

**Manchester City Council
Report for Information**

Report to: Economy Scrutiny Committee – 28 February 2018

Subject: Manchester’s Digital Sector

Report of: Strategic Director (Development) and Deputy Chief Executive (People)

Summary

The purpose of report is to provide a brief overview of the digital sector in Manchester. The report covers the vast opportunities of the digital sector in Manchester, both in terms of growth and businesses. As well as being important for its own sake, digital plays a key role in the city’s wider agenda, enabling reform; this is being examined through our smart cities work. It also examines the challenges facing the digital sector, including digital skills, digital infrastructure and artificial intelligence.

Recommendations

The Committee is invited to consider and comment on the report, including the opportunities and challenges for Manchester’s digital sector and the implications for the city’s wider agenda.

Wards Affected:

All wards

Alignment to the Our Manchester Strategy Outcomes (if applicable)

Manchester Strategy outcomes	Summary of how this report aligns to the OMS
A thriving and sustainable city: supporting a diverse and distinctive economy that creates jobs and opportunities	The digital sector is currently a large part of Manchester’s economy. It is one of the main identified growth sectors to 2025, both in terms of gross value added and job creation.
A highly skilled city: world class and home grown talent sustaining the city’s economic success	To enter roles in the digital sector, residents need to be equipped with the required skills; this is essential to ensuring the city’s future growth. There are many opportunities for residents wishing to pursue a career in this industry, including apprenticeships.

A progressive and equitable city: making a positive contribution by unlocking the potential of our communities	The digital agenda is central to the success of other services, such as health and social care improvements, the reform of children and families' services, and supporting people in work. Digital will also support the city's inclusive growth agenda.
A liveable and low carbon city: a destination of choice to live, visit, work	Key enablers in improving the city's liveability, sustainability and connectivity are digital and technology.
A connected city: world class infrastructure and connectivity to drive growth	Creating a digital framework for the city. Digital ability underpins connection, both in terms of infrastructure and transport.

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Background documents (available for public inspection):

The following documents disclose important facts on which the report is based and have been relied upon in preparing the report. Copies of the background documents are available up to 4 years after the date of the meeting. If you would like a copy please contact one of the contact officers above.

Northern Powerhouse Independent Economic Review
http://www.sqw.co.uk/files/5414/6723/8824/16987_-_TfN_-_NPH_IER_-_Executive_Summary_-_Final_24_June_2016.pdf

Manchester Digital – Skills Audit Report 2018

https://www.manchesterdigital.com/sites/default/files/Conference%20Day%20Audit_v3_web.pdf

Centre for Cities - Cities Outlook

<http://www.centreforcities.org/publication/cities-outlook-2018/>

New Economy – Digital Creative Deep Dive

<http://www.neweconomymanchester.com/publications/deep-dive-research>

Tech North – Northern Digital Jobs Strategy

<https://technorthhq.com/careers/northern-digital-jobs-strategy/>

IPPR North - Devo Digital

<https://www.ippr.org/publications/devo-digital>

1.0 Introduction

- 1.1 Manchester has the largest digital sector in the UK outside of London, and one of the largest in Europe. It has grown dramatically in recent years and is predicted to be one of the city's main growth sectors to 2025. Manchester's digital sector has particular strengths in connectivity, broadcast and new media, digital marketing, e-commerce and cyber security.
- 1.2 As well as having an impact on the city's economic growth, digital advances will have a positive impact on Manchester's other priorities and how residents go about their day-to-day lives, including in health and transport. This will help to support the city's inclusive growth agenda. In order for Manchester to get the most benefit from digital developments, there is a need to overcome some of the current challenges faced by digital skills and digital infrastructure. Although the effects it will have are not fully known, artificial intelligence also poses questions for the labour market.

2.0 Digital Growth

- 2.1 The 2016 Northern Powerhouse Independent Economic Review identified four outstanding capabilities in the North, where the region is highly productive and can compete on a national and international level; one of these capabilities was digital. Greater Manchester's creative and digital sector currently accounts for over 68,000 jobs and generates a gross value added (GVA) of £3.4 billion per annum. The Greater Manchester Forecasting Model predicts that, between now and 2025, an additional 2,100 jobs will be created in the creative and digital sector within Manchester specifically; percentage growth in the sector's GVA is predicted to be approximately 25% for the same period, the second highest of any sector. The range of jobs with the digital sector goes beyond those that are purely technical, including roles such as marketing and graphic design.
- 2.2 The current strength of the digital sector at a regional level, combined its ability to disrupt traditional business models, present an opportunity to accelerate growth across all sectors in Greater Manchester in both national and international markets. New applications for digital technologies will be found in health and social care; business, financial and professional services; advanced manufacturing; and transport, amongst others. Across the sector, the use of Big Data will provide opportunities for data companies to work with an increasingly diverse range of sectors, as well as presenting opportunities in cyber security, mobile and cloud computing. These openings will exist for existing companies and future entrepreneurs alike.
- 2.3 The majority of the region's digital sector is found in and around the conurbation core. The Corridor Manchester (centred around the Oxford Road corridor) is home to more than 80 digital companies, employing approximately 1,500 people. This includes university spin-outs (Telecity), local scale-up companies (Metronet, ANS Group), Hitachi's European branch of their Global Centre for Innovative Analytics at the European Big Data Laboratory, and the

Cisco CREATE UK research and development team. The Sharp Project in North Manchester supports new digital businesses via its incubator spaces. Spinningfields is increasingly attracting tech hubs who want to be situated near the neighbourhood's many financial and professional services companies. The Northern Quarter is home to many digital start-ups and SMEs, many of which use disruptive technology. In Salford, the BCC and ITV at Media City UK are home to many digital content and development businesses.

- 2.4 Councils have a role to play in enabling a supportive environment for digital growth, particularly as they are much closer to the needs of the local sector than central government or national agencies. There is a need to develop an 'enabling' culture, which is responsive to future trends, and which can look to build on academic and industry strengths within the region. The Council will continue to develop strong relationships across the digital sector, from large multinationals to SMEs to industry organisations. This is important to help understand the sector's potential and what support it requires to continue growing.
- 2.5 In order to make the most use of the burgeoning digital sector, we need to ensure we have the necessary digital skills and digital infrastructure in place (see below). This is also important to ensure that digital growth is inclusive with all residents able to benefit from it, including having affordable access to digital services and online platforms, and having the skills to partake in digital jobs. There is also a need to be sure that there is sufficient low-cost, start-up space for new digital businesses, and suitable affordable office space for them to move into as they grow.
- 2.6 Whilst Manchester has predicted strong digital growth, the city's digital strengths are not well known outside of the UK's digital sector. There is a need to increase the promotion of Manchester's digital capabilities outside of the digital world, both at a national and international level. This is picked up in the project proposal Digital Strategy, which is presented to the Committee in a later item.

3.0 Digital Businesses

- 3.1 Manchester has a number of digital businesses across a wide range of specialisms, including connectivity, broadcast and new media, digital marketing, e-commerce and cyber security. The city is increasingly seen as a potential base for companies to relocate to, or to open a secondary base in, given the lower rental costs and good transport connectivity. Manchester Digital recently ran a campaign in London to encourage developers to relocate to Manchester. Thoughtworks, a leading global digital agency, opened their second UK office in Federation House, NOMA in late 2017. Others prominent digital companies include TheLadBible, Coop Digital, ANS and UK Fast.
- 3.2 The majority of companies now use digital technology; however, this does not make them digital companies. For example, many retailers have online

content but are not digital businesses in the same way that app developers or wholly-online businesses are. Although Manchester is home to a number of digital-focused businesses, it is perhaps better known for businesses that use digital platforms. Amongst the largest of these are boohoo.com, Missguided, ao.com, AutoTrader and LateRooms.

- 3.3 In late 2016, Manchester was awarded funding for two tech hubs – one with Allied London in the Enterprise Centre in the St John’s development, and one with Bruntwood within their Circle Square scheme. When complete, these will add to the city’s tech ecosystem, made up of a number of hot-desking and co-working spaces, as well as a wide range of digital events and conferences. This development of these businesses is supported by the Business Growth Hub, which delivers intensive scale-up programmes for digital and technology SMEs in Greater Manchester.

4.0 Smart Cities

- 4.1 Councils can have a strong role in being able to pull together various public, private and academic sector partners to support collaborative initiatives, and to work with other cities in the world to share knowledge. The Council has played this role in relation to Manchester’s work on the smart cities agenda. By having a good understanding of what would make the city more liveable, the Council has worked with industry partners to help apply digital technology as a solution in some of these areas.
- 4.2 Manchester is home to the UK’s Internet of Things (IoT) City Demonstrator, CityVerve. CityVerve is a consortium of 21 partners, including larger companies such as Cisco and BT, alongside SMEs, public bodies and universities. CityVerve aims to radically overhaul how a city’s services are provided to its citizens by focusing on four themes, including Health and Transport. It uses IoT technology to facilitate ‘smart’ improvements for those that live, work and study in the Oxford Road Corridor area. Examples of smart improvements are digital wayfinding with the ‘Buzzin’ app, piloted at Manchester Christmas Markets and Pride 2017 with SME Sparta Digital, and ‘PlaceCal’, a location based calendar of local and community events to tackle social isolation and loneliness in Moss Side and Hulme, working with Manchester Metropolitan University (MMU). Members of the partnership are attending the Committee to discuss their experiences of Manchester’s digital sector.
- 4.3 The Triangulum project is funded through the Horizon 2020 European Union ‘Smart Cities and Communities’ Programme and is seeking smart, low carbon and energy saving solutions across the cities of Manchester, Eindhoven and Stavanger. €9m funding has been provided to Manchester partners, University of Manchester (UoM), MMU, Siemens and Clicks and Links, with around €1m directly for the Council. The project is working across the themes of energy, mobility and ICT to explore innovative solutions to reduce costs, reduce energy consumption and engage with Manchester citizens. It will run until

January 2020. Examples of smart improvements that are making the city more liveable are the provision of free cargo bikes for any organisation on the Oxford Road Corridor for last mile deliveries and increasing the number of Electric Vehicles in the fleets of MMU and UoM, as well as informing the potential provision of Electric Vehicles within the Council to.

- 4.4 Both projects are working with cities across the UK and Europe to share and disseminate what is happening in Manchester, as well as learning from these cities about their experiences in using technology to find solutions to their city's issues.
- 4.5 Synchronicity is a 36 month European funded Horizon 2020 project which is an IoT large scale pilot, working across eight cities to create the first digital single market in IoT-enabled services in cities. Alongside the Council, other Manchester partners are MMU and SME technology partner Bronze Labs. We will be piloting a software platform and methodology, which will take data from our other smart city projects Triangulum and CityVerve, plus other city level data sources. It will enable officers to have access to a rich picture of how the city is operating in order to inform decisions on planning, policy and service delivery. Manchester will also participate in an open call for additional funding awards where SMEs will be encouraged to develop innovative, data-driven solutions to city challenges.

5.0 Digital Skills

- 5.1 Although the digital sector has strong predicted growth, this will only be fully achieved if there are enough people with the necessary digital skills to fill the required roles. The digital skills gap is the most significant challenge facing the sector, not just in Manchester but across the North of England. Employers are already not finding the right skills or the right combination of skills readily available, leaving a lot of vacancies unfilled. Tech North's Northern Digital Jobs Strategy states that 58% of digital companies in the North say finding 'talent' is a key business challenge. Digital tech vacancies are the most common job type in the North of England, reaching 712,750 vacancies in three years. In some parts of Greater Manchester, over 15% of adults have never been online and over 25% lack basic digital skills, including managing information, communicating, transacting and problem-solving. Alongside technical skills, project management, design and management skills are also in short supply within the sector.
- 5.2 Manchester Digital hosts records an annual survey of their members on a number of topics, including digital skills. The findings from their 2018 report show 77% of businesses reporting growth over the previous 12 months. To support this growth, businesses needed to recruit beyond the regional talent pool, mainly from the rest of the UK (16%) and outside the EU (7%). There was a reduction in recruiting from the EU from 10% in 2017 to 6%; this is likely to shrink further with Brexit. 27% of businesses reported having to turn away work as a result of not being able to find the right talent. It is therefore essential that the city grows its own talent pool, both through upskilling

residents and retaining graduates. This competition in the labour market drove up salaries, with 47% of employers having to inflate salaries. Gender imbalance appears to be slowly improving but not fast enough, with a ratio of 64:36 male to female employees in tech businesses and 81:19 in technical roles. There is also a large BAME gap, with BAME employees only making up 19% of the digital tech workforce.

- 5.3 Strong learner demand is not always translating into giving employers the skilled workforce that they need. The pace of technological change makes it difficult for schools and colleges to devise and maintain an up-to-date curriculum. The resulting narrow focus of the computing curriculum struggles to keep young people engaged in digital past the age of 13, particularly young women. There are also difficulties in attracting graduates from computer science and related disciplines into teaching given the employment and career opportunities in the digital sector itself. Education developing closer links with industry would it help to understand the digital sector's current requirements and improve this. However, the pressure of exam results means that there is often not a lot of capacity in schools to connect to the sector, especially with the predominance of small and micro businesses. Better information, advice and guidance is needed within schools so young people see the industry as a viable career option.
- 5.4 Due to the large number of small companies the digital sector has, it is difficult for them to participate in more traditional apprenticeship and training schemes. There are some well-developed apprenticeship offers which are helping to meet the skills shortage. These include software developer apprenticeships from Manchester Digital and the Skills Company, the Juice Academy, and Sharp Futures, which also operates a talent pipeline programme.
- 5.5 More innovative approaches are appearing within the sector. For example, North Coders are an organisation that offer 12 week full time / 24 week part time "coding bootcamp" courses that teach software development skills. Courses are taught alongside their in-house career development team, which set up interviews with Northern tech employers and support students until they have found a suitable job in the industry. Manchester College has co-designed their digital courses with AMAZE; on successful completion, students get AMAZE 'branding' alongside their formal qualification. AMAZE frequently recruit talent from this student cohort.
- 5.6 Recognising the skills gap, the industry itself is also trying to tackle it, resulting in a very vibrant informal offer from the sector. This includes running coding clubs in primary schools, the Hive's provision for 14-19 year olds, and Madlab's various courses and workshops for both children and adults. These simultaneously help stimulate interest in the sector whilst equipping people with the required skills. This informal offer needs to continue to grow to reach more young people and residents to help address the skills gap.
- 5.7 As well as supporting young people, it is also essential that there are opportunities for residents to upskill and gain basic digital skills. Both MAES and Manchester College have an offer for basic skills, which will allow

residents to access Universal Credit, search and apply for online jobs and access public services. Other areas have taken this further with the adoption of the Duke of York Award. Modelled on the Duke of Edinburgh Award, people of any age can acquire a bronze badges by completing online programmes in digital skills, including applications, basic programming and marketing. The programmes for silver and gold badges are currently in development. Wigan Council have adopted the model, rolling it out to their own staff, as well as schools, colleges and community organisations. It is also necessary that information on digital careers and pathways is available to all residents, including adults who may need to re-skills for work in the digital age.

- 5.8 Digital technology can also play an important role in helping older residents with basic daily tasks, such as food shopping. The increasing advances in digital innovation will also lead to improvements in health and social care, which will allow residents to safely remain in their own homes for longer. We need to ensure that there are opportunities for older residents to gain the digital skills required to access these opportunities. The Age Friendly Manchester team will be consulted when developing the Digital Strategy to ensure it captures how digital technology can best help older residents.
- 5.9 In February 2017, the Greater Manchester Combined Authority approved the Greater Manchester Digital Talent & Skills Programme, recognising that digital skills are increasingly required for jobs within all sectors. The Programme commits to spending £2 million on digital skills over three years, with the expectation of leveraging further investment from private, public and third sector sources. The Programme articulates Greater Manchester's ambition is to become a 'digital learning city', creating a critical mass of digital skills and positioning the region as the key centre for business to invest in outside of London if they seek a digitally skilled workforce. The programme aims to deliver a GM wide ambition to have:
- A vibrant and inclusive pipeline of digital talent;
 - All educational institutions and providers embedding digital skills within their curriculums;
 - Companies across all sectors investing in the skills of their current/future workforce; and
 - Every citizen with the basic digital skills needed for society and work.

Delivery arrangements for the Programme are currently under development with partners.

- 5.10 The Council hosts a Digital Skills Network. This brings together people from industry with people from education and non-formal learning organisations. One of the developments is a computing curriculum and careers day. These were piloted with Sharp Futures last year and has been adopted by Manchester Digital as part of their Digital Skills Festival this year.

6.0 Digital Infrastructure

- 6.1 Manchester also requires the necessary digital infrastructure to support sustained growth in the digital sector, to deliver the city's wider ambitions and as a digital provider itself. Digital infrastructure is a key factor when companies consider relocation, requiring good broadband and access to data centres. Key pieces of digital infrastructure for supporting growth are increasing 4G, the introduction of 5G, fibre to premises and public Wi-Fi. Street furniture, such as lamppost and bus stops, will play an increasingly large role in digital infrastructure as it is enabled to allow for a gradually smarter city.
- 6.2 Public investment in digital infrastructure has traditionally come from central government via various agencies and initiatives (Broadband Delivery UK, Innovate UK, the Catapult), or from funds with specific requirements attached (e.g. European structural funds.) Devolution will undoubtedly lead to more flexibility in how Manchester and other cities choose to prioritise funds.
- 6.3 In February 2018, Openreach, the firm that manages the UK's broadband infrastructure, announced it will accelerate its plans to run fibre connections direct to premises. This will increase internet speeds from 24 megabits per second to 100 megabits per second. Manchester is one of the eight cities Openreach is targeting in the first phase of its programme.
- 6.4 The government is currently open to applications for the Local Full Fibre Network Challenge Funding, a £190 million fund to stimulate commercial investment in full fibre networks by demonstrating approaches that encourage additional private investment and by making sustainable commercial deployments viable. This intervention is welcome, given the UK currently have approx. 2% full fibre to premise coverage, compared with 60% in Spain and Portugal. The Greater Manchester Combined Authority is in the process of submitting a bid for the funding, which would have a transformational impact on market confidence, encouraging further fibre investment to the significant benefit of Greater Manchester residents, businesses and organisations. A successful bid will also enable public services across the region to benefit from future-proofed fibre connectivity, supporting innovation in public services within the GM reform ambitions.
- 6.5 One of the main challenges facing digital infrastructure is ensuring that all residents can access it, both physically and financially. Whilst there may be greatest business demand for better digital infrastructure in the city centre, it is needed throughout all of the city's neighbourhoods to be of the greatest benefit to residents. Although improving fibre connectivity is important, residents also need to be able to afford to access the provision and have digital devices that enable them to do so. This is important to consider to ensure that digital fully supports the inclusive growth agenda and digital exclusion is reduced.

7.0 Artificial Intelligence and Automation

- 7.1 Artificial intelligence is frequently mentioned in media reports on the future of work and the economy. However, there is no consensual idea on the impact that it will have. Most current analysis focuses on the jobs that are likely to be affected by automation, which are typically at the lower end of the labour market. Little work has been done to examine the impact on the middle or higher end of the labour market.
- 7.2 In their annual report, the independent thinktank Centre for Cities' "Cities Outlook 2018" examines the impact that artificial intelligence and automation may have on UK cities. It finds that the cities in the North are more likely to be at risk of losing jobs to automation than cities in the South. This is because artificial intelligence will have a greater impact on jobs that are made up of routine tasks (rather than interpersonal and cognitive skills), which are more prevalent in the North. As such, Centre for Cities argues that the North-South divide is likely to become greater. However, the report notes that all cities are likely to see an increase in jobs across both the public and private sector, which will replace any jobs lost to new technology. As such, it is essential that younger generations are equipped with skills to work in non-routine work.
- 7.3 The impacts of digital technologies are already being seen in more routine work, including distribution centres, retail and manufacturing. These are already starting to spread into less-routine areas, such as basic legal and financial work. It is important to note that, as well as differences between cities, there will also be differences within cities, with certain communities affected more than others. It is recommended that the impact of artificial intelligence and automation on Manchester's labour market is monitored.

8.0 Greater Manchester Digital Strategy

- 8.1 Since being elected Mayor in 2017, digital has been high on the agenda of Andy Burnham. Following a Digital Summit in June 2017 and a follow up Summit in December 2017, the GMCA has developed the first draft of a Greater Manchester Digital Strategy. It mainly focuses on digital businesses and the digital sector's growth. It is essential that Manchester plays its role in the delivery of the Greater Manchester Digital Strategy; officers will continue to work with the GMCA on the document's development and implementation. However, there are some challenges that are unique to the conurbation core. As such, it is suggested that the Council develops a separate Manchester Digital Strategy; the proposal for this is detailed in a later item to the Committee.
- 8.2 The Council will also continue to work with the GMCA on GM Connect, a practical example of where digital technologies are being used to improve public services. GM Connect uses data sharing to help identify where resources will make the largest impact and to enable the delivery of personalised public services. This is central to driving better outcomes for users, maximising value for money and creating opportunities for private

sector investment, all essential for delivering the region's growth and reform ambitions.

9.0 Conclusion

- 9.1 Manchester's digital sector is flourishing. As well as being important for its sake due to the level of predicted growth in GVA and jobs, it is also central to the success of the city in achieving other priorities. In order for it to succeed, there is a need to ensure Manchester has the digital skills and infrastructure to support its growth.
- 9.2 Economy Scrutiny Committee are requested to consider the report, and in particular comment on the challenges and opportunities facing Manchester's digital sector.