadband of at least 30 Mbps** following the successful rollout of the BDUK-funded Superfast Swindon and Wiltshire Online programmes. There are still some gaps in rural provision which need to be tackled, and businesses reported local connectivity challenges (including in some urban locations), but superfast broadband availability is good, particularly given the area’s dispersed settlement structure.

Around 70% of premises in Swindon also benefit from access to ultrafast broadband of 300 Mbps or greater, partly driven by the rollout of the Gfast network. While behind the almost universal rollout of ultrafast in Bournemouth, availability in Swindon is favourable compared with neighbours such as Bristol and Cheltenham.

Ofcom statistics also show high levels of data use in Swindon and (to a lesser extent) Wiltshire relative to comparator locations), suggesting that the strong *supply* of infrastructure is accompanied by relatively strong demand.

... and mobile coverage

Mobile coverage in Swindon and Wiltshire similar to comparator locations. There are some gaps in 2G and 4G availability, mostly on the Salisbury Plain and in the south of Wiltshire (accounting for about 4% of Wiltshire’s land area for 4G). But overall, 90% of Swindon’s and 67% of Wiltshire’s land area has 4G mobile coverage by all four mobile network operators.

Digital business

The 'core digital' sector is small, but growing...

There were around 12,000 people employed in the 'digital sector' in Swindon and Wiltshire in 2016, accounting for around 3.7% of all employment.

Compared with the rest of the country, the digital sector is of broadly average size in employment terms, although relatively modest compared with some of Swindon and Wiltshire's neighbours (especially Berkshire and the Enterprise M3 area).

Turning to the business base, **there were around 2,500 digital sector enterprises in Swindon and Wiltshire in 2017.** Growth in the digital business stock has been reasonably strong in recent years: between 2010 and 2017, the number of digital businesses increased by around 35% (or 655 enterprises) – broadly in line with the increase in the number of enterprises in the economy as a whole.

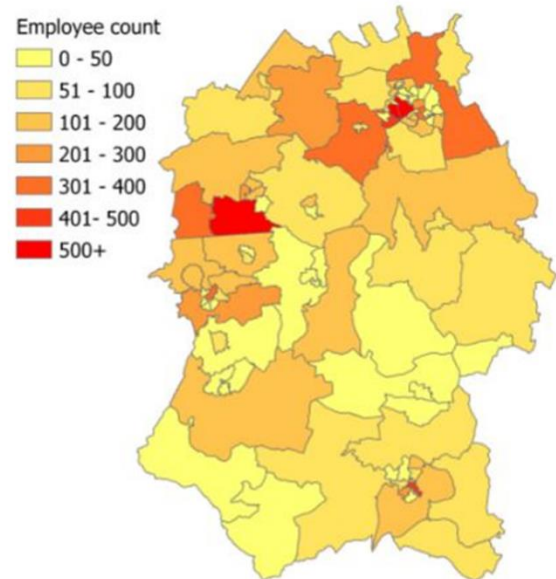
... with a business stock dominated by micro enterprises

Some 96% of all businesses in the digital sector employ fewer than 10 people - a higher proportion than in the economy as a whole. This reflects the fact that the sector is relatively young, but it also illustrates its structure, with widespread freelancing as conventional models of employment evolve.

Diverse and widely distributed, although with some key areas of concentration and specialisation

Looking in more detail, Figure 3 highlights the key concentrations of digital employment in Swindon and Wiltshire. Unsurprisingly, the largest concentrations tend to be in the main urban areas to the north and west, particularly around Corsham and the greater Swindon area.

Figure 3: Digital sector employment (2016)



Source: ONS, BRES
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Looking at specific firms and areas of activity, key capabilities include:

- **Data centre activity**, associated with the ARK data centre campus at Spring Park (opposite the MoD campus at Corsham). As well as hosting major corporates, such as BT and Vodafone, the data centre campus is also an important facility for Swindon and Wiltshire-based firms, such as the Chippenham-based IT service provider, Vysiion.
- **Cyber security and resilience**, building on Swindon and Wiltshire's strong defence heritage. MoD Corsham is home to the Ministry of Defence Global Operations Security Control Centre (GOSCC), and has been announced as the preferred location for the new Cyber Security Operations Centre (CSOC). In civilian industry, Foregenix is a significant cyber security operation, focused on digital security for the payments industry, and now operating in a number of world markets from its base in Marlborough

- **Telecoms and IT services**, including Swindon-based Excalibur and Vysiiion. Both of these firms have evolved their product offer substantially in recent years as technology has changed, increasingly becoming providers of integrated data and communications systems
- **Creative media**, distributed across the LEP area, and including digital agencies and firms active in new product development (such as Swindon-based augmented reality developer Render Media), as well as organisations active at the interface between digital innovation and the creative arts (such as Create Studios Digital Media CIC)
- **Fintech**, broadly defined as “the basis for end-to-end processing of transactions over the internet” (i.e. the mechanism for the full management of financial transactions, rather than back-office data processing). Historically, Swindon and Wiltshire has had a strong financial services presence (including the headquarters of Nationwide at Swindon, which itself is a major investor in digital technology); within the sector, Appsbroker, based in Swindon, recently acquired Sycamore Financial Technology, and electronic platform developer for financial markets
- **Manufacturing**, with the increasing application of industrial digital technologies, including artificial intelligence and robotics. Swindon and Wiltshire (particularly Swindon and the A350 Corridor) has a long manufacturing heritage. In relation to ‘digital’, this includes the chip manufacturer Intel, which maintains its main UK site in Swindon, and which has also based one of its new ‘Ignition Labs’ there, to support joint work with UK companies in developing connected IT projects. Intel’s presence also highlights the

wider economic benefits of the growth of the technology sector: while the firm’s ‘core business’ is in R&D, design and production, the Swindon site mainly acts as the UK centre for a range of marketing and corporate functions.

Elsewhere, Dyson has expanded into drone research (linked with Cambridge University) and recently announced the start of work in developing its new electric vehicle at its campus in Malmesbury, complementing Swindon and Wiltshire’s existing strengths in automotive engineering (at BMW and Honda). The Dyson Institute of Engineering and Technology, established by the firm at Malmesbury offers an innovative response to the need for higher-level STEM skills, offering ‘immersive engineering’ degrees together with the University of Warwick.

Three key - and linked - observations are worth making on this range of activity:

- First, in terms of specialisms, **the ‘digital sector’ in Swindon and Wiltshire is quite heterogeneous**: there is no single anchor or driver
- Second, in terms of spatial distribution, **there is no central ‘focal point’**: Swindon is the largest employment centre (reflecting its size), but *within* Swindon, businesses are quite dispersed, reflecting good road connectivity and the stock of peripheral business premises
- Third, **‘networks’ of digital businesses appear to be relatively limited**, reflecting the two factors above.

The ‘dispersed’ nature of digital activity is partly a function of Swindon and Wiltshire’s geography and its proximity to other centres. However, the lack of a clear focus possibly means that the extent of the digital business opportunity is insufficiently recognised.

Nevertheless, work is underway to develop a new centre focused on digital businesses at the Mansion House in Corsham (linked with the concentration of digital businesses in the area). The Carriage Works at Swindon also offers the potential to deliver a 'focal point' for the sector.

The Carriage Works: A new centre for digital business activity

Owned by Swindon Borough Council, the Carriage Works, west of Swindon railway station, will provide a major mixed-use development linked with Brunel's historic Railway Village.

Phase 1 of the development will provide an incubation centre, opening in 2018, with further phases offering (in total) 118,500 sq ft of flexible workspace.

Whilst the commercial strategy for Carriage Works is to be finalised, the innovative use of digital technology is likely to be central to many of the firms that will be attracted to the Carriage Works, and the development has the potential to provide a new focus for digital businesses at the heart of Swindon.

Source: Forward Swindon

Digital skills

National challenges...

'Digital skills' are hard to define, and range from advanced 'digital authoring' capabilities to the basic ability to access goods and services through digital channels. For the purposes of this strategy, we are mainly focused on those higher level skills that will help to drive new business growth and levels of technology adoption, recognising that these will include 'hard' technical skills and creative and management capabilities.

A series of reports over the past few years have highlighted the challenges that the UK faces in developing the digital skills base that it needs. In particular, the **Sainsbury Review** of technical education

proposed far-reaching changes to further education, while the Government's new **Careers Strategy** calls for greater engagement between schools and employers to increase awareness of the job opportunities on offer.

Changing demand

Data gathered for the *Working Futures* project anticipate a total requirement for some 5,000 new workers in information technology in Swindon and Wiltshire over the decade to 2024, 40% of which will be accounted for by 'expansion demand' (i.e. newly created jobs). Generally, these will be highly qualified roles (70% of IT workers in the South West are qualified to first degree level or higher), mostly in technical, professional and managerial occupations.

National evidence suggests that demand is likely to outstrip supply, especially in areas of rapid growth and high specialisation (such as cyber security), and internal recruitment and 'upskilling' is likely to be important. Recognising this, a range of national initiatives are underway, including the **Institute of Coding**, in which the University of Bath, UWE and the University of Gloucestershire are all partners.

Employer perspectives

Demand for digital skills is outstripping supply. Nevertheless, in consultation, employers generally reported that they have taken active measures to ensure that they secure the skills they need: despite the absence of a local university and the pull of competing opportunities, Swindon and Wiltshire enjoys a reasonably large labour market catchment, and employers have found that investment in local recruitment has led to significant returns. However, **this requires significant employer engagement** in working with local colleges in providing work experience opportunities and in building awareness

of the employment opportunities in the sector.

With regard to specific skills, digital employers (and providers) highlight the gap between the technology used in the education system and that required by business: as technology moves fast, businesses acknowledged the need for employer investment in building the skills of new recruits.

However, there are examples of new training provision being offered commercially, to digital employers and to people who are already in the labour market and want to improve their skills.

Digital skills in the wider economy

Increasingly, more sophisticated applications of digital technology are

becoming embedded within jobs that have not traditionally been regarded as 'specialist IT' occupations. For example, in health and social care – a sector subject to significant cost pressures – there is an increasing need to upskill staff to deal with digitally-enabled medical devices and support self-management.

Upskilling the existing workforce will be an important element in driving up the adoption of new technology across the economy. Swindon and Wiltshire already has expertise in this area through the work of the Corsham Institute, a not-for-profit institution that carries out research into (and runs programmes linked with) skills and the adoption of technology among the existing workforce.

Bringing it together: Strengths, weaknesses, opportunities and threats

Strengths • Good and improving digital infrastructure • Good connectivity and access to markets and labour supply • Slightly greater than average employment and business concentration in digital sector • Proximity to major centres of digital innovation in Bristol, Bath, Thames Valley and Oxfordshire • Some larger businesses helping to generate demand for advanced digital technology • Relative cost advantages • 'Quality of life' cited as an attraction to entrepreneurs and investors • Proactive support from local partners	Opportunities • Rapid pace of technological change driving new products and business models • Business enthusiasm for greater collaboration • Business-led investment in skills (e.g. Dyson Institute and engagement in recruiting new entrants to labour market) • Greater access to local talent as changes in university market reduces number going away to study • New investment (e.g. in Carriage Works and Corsham Mansion House) • Use of public investment to drive demand • Range of programmers to attract talent and investment
Weaknesses • Lack of clear 'sector identity': diverse and with few 'anchors' • Limited sector networks • Local strengths not always well communicated (particularly given competing offer of neighbouring large centres) • Lack of universal superfast broadband coverage, as some rural areas remain without provision – and mobile coverage sub-optimal in some places	Threats • Recent deterioration in relative productivity • Risk of outflow of talent to neighbouring centres • Loss of competitiveness among businesses failing to adopt new technology • Ageing workforce/ challenges in up-skilling/ re-skilling • Public scepticism in light of data ethics controversies, etc.

The strategy

Strategic priorities

Based on the summary evidence set out above, **our overarching aim is to develop a growing, resilient and competitive economy, which is active at the leading edge of digital technology.**

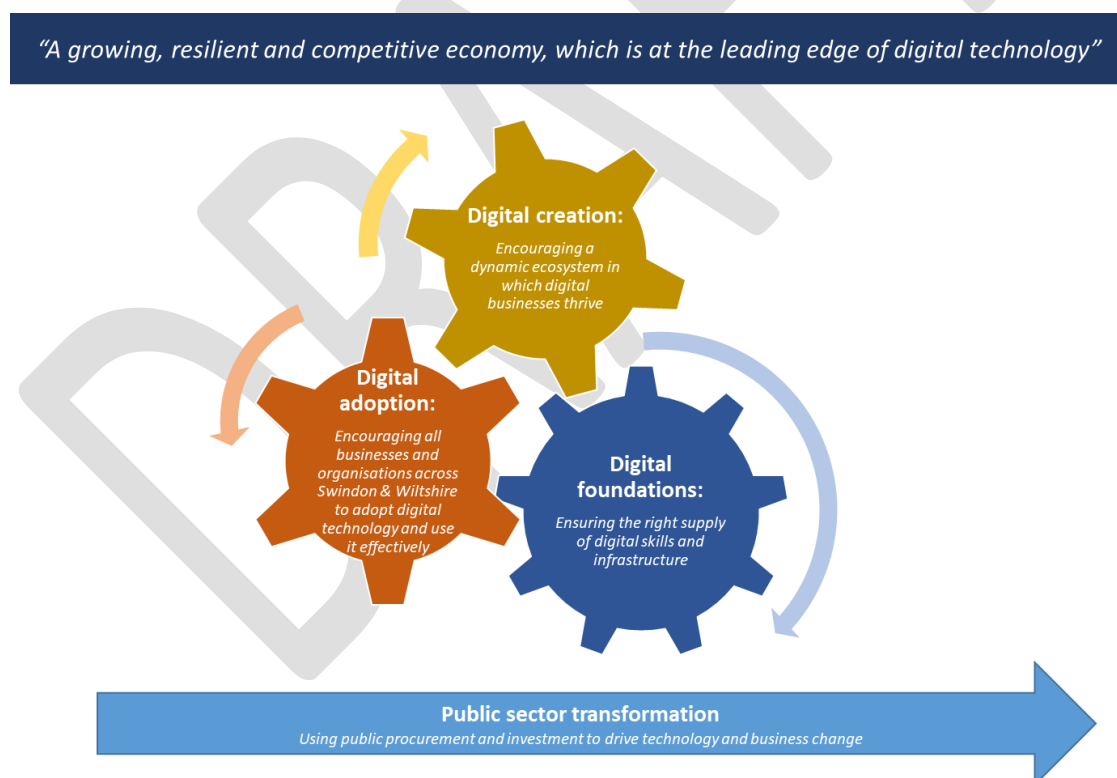
To achieve this aim, we have identified three strategic priorities which will help to inform the content of our forthcoming local industrial strategy.

These are:

- **Priority 1: Digital creation** – developing the ‘ecosystem’ that will support the growth of businesses at the ‘leading edge’ of digital technology
- **Priority 2: Digital adoption** – driving the take-up of digital solutions to support productivity and competitiveness across the economy
- **Priority 3: Digital Foundations** – supporting investment in digital skills and infrastructure

Across all three priorities, the public sector will play an important role in driving digital change.

Figure 4: Strategic framework



Priority 1: Digital creation

Strategic aim:

To create a dynamic ecosystem in which businesses at the forefront of digital innovation grow and flourish

Opportunities and challenges

Swindon and Wiltshire has a dynamic and growing stock of innovative digital businesses, with strengths across a number of sectors and technology specialisms, and some larger businesses and institutions with significant demands for new technology.

The area enjoys proximity to major centres of digital innovation in Bristol, Bath, Oxfordshire and Berkshire – and we have significant cost advantages over these locations.

However, business stock is dispersed, with a number of smaller areas of concentration and no central focal point – and despite the area’s strengths, its ‘core digital’ sector has grown more slowly than in neighbouring areas.

There is an opportunity for the public sector to help drive demand for digital solutions. Wiltshire Council’s *Digital Strategy* sets out a roadmap for digital transformation – increasing both efficiency and business opportunities.

The challenge therefore is to build our ‘digital ecosystem’ across a large, diverse geography, across a range of sectors, and in a market-driven, rapidly changing context.

Actions

Over the next five years, it will be a priority to bring support networks,

premises and access to talent together. Specifically, we will:

Key actions:

- Develop a private sector-led business support model geared to the growth of the digital sector
- Provide a ‘networked hub’ for digital business, with links across Swindon and Wiltshire
- Ensure effective physical provision for new and growing digital businesses
- Drive innovation through public sector transformation

Action 1.1: Develop a private sector-led business support model geared to the growth of the digital sector

A range of business support ‘products’ exist – including the Growth Hub operated by Swindon and Wiltshire LEP, innovation support programmes linked with universities and a coaching and mentoring services offered commercially through the private sector.

Different products appeal to different businesses, depending on their point in the business lifecycle – but there is an opportunity to enable businesses to learn from each other through peer mentoring and coaching and through informal brokerage. This will be facilitated through the operation of the ‘networked hub’.

Linked with this and with existing services, **we will explore the potential to forge stronger links with existing networks** (such as Bristol Media) to Swindon and Wiltshire, building stronger links with our regional neighbours and making use of existing successful practice.

Action 1.2: Provide a networked hub for digital business, with links across Swindon and Wiltshire

Alongside the new digital incubator centre at the Mansion House, Corsham, we will support future opportunities at the

Carriage Works in Swindon. This could include provision of a high quality (and high profile) working environment for digital businesses.

The Carriage Works has the potential to provide a central 'focal point' for networks to grow and events to take place. This could include linking physical provision with a broader innovation support programme.

However, in a diverse and dispersed LEP area, it will also be important to ensure that Carriage Works is part of a wider network of physical centres and business networks, acting as a 'flagship' for a much wider offer.

Action 1.3: *Ensure that effective physical provision is made for small and growing digital businesses across Swindon and Wiltshire*

In consultation, businesses reported significant cost advantages in Swindon and Wiltshire, compared with neighbouring locations in the West of England and the Thames Valley. However, access to grow-on space was cited as a challenge (both on quantitative and qualitative grounds).

Given the diverse nature of the business base and its spatial distribution, there is unlikely to be a 'single solution' to digital businesses' workspace needs: demand is likely to exist for edge-of-town facilities with access to parking, as well as in central urban locations, and this will be provided through the market, as well as through direct public intervention.

So alongside the development of the 'networked focal point' and working across Swindon and Wiltshire, we will:

- **identify the accommodation needs** of small and growing digital technology businesses to inform the planning process
- **encourage where appropriate the reconfiguration of existing buildings**

to support the need for start-up and grow-on space

- **extend the existing network of innovation centres** where demand exists to support the needs of emerging digital businesses

Action 1.4: *Drive innovation through public sector transformation*

Over the longer term, public sector demand can be an important driver of innovation: the data centre activity at Corsham is (for example) partly owed to the legacy of defence-related investment.

As we invest in public service transformation, we will seek to ensure that there are local commercial benefits. This could include:

- **making better use of public data**, through a data hub, which gathers data of many forms, anonymises them, and makes them available for app developers. There are potentially ethical issues relating to data capture and storage, but around the world, small cities similar in size to Swindon are investigating projects of this nature (such as Milton Keynes's *MK:Smart* initiative) to transform service delivery and effecting innovation
- **investing in 'demonstrator' solutions to health and social care and environmental challenges**, making use of Swindon and Wiltshire's generally good digital infrastructure (and ensuring that it remains adequate as demand rises) to investigate the use of new technology and the opportunity to run services differently
- **enabling Swindon and Wiltshire's town centres to operate as 'digital hubs'**, supporting demand aggregation and enabling the use of (for example) augmented reality to support the retail and leisure offer

Priority 2: Digital adoption

Strategic aim:

To ensure that all businesses in Swindon and Wiltshire are deriving competitive advantage from the use of digital technology

Opportunities and challenges

Generally, Swindon and Wiltshire has a well-performing economy, at the heart of one of the UK's most productive regions.

The area also hosts a number of firms (such as Honda, BMW, Dyson and Dstl) that are highly productive and are at the forefront of investment in new technology – although business uncertainty regarding future trading relationships is impacting on investment decisions.

However, nationally there is evidence of a significant divide between levels of digital adoption within 'world leading' businesses and those in the wider business stock. Unless this is addressed, it presents a challenge to UK competitiveness and, locally, to jobs and opportunities in Swindon and Wiltshire.

Evidence indicates that the main barriers to adoption are the workforce skills and management/ shareholder awareness of the long term opportunity relative to the short term investment cost.

Our challenge therefore is to increase the ability of our wider business community to make best use of digital technology, building on the strengths of our leading edge firms.

Key actions

The *Made Smarter* Review prepared by Jürgen Maier for the UK Government made clear that digital adoption is a national challenge that requires national

action: building on this, the *Industrial Strategy* sets out measures to support digital adoption. In this context, we will:

Key actions:

- Encourage all employers to invest in the digital skills of their existing workforce, and support access to relevant Government programmes
- Promote engagement by businesses in Swindon and Wiltshire in programmes to test and roll out new technology
- Create the conditions for collaboration between our innovative digital businesses and the wider business community
- Drive demand for digital solutions through public sector procurement processes

Action 2.1: *Encourage all employers to invest in the digital skills of their existing workforce, and support access to relevant Government programmes*

While much of the focus of skills demand and supply is on new entrants to the labour market (see Priority 3, below), digital transformation in almost all sectors will require the adoption of new skills by existing staff.

Through the Growth Hub, the network of business representation bodies and support providers and our wider partners, **we will promote awareness among SMEs of those schemes designed to increase digital skills** (such as the National Retraining Programme announced in the Industrial Strategy). We will work with our partners to understand business skills gaps, the barriers to upskilling and the case for supplementary local intervention.

The **Corsham Institute** is a locally based centre of expertise in future digital skills demand and the challenges that this presents to industry (see box below). As the Institute's role evolves, we will seek to build stronger links so that we can better use its research to inform policy and

develop demonstrator projects in Swindon and Wiltshire.

The Corsham Institute

The Corsham Institute (Ci) is a not-for-profit research and thought leadership institution, primarily funded through philanthropic contributions. It is based in Corsham with a presence in London.

Ci's mission is to maximise the benefits to society from digital technology. To support this, it carries out research into data ethics and how people can be equipped to adapt to technological change and its implications for employment and society.

Ci is currently running a research programme focused on the training of ex-servicemen and women in digital technology and 'softer' (service and management) skills, potentially with relevance to Swindon and Wiltshire given the large military presence locally.

Source: SQW

Action 2.2: Promote engagement by businesses in Swindon and Wiltshire in programmes to test and roll out new technology

A range of opportunities exist to support the implementation of new digital technology. These include the UK-wide Knowledge Transfer Partnerships Scheme managed via the universities to provide businesses with access to graduate talent to solve commercial challenges, as well as collaborative research and research-focused consultancy schemes.

Across the wider region, several universities with strengths in computer science and other digitally-relevant subjects. Firms in Swindon and Wiltshire ought to be well-placed to take advantage of these. We will work with the universities and our business support and representative bodies to build awareness of and drive demand for these programmes, and we will seek to influence the use of future funding streams to supplement and reinforce them.

Action 2.3: Create the conditions for collaboration between our innovative digital businesses and the wider business community

In addition to university-backed knowledge transfer initiatives, there is scope to build collaboration – and supply chains – between firms engaged in digital innovation in Swindon and Wiltshire and the wider business base. There are already examples of technology businesses preparing 'white papers' and engaging in thought leadership to support the wider economy in meeting the challenges of digital transformation.

While collaboration emerges organically and relies on individual leadership and initiative, through the development of a stronger digital business network, we will seek to build the conditions for greater joint working to take place.

Action 2.4: Drive demand for digital solutions through public sector procurement processes

The public can have an important influence on the adoption of digital technology by suppliers – increasing their resilience and competitiveness in the longer term.

Linked with (for example) the Social Care Digital Innovation Programme funded by NHS Digital, this could involve competitive processes to support providers in developing and using new digital solutions where these will improve outcomes and reduce costs, as well as linking the use of digital technology and compliance with digital standards in the procurement process. This could involve 'hacks' to involve SMEs and individuals in designing solutions to challenges, as well as larger scale competitions

Priority 3: Digital foundations

The strategic aims of Priorities 1 and 2 will only be achieved if we get two 'foundational capabilities' right: the basic **digital connectivity** that businesses and households need, and the **skills** needed to be competitive in a world of advanced technology.

Skills for a digital workforce

Strategic aim:

To create a workforce with the skills to create, embrace and derive value from advanced digital technology

Opportunities and challenges

Employers are willing to engage in strategic initiatives such as the application for the proposed Institute of Technology in Swindon (which, at the time of writing, has moved to the second round of the application process with Government). A strong and extensive employer – education network provide a strong foundation for education innovation.

Employers are actively engaged with learning providers in developing work experience and work-related learning but are frustrated by a dated curriculum that does not maintain pace with technological change.

There is network of FE and training providers, with some collaborative provision at higher education.

There is no higher education institution locally which might benefit from the knowledge, access to innovation and creative force that a university can bring. However, local colleges are working to embed progression to higher education within their digital skills offer. Strong neighbouring universities have significant digital assets, with the University of Bath

leading the new Institute of Coding programme.

Young people are often limited in their access to learning due to the rural nature of the area and difficulties in travelling between sites and employment placements.

There are also inequalities in the labour market, with some concentrations of lower skills levels, particularly in Swindon.

Key actions

Technological change will impact across all sectors and across the whole workforce. So Swindon and Wiltshire will need to **prepare its young people for digital adaptability** through education and skills training, via the proposed Institute of Technology and across the system. The current workforce will also be affected by new digital technologies, so there is a need to build both advanced **digital skills and career resilience into the existing workforce**.

As with any disruptive change, there will be winners and losers. There can be significant costs for local communities if people are excluded from employment either through lack of skills or accessible opportunity. So we need to ensure that young people have the best digital skills for their transition to employment, that there is appropriate provision for people in work, and that there are **actions to tackle equal access to opportunity**.

Key actions:

- Encourage children and young people to aspire to build strong digital skills and knowledge
- Build the capacity of education providers to harness digital technologies
- Build an infrastructure for digital apprenticeships
- Ensure that digital skills are accessible to all

Action 3.1: *Encourage children and young people to aspire to build strong technical digital skills and knowledge*

Employers and businesses can help education and training providers to prepare children and young people to aspire to successful digital careers. This can be through a range of initiatives including apprenticeships offered from Level 3 up to Level 7, work placements extending from 30 through to 300 hours as for the new T-levels, work place learning systems and mentoring or engagement in a range of other career inspiration activities.

There are many initiatives for employers to link up with (a recent report suggested there were over 600 school-employer STEM engagement initiatives). But at a local level this needs coordination to ensure that employer energies are used in engaging young people directly, rather than in navigating a complex education system. There are also challenges associated with employers and providers in dispersed, rural areas. We will build a digital skills theme into LEP-led enterprise advisors, careers inspiration, mentoring and other initiatives associated with the national Careers Strategy, to help ensure that children and young people are aware of digital skills and opportunities associated with them.

Action 3.2: *Build the capacity of education providers to harness digital technologies within the education sector*

Education and training providers recognise that their students will need digital capabilities to respond to future technological change. One of the local colleges is looking to embed digital skills across all its courses: this should be encouraged across all providers.

We will seek to **enhance the digital capabilities of learning providers** through access to better digital equipment, networks and skills across the whole curricula. This could include opportunities to develop and pilot new educational

tools to increase access to learning (for example among young people who are physically remote from college/employment sites, people in the workforce needing to access short courses and the needs of teaching staff to test new digital technologies. This could involve partnerships between local digital businesses and commercial skills providers.

Action 3.3: *Build an infrastructure for employer engagement in Apprenticeships and new routes to work*

Many employers are taking a proactive role in engaging with providers to recruit talent at an early stage, and we will seek to promote this good practice.

Alongside this, while Apprenticeships are an important tool for workforce development, providers reported several challenges in making apprenticeships work as the new systems associated with the Levy are developed and implemented.

Through Higher Futures, there is a successful model in Swindon and Wiltshire to support businesses in securing their skills needs. With apprenticeships remaining a priority, the education and skills board will **maintain oversight of digital apprenticeship opportunities** to understand what the opportunities and difficulties are as practices develop.

Action 3.4: *Ensure digital skills are accessible to all so that the area becomes known for being digitally diverse*

Across the UK, the profile of the workforce in digital businesses is not as diverse as it could be – which means that we are missing out on much potential talent.

We will ensure that inspiration activities for children and young people are inclusive, recruitment to courses and apprenticeships is carefully constructed to encourage a wide variety of applications,

and that good practice by employers is celebrated.

At the same time, greater skills demand in digital technology provide an opportunity for people in work – both in digitally-related occupations and those seeking to retrain:

- For those who are already in ‘digitally-intensive’ occupations, we will with employers and the higher and further education sector, support efforts to encourage progression within the workforce...
- ... and for those in the wider economy who need digital skills to access employment, we will encourage new models of training and employment – for example through the ‘DigiSheds’ programme being rolled out nationally.

Overarching all of the skills actions above – and recognising the importance of digital skills to drive forward productivity, enable ‘channel shift’ in public services and ensure inclusion – we will seek to better coordinate digital skills provision, learning from the first pilot Digital Skills Partnerships.

Digital infrastructure

Strategic aim:

To ensure that Swindon and Wiltshire’s digital infrastructure network keeps pace with the potential of new technology and that the benefits of this technology are spread evenly throughout the area

Key issues

The available communications infrastructure in Swindon and Wiltshire is generally good compared with other parts of the UK, although there are still some localised issues:

- There is good availability of Ultrafast broadband (>300Mbit/s) in Swindon

- The availability of superfast Broadband (>30Mbit/s) is good in Swindon and Wiltshire and is improving through the Superfast Swindon and Wiltshire Online programmes
- Around 4% of premises in Wiltshire do not have access to fixed broadband at ‘acceptable speeds’ (> 10 Mbit/s)
- Mobile coverage is good in Swindon and Wiltshire with very high coverage of 2G networks (still important for voice coverage) and high and growing 4G coverage of Swindon (90%) and Wiltshire (67%)

However, *demand* for faster connectivity is rising, as new applications and products are developed to take advantage of widespread access to improved infrastructure. The development of the ‘smart cities’ concept, using digital technology to improve transport, health and the environment could help to drive demand further.

Key actions

Key actions:

- Continue the roll-out of Superfast broadband through the Superfast Swindon and Wiltshire Online programmes
- Focus marketing on areas with poor service so that homes and businesses are aware of the DCMS voucher scheme to assist with the cost of network roll out and awareness of the Openreach Community Fibre Partnership scheme is raised
- Engage with mobile operators so that they are aware of acute problems caused by poor coverage or capacity
- Engage with the DCMS programme of 5G test beds

Action 3.5: *Continue the roll-out of Superfast broadband through the Superfast Swindon and Wiltshire Online programmes*

The Superfast Swindon and Wiltshire Online programmes are continuing to roll out superfast broadband to premises with low access speeds. The working relationships with providers are good and this positive engagement should continue for the duration of these initiatives.

Action 3.6: *Focus marketing on areas with poor service so that homes and businesses are aware of the DCMS voucher scheme to assist with the cost of network roll out and awareness of the Openreach Community Fibre Partnership scheme³ is raised.*

There is support for communities without good broadband access through the DCMS voucher scheme which offers £3000 to SMEs and £500 to households to help with the cost of getting connected to Ultrafast broadband. The Community Fibre Partnership scheme also allows communities to come together and request connection to a good broadband service. Openreach will advise on grants and access to the voucher scheme and what the cost of connection will be and the community can then decide if they can pay the cost to make broadband available.

We will promote access to information about the scheme, and we will work with local communities in rural areas that are not currently able to access superfast broadband to aggregate demand and put together funding packages.

Action 3.7: *Engage with mobile operators so that they are aware of acute problems caused by poor coverage or capacity*

Mobile operators use sophisticated models to prioritise their network roll out.

However, they fail to recognise pockets of poor coverage.

Good information provided to network operators can help them to re-prioritise roll out where their models have underestimated the actual demand for service.

Using local business intelligence, we will seek to ensure that operators are aware of local shortfalls in capacity and, where possible, demonstrate the potential commercial gains from resolving them.

Action 3.8: *Engage with the DCMS programme of 5G test beds*

The DCMS has set aside £16m to support a series of 5G test beds around the UK. This represents a good opportunity for Swindon and Wiltshire to 'get ahead of the game' in 5G and there are potential opportunities in the areas of security and autonomous vehicles that may prove to be particularly interesting. However, to take full advantage of the potential of 5G, we will need to ensure that our infrastructure keeps up with likely future demand.

Building on the experience of existing test beds (such as the recently established facility focused on start-up and smaller businesses at Basingstoke), we will engage with DCMS and the national 5G Innovation Centre and develop proposals for a similar opportunity in Swindon and Wiltshire, identifying suitable areas with residential and business opportunities.

³ <https://communityfibre.openreach.co.uk/>

Moving forward

Making it happen

The concept of ‘digital capabilities’ is broad, and achieving and maintaining “*a growing, resilient and competitive economy which is active at the leading edge of digital technology*” will require sustained action over time.

At *strategic* level, this strategy (and the evidence base that accompanies it) will make an important contribution to Swindon and Wiltshire’s forthcoming **local industrial strategy**, placing digital innovation, digital adoption and the need to get the ‘foundations’ of infrastructure and digital skills right at the heart of a broader approach to the economy. As the strategy sets out, developing Swindon and Wiltshire’s digital economy must also involve neighbouring LEPs, given the area’s strong cross-LEP labour market and supply chain links and the presence of important assets (such as the universities) just outside its boundaries.

At *operational* level, further work will take place to develop the actions outlined under each priority. At the same time, the evidence base developed as part of the strategy will help to inform proposals for project funding and, as the landscape becomes clearer, schemes such as the forthcoming UK Shared Prosperity Fund.

The development of this strategy has also benefited from substantial business input, and engagement with several digital businesses from across Swindon and Wiltshire provides the basis for a stronger ‘network’, which we need to be maintained and developed.

Measuring success

Given the dynamism of the digital economy and the rapidly changing technology landscape, this strategy is as much about “creating the conditions” in

which business can succeed, as it is about specific direct actions. However, it is important that we are able to measure the success of the strategy over time.

A high-level monitoring framework has been prepared to accompany this document, using a number of indicators linked with each of the strategic priorities.

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