# Deep Dive: 04
# Digital and Creative Industries

Date: September 2016

GMCA

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**FINAL REPORT**

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# Contents

# Executive Summary

## Context

- Across Greater Manchester (GM) – and the North more broadly – the Digital and Creative Industries sector is disrupting traditional business models and providing strong growth in both employment and Gross Value Added (GVA). Digital, one of four prime capabilities identified for the Northern Powerhouse, benefits from critically important assets in GM such as MediaCityUK, the Sharp and Space Project and research expertise on the Corridor Manchester. These assets provide space for idea-sharing and access to talent that is important not only for the sector, but also for other sectors where technological change will contribute to further productivity growth. This is explored in more detail in the Science and Innovation Audit (SIA) of GM and East Cheshire.
- Despite the importance of the sector to the UK's and GMs economy, the sector still suffers from challenges to accurately capture its scale and performance, in particular at local levels. Additionally, datasets are poorly equipped to capture the impact of the sector in other parts of GM's economy. Where possible, the report's narrative seeks to capture how innovation in the sector influences other industries.
- This study looks at Digital and Creative Industries in total and then by the following sub-sectors:
    - **Digital industries.** This is made up of various subsectors such as: Communications Equipment, Communications Services, Computing and Peripherals, Film/TV Broadcasting, ICT Equipment, Information Processing, Multimedia Communications, Multimedia Publishing, Multimedia Services, Software, Systems Integration, and Vision and Sound Equipment.
    - **Creative industries.** This consists of a wide range of subsectors, including: Printing and Publishing, Film and Television Broadcasting, Advertising and Marketing, Creative Arts & Entertainment, Architectural Design, and Photography.
- Even defined narrowly, the sector was the fastest growing in terms of employment in GM between 2010 and 2013 and joint fastest in terms of output growth.
- GM has established strengths at an international scale in Computer Engineering, Hardware and Programming, Telecommunications and Satellites, Big Data, Data Analytics, Interactive Media / Simulation and Software Development and Smart Sensors, Detectors and Autonomous Systems. There are 54,400 jobs in the sector in GM with an even split of 28,300 jobs in Digital Industries and 26,100 in Creative Industries, and these combine to generate a total GVA of £3.1bn.
- While the sector has experienced strong growth, levels of GVA per employee in the sector in GM (£51,200) fall behind the national average (£56,800).[1] There are also considerable variations between the two major subsectors. GVA per person employed in Digital

[1] Greater Manchester Forecasting Model (GMFM)

Industries in both the UK (£73,900) and GM (£66,200) is significantly higher than that in Creative Industries (UK £42, 600, GM £37,300).

- However, in both cases, GVA is lower than the UK average, although the national figure is distorted by London as a global leader in both digital and creative sectors.
- The variation in productivity also reflects the industrial structure within the two sectors (and arguably the difficulty in capturing the total economic value of Creative Industries). Digital Industries includes a number of high value added, high skilled subsectors such as: communications services, computing, ICT equipment, information processing, multimedia publishing and services. However, in the Creative Industries productivity is mixed, covering a range of subsectors such as film/TV broadcasting, publishing, advertising and marketing, arts and entertainment.

## The Growth Opportunity

- The importance of the Digital sector at a Northern Powerhouse scale and its ability to disrupt traditional business models give an opportunity to scale up and accelerate business growth across all sectors in GM in national and international markets. This will include new applications for digital technologies including health, business services, financial services and advanced manufacturing providing significant opportunities for existing and future entrepreneurs. The SIA of GM and East Cheshire highlights the importance of exploiting synergies between GM's areas of strength such as Health, Digital, Advanced Materials, Biotechnology and Energy.
- InnovateUK identified convergence of different media platforms, the capturing and managing of value transactions and new approaches to data, as factors which will significantly affect the sector at a global and UK-wide scale.[2]
- All of these trends make Digital Industries one of the fastest growing sectors in the global economy, and this is reflected in the GM growth forecasts. For creative industries, increasing demand for content in gaming, film, TV and advertising will lead to increased opportunities for creative production including film, drama and music, areas where GM has a number of strengths. Furthermore, the proliferation of media and creative platforms and services will also increase demand for independent production.
- Across the sector, use of Big Data (using large analytics to identity trends and patterns in large and complex data sets) will provide opportunities for data companies to work in larger markets and a diverse range of sectors as well as extending a programme of demonstrator and test-bed projects such as CityVerve allowing whole systems testing. Other developments which will drive opportunities include cyber security, mobile and cloud computing.
- The national importance of both creative and digital sectors has already been supported by the development of MediaCityUK at Salford Quays, where one in seven of the BBC's staff work, with over 1,000 specialising in digital applications. The presence of ITV and

[2] Technology Strategy Board (2013): Creative Industries Strategy
https://connect.innovateuk.org/documents/3220887/3676376/Creative%20Industries%20Strategy%202013-2016?version=1.0

Channel 4 together with assets such as The Landing and The Sharp Project have enhanced its role as a genuine cluster of digital, media and creative firms in which specialisation is starting to take place and its position as a pan-northern asset and the leading creative, media and digital centre outside of London. In this context GM has major potential for 'North Shoring' (attracting firms from the overheated London and South East).

- Employment in GM is expected to continue to increase markedly, growing over the next 20 years by 18,700 jobs at a rate of 1.2% p.a. under the Accelerated Growth Scenario (AGS 2015). The growth in GVA is even more marked with an annual forecast growth rate of over 3.6%, adding £3.7bn GVA to GM's economy by 2035.

## Key Challenges

- Digital and Creative is built upon the talent and innovation of its workforce, and many companies involved in the development of creative content and new forms of media place an emphasis on a young and high-skilled workforce. To sustain the sector, GM needs to continue to attract highly mobile and sought after young workers and entrepreneurs, in the face of intense competition from London and, to a lesser degree, other major UK cities. This target market is influenced by the quality of place and the combination of employment opportunities and lifestyle offer.
- Similarly, there is a major challenge to address skill shortages identified in the Digital Industries sector. Skills shortages tend to be related to a lack of candidates with proficiency in current software (and hardware) skills rather than specific qualifications. At the same time employers are demanding not just up-to-date technical skills but also highly developed generic competencies in business management and communication. Strong learner demand is not translating into giving employers the skilled workforce that they need and the pace of technological change makes it difficult to devise and maintain an up-to-date curriculum in which employers have confidence. The structure of the sector (including prevelance of micro businesses and freelancers) makes skills development challenging and whilst there are many good initiatives in GM there is a lack of coherence and strategic framework. An approach is required to addressing digital skills shortages that facilitates much greater involvement of businesses in the sector working with schools from Primary level upwards, to develop curriculum approaches that start to develop the technical and generic skills needed.
- While GM has some clustering of businesses in creative, digital and technology companies, in particular within Salford Quays, MediaCityUK and Manchester city centre, there is a major opportunity, and challenge, in scaling up smaller clusters of activity, in the same way other major digital clusters have flourished in other parts of the UK. This will require a broad range of support, including an investment environment which allows high-growth companies to remain in the conurbation as they expand.

## Spatial Considerations

- Growth in Digital and Creative Industries is likely to continue to be focused in places that are well-connected in terms of digital and transport infrastructure, have access to a strong talent pool, can offer a wide culture and leisure offer which is attractive to skilled workers, and have high quality urban environments.
- Flexible business accommodation, with well-designed shared space to promote idea sharing and collaboration, will prove attractive to many micro-size and small businesses and those at the start up stage, particularly where located close to public transport links. Parts of creative industries, notably cultural, creative and artisan enterprises, will need inexpensive mixed-use space. This will be driven by a reduction in supply/choice as many older buildings in the regional centre and some town centres are re-developed for housing and higher value employment uses.
- Manchester, with the Northern Quarter, the Sharp and Space Projects and the St. John development will continue to attract businesses within the sector. Corridor Manchester's R&D strengths will also prove attractive to new or relocating firms. At the same time, many companies will require less expensive office locations, and will look for premises outside of or at the fringe of main business districts.
- Future strong employment growth in the sector will likely be focused around the main clusters of sectoral employment and growth in central and east Manchester, Salford Quays/ MediaCityUK and through into Trafford Park. MediaCityUK, with its anchor tenants of BBC and ITV providing an international profile, will also be important in attracting businesses to cluster in the area. A growth assessment recently undertaken by Ekosgen and Arup suggested that over the next 25 years, over 18,500 jobs could be created at MediaCityUK/Salford Quays based on a demand and supply side growth assessment. Whilst this will likely be in a range of sectors including BFPS, increasingly specialisation is likely in particular within the digital and creative sectors.
- Further growth is also likely to be linked to smaller clusters in lower cost locations, such as those that exist within Bolton, Bury, Rochdale, and Stockport/North Cheshire. Growth is likely to come from spin-out from larger firms and new, typically micro-sized, firms. This demonstrates the flexibility of the sector, as these businesses can operate in any location, provided that the requisite digital infrastructure is in place. Indeed, the flexible nature of the sector suggests opportunities for growth exist linked to new developments across the conurbation, such as is being progressed at Ashton Old Baths, now running for over a year, Stockport Business and Innovation Centre and the Wayra/Hack Digital Enterprise Hub, launched in Oldham as a key part of the Independent Quarter. Growth opportunities also exist from micro businesses created by home workers in residential areas.

# 1 Introduction

1.1 This report is one of a series of sector 'Deep Dive' reports. It was commissioned by the Greater Manchester Combined Authority (GMCA) as part of GM's economic evidence base, and in particular, to inform the development of the Greater Manchester Spatial Framework (GMSF). The report is part of a wide ranging analysis of the economic issues and opportunities across GM. The evidence is at a greater degree of granularity than has ever been done before for any industry sector in GM.

1.2 The Deep Dive research comprises the following reports:

- **Part 1: Research summary:** Providing an overview of the key issues affecting productivity and participation in GM, including demographic structures and labour market profiles. It also includes an assessment of the key factors that are expected to drive economic change in the global, UK and GM economies in the coming decades. It summarises the key findings from each of the sector chapters
- **Part 2: Sector deep dive reports:** Covering the following key sectors: Manufacturing; Business, Finance and Professional Services; Digital & Creative; Health/Social Care and Health Innovation; Low Carbon and Environmental Goods and Services; Logistics; Retail and Wholesale Distribution; Hospitality, Tourism and Sport; and Construction.

1.3 For each sector, the analysis covers:

- Current make-up of the sector, covering the size, scale and relative importance to GM and geographic footprint, not constrained to administrative boundaries[3];
- Recent growth rates and growth potential (using forecasts by Oxford Economics);
- The location of critical assets and institutions across GM;
- Market opportunities and threats for the sector, including long-term trends which will shape the future scale, needs and location of the sector; and
- The spatial considerations of accelerated levels of growth in the sector.

1.4 The Deep Dive research has been produced by New Economy, with Deloitte supporting at the scoping stage and Ekosgen reviewing the outputs and providing independent quality assurance. The work has been developed drawing on input from both the public and the private sectors. Workshops have been held with Chief Executives and local authority officers in each GM district to check and challenge the evidence presented and to assess how it fits with local plans and to draw out the GM wide implications of the research. Consultation has also been undertaken with experts from a wide range of public and private partners including the Manchester Growth Company, GM's universities, TfGM, GM Chamber, pro-Manchester, Manchester Airport, NHS North West and LEP and Business Leadership Council members to provide further input and challenge to the evidence presented. The work also draws upon and feeds into the findings of the Northern Powerhouse Independent Economic Review.

[3] The data provided in the sector deep dive series of reports is used to support the understanding of the major trends within the sector and to set the context of the sector against the wider economy and UK.

# 2 Definitions

2.1 The Digital and Creative sector is difficult to define because of the way digital technology disrupts traditional industries, creating new ways of working and thus becoming interwoven across the economy. However, for this report the primary subsectors are defined as:

- **Digital industries:** This is made up of various subsectors such as: Communications Equipment, Communications Services, Computing and Peripherals, Film/TV Broadcasting, ICT Equipment, Information Processing, Multimedia Communications, Multimedia Publishing, Multimedia Services, Software, Systems Integration, and Vision and Sound Equipment. Examples of firms in the digital industries in GM include: Nycomm Ltd, K3 Business Technology Group, Kewill, DP Data Systems Ltd, Zen Internet, ANS Group Plc, UKFast, NCC Group, GBM Digital Technologies Ltd, BT and Talk Talk, Virgin Media, and Fujitsu.
- **Creative industries:** This consists of a wide range of subsectors, including: Printing and Publishing, Film and Television Broadcasting, Advertising and Marketing, Creative Arts & Entertainment, Architectural Design, and Photography. Examples of firms in the creative industries in GM include: MediaCom, Carat Media, Dock 10 Ltd, Allied Publicity Services Group, BBC, ITV and Channel 4.

2.2 Each of the subsectors has the potential for wealth and job creation through the generation and exploitation of intellectual property. They are involved in conceiving and producing content and manipulating, storing, analysing, distributing and disseminating creative goods and services, both to the public and to other businesses, as well as creating the technology platforms on which this can be achieved.

2.3 The primary subsectors of Digital and Creative are ever increasingly intertwined as design becomes more important for digital providers, and creative businesses continue to take advantage of the latest technologies.

2.4 Using the SIC codes below allows data analysis to give a flavour of trends within the sector. Unless otherwise stated, the figures provided within the report refer to the SIC definition of the sector as set out above and are therefore likely to underplay the sector's true size and scale.

2.5 It is also important to note that, due to the dynamic nature of the sector, data is constantly changing and quickly outdated and therefore difficult to get a 'real time' view of the sector.

## Digital and Creative Sector Definition

| SIC Code(s) | Description |
|---|---|
| **Creative Industries** | |
| **18** | Printing and reproduction of recorded media |
| **58** | Publishing activities |
| **59** | Motion picture, video and television programme production, sound recording and music publishing activities |
| **60** | Programming and broadcasting activities |
| **73** | Advertising and market research |
| **90** | Creative, arts and entertainment activities |
| **7111** | Architectural activities |
| **741** | Specialised design activities |
| **742** | Photographic activities |
| **Digital** | |
| **61** | Telecommunications |
| **62** | Computer programming, consultancy and related activities |
| **63** | Information service activities |

# 3 Significance

**3.1** It is only over the last decade that the true contribution of the Digital and Creative industries to the UK economy has come to be recognised. Nationally it was worth £112bn in 2013 of which £3.1bn was in GM. The sector is relatively small in GM, accounting for 5.9% of GM's overall GVA, as compared with 7.9% nationally.

**3.2** The sector is high-value, knowledge-intensive, employs highly-skilled people and drives growth and demand across a wide range of sectors. It also plays a critical role in driving forward knowledge-intensive economic growth and many linkages exist between digital and creative sectors and other sectors of economic activity, for example Advanced Manufacturing and Healthcare.

**3.3** The digital subsector is hard to measure. Using big data, the National Institute of Economic and Social Research (NIESR) suggests that the digital economy comprises almost 270,000 active companies in the UK (14.4% of all companies as at August 2012) as compared with 167,000 companies (10% of all companies) when the Government's conventional SIC based definitions are used.[4] This implies that there are 40% more companies in the digital subsector than conventional statistics suggest.

**3.4** Similarly, when big data was used to look at employment, the digital economy's share was found to be 11% of all jobs, compared to 5% as conventionally thought. It is equally difficult to assess the numbers of technical ICT specialists across all sectors of the economy, however nationally the Tech Partnership[5] estimates that of those working in tech specialist roles 49% work in the digital sector ('Digital Makers') and 51% in other sectors across the economy ('Digital Workers).

**3.5** Across the Northern Powerhouse area there are established strengths in Computer Engineering, Hardware and Programming (in Liverpool, Manchester and Sheffield City Regions and Tees Valley) and Telecommunications and Satellites (in the Leeds, Manchester and Sheffield City Regions).

**3.6** There are also more recent specialisms in Big Data, Data Analytics, Interactive Media/simulation and Software Development (in the Leeds, Liverpool, Manchester and North East City Regions) and Smart Sensors, Detectors and Autonomous Systems (in the Liverpool and Manchester City Regions)[6].with the SIA of GM and East Cheshire highlighting GM strengths around Cyber security and Fintech.

**3.7** Furthermore, The Hartree Centre for high performance computing at Daresbury is home to the world's 30th most powerful computer.[7]

[4] National Institute of Economic and Social Research (2014): Measuring the UK's Digital Economy with Big Data
Note SIC code definition of sector used in NIESR research is different from SIC code definition used in this report
[5] Tech Partnership (2015): Employer Insights Skills Survey 2015
https://www.thetechpartnership.com/globalassets/pdfs/research-2015/tec_employer_skill_survey_web.pdf
[6] SQW (2016): Northern Powerhouse Independent Economic Review, Competitive Advantage and Sector Strengths
[7] SQW (2016): Northern Powerhouse Independent Economic Review, Competitive Advantage and Sector Strengths

**3.8** It is important to note that the Digital and Creative Industries definition used in this report relates to those firms that specifically belong to the sector. However, these firms also form part of the wider Creative Economy – as defined by the Department for Culture Media and Sport (DCMS) – which is estimated to contribute over 2.6m jobs to the UK.[8] This is in recognition of the fact that that many occupations, sitting across all parts of the economy, include Digital and Creative output.

**3.9** The Confederation of British Industry (CBI) identifies the Creative subsector as a key sector forming a central part of the UK's global appeal and underpinning a thriving creative economy. Building on this existing progress and providing the foundations for future growth is essential in solidifying the position of the UK as the world's leading creative hub.[9]

**3.10** The Digital and Creative sector is important for GM in terms of both its employment and GVA growth prospects. The sector was the fastest growing in terms of employment in GM, growing by 12.6% in total (equating to 4.1% p.a.) between 2010 and 2013. In comparison the next fastest sector, Business and Professional Services, grew at 9.9%[10]. Likewise, the sector was joint fastest in terms of output growth, which grew by 7.4% in the sector during the period, in line with output growth in Business and Professional Services.

**3.11** The national importance of the sector is increasingly recognised, evidenced by the development of MediaCityUK at Salford Quays and the associated consolidation of existing activity and growth of the BBC, ITV and Channel 4 in the region.

**3.12** The Sharp Project, Manchester Science Partnerships and the Northern Quarter host a range of Digital and Creative companies which together with GM's Universities and the R&D assets along Corridor Manchester are also seen as important accelerators of growth, both for GM and the wider northern economy.

**3.13** From a tech perspective, GM boasts many home-grown, award-winning companies including Late Rooms, Boohoo, AO.com, Nifty, Formissimo, UKFast and ANS as well as many global investors such as IBM, Microsoft, HP, CISCO, and NCC. It also contains a range of companies who now perceive themselves to be tech businesses such as AutoTrader, BETFred, BNY Mellon, Ford Credit, Travel Counsellors, Amaze, Building Blocks, rentalcars.com and Peak.

**3.14** From an employment perspective some of the most significant employers in the sector in GM are the BBC, ITV, Virgin Media, Talk Talk, BT, Fujitsu and Zen Internet.

[8] DCMS (2015): Creative Industries Economic Estimates, January 2015
[9] CBI (2014): The Creative Nation - A Growth Strategy for the UK's Creative Industries
[10] ONS, Business Register & Employment Survey

# 4 Business and Employment

## Digital and Creative Industries

4.1 At national level the Digital and Creative sector was worth £112bn in terms of GVA in 2013 with GM generating £3.1bn GVA. The sector is relatively small in GM, accounting for 5.9% of GM's overall GVA, as compared with 7.9% nationally. Between 2010 and 2013 the GVA of the sector in GM grew by 2.4%p.a., slightly behind national trends (2.8%p.a.) but well above the regional growth rate of 1.3%p.a. for the same timeframe.

4.2 Productivity in the sector stands at £51,200 per person employed, which is currently 10.9% behind the national average. Arguably this gap in part reflects other key clusters across the UK being home to some of the world's biggest technology companies, for example in East London's Tech City (Silicon Roundabout), King's Cross, and along the M4 corridor.

**Figure 1: Digital and Creative Industries key sector statistics [11]**

| Digital & Creative (All Subsectors): | | GVA | Employment | Businesses |
|---|---|---|---|---|
| GM | Level 2013 (businesses 2014) | £3.1bn | 54,400 | 9,215 |
| | Change (% per annum, 2010 to 2013/14) | 2.4% | 4.0% | 4.2% |
| GB/ UK | Level 2013 (businesses 2014) | £112bn | 1,617,500 | 292,380 |
| | Change (% per annum, 2010 to 2013/14) | 2.8% | 1.5% | 4.0% |

Sources: Greater Manchester Forecasting Model, Business Register & Employment Survey, Inter-Departmental Business Register

**Figure 2: GVA per person employed in Digital and Creative Industries, 2013**

| | GVA per person employed | |
|---|---|---|
| | GM | UK |
| Digital Industries | £66,200 | £73,900 |
| Creative Industries | £37,300 | £42,600 |
| Total | £51,200 | £56,800 |

Source: GMFM. Please note employment figures in GMFM may differ from Business Register & Employment Survey figures used elsewhere in this report.

**Figure 3: Digital and Creative Industries in GM - key metrics**

| | Businesses | | Employment | | |
|---|---|---|---|---|---|
| | 2014 | Change 2010-2014 | 2013 | Change 2010-2013 | Comment |
| Digital Industries | 4,875 | 880 | 28,300 | 3,100 | Strong growth in business numbers and in employment |
| Creative Industries | 4,340 | 515 | 26,100 | 3,000 | Moderate growth in business numbers, strong growth in employment |
| Total | 9,215 | 1,395 | 54,400 | 6,100 | Strong growth in business numbers and in employment |

Source: Inter-Departmental Business Register, and Business Register & Employment Survey

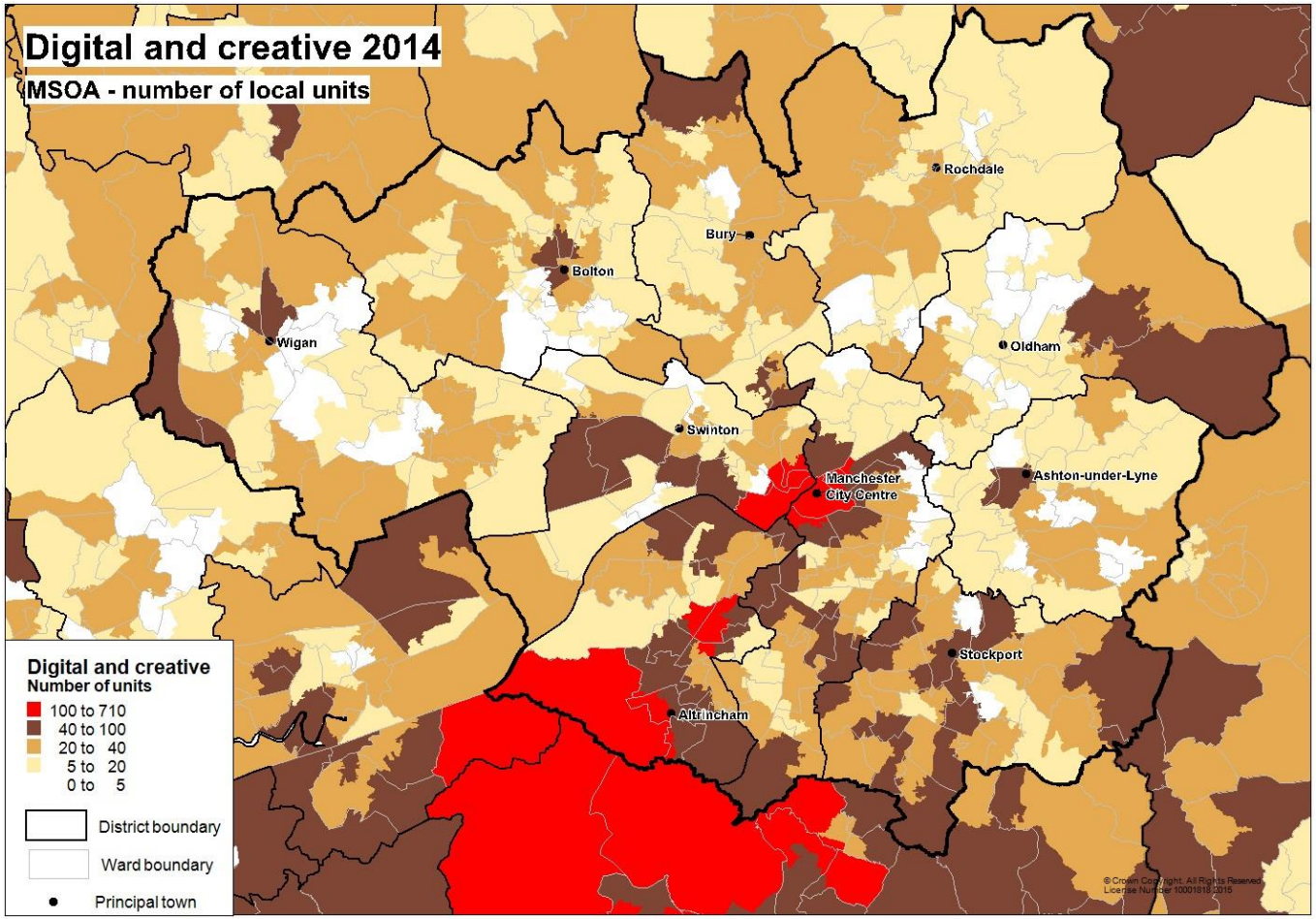
[11] Latest data 2013 for employment and GVA, and 2014 for the number of businesses

**Figure 4: Digital and Creative Industries in GM - key metrics**

| | Business Size Band by number of employees | | | | |
|---|---|---|---|---|---|
| | Micro (0- 9) | Small (10- 49) | Medium (50- 249) | Large (250+) | Comments |
| Digital Industries | 91.2% | 7.1% | 1.4% | 0.3% | Micro businesses slightly above the sector average |
| Creative Industries | 89.1% | 9.0% | 1.7% | 0.2% | Small businesses slightly above the sector average |
| Total | 90.2% | 8.0% | 1.6% | 0.3% | Industry dominated by micro and small businesses |

Source: Inter-Departmental Business Register (Data may not sum due to rounding)

**Figure 5: Digital and Creative Industries businesses in Greater Manchester, 2014**




Source: Inter-Departmental Business Register

Figure 5 demonstrates the concentration of Digital and Creative Industries firms within GM. It shows a significant hub of businesses clustered within the centre with high concentrations extending through to Trafford Park and Sale though to Bowdon/ Altrincham and on into Cheshire.

The density of businesses is greatest in the central core hub – with the central (red) area containing 1,325 business units, as compared to the southern (red) end of the cluster around Bowdon/Cheshire which contains 725 businesses. There is a correlation between high concentrations of businesses and the sector's key assets. Clustering of businesses within this sector presents a significant opportunity for close collaboration and cross fertilisation.

There are concentrations of businesses particularly to the south around Chorlton, Didsbury, Heaton South, around Stockport Town Centre through to Bramhall. In addition, there are concentrated pockets of businesses around town centres including Wigan, Bolton, and Ashton and pockets in attractive semi-rural areas at the outskirts of the conurbation – for example in Ramsbottom and Saddleworth.

**Figure 6: Digital and Creative Industries employment in Greater Manchester, 2013**

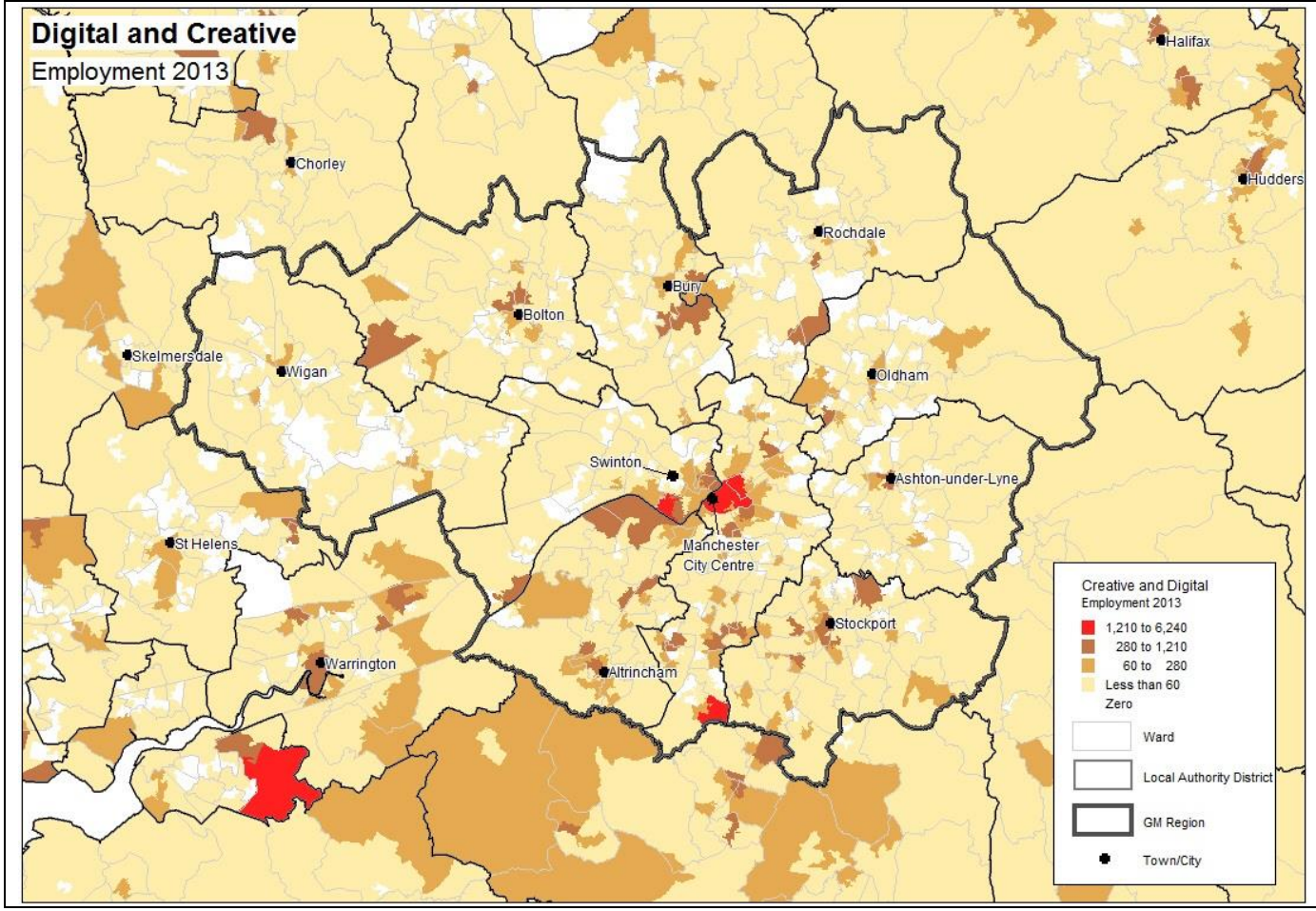



Figure 6 shows that employment in the Digital and Creative Industries is distributed across the conurbation.

However, there are significant notable concentrations focussed in the conurbation core and Salford Quays into Trafford Park, as well as around Manchester Airport to the south of the conurbation.

There are also further pockets of concentrated activity distributed across the conurbation including around Lower Irlam, Sale, Altrincham, Brooklands, Didsbury, Stockport town centre and Bredbury in the south as well as to the north around Westhoughton, Bolton Town Centre, Unsworth, Castleton, Chadderton South and Ashton Town Centre.

Source: Business Register & Employment Survey

4.3 There were 9,215 Digital and Creative Industries businesses in GM in 2014, comprising 42.4% of the North West sector, and 3.2% of the UK total. The vast majority of these businesses employ fewer than 10 people. Over 99% of firms are SMEs (less than 250 employees) across both subsectors, in line with UK trends.

4.4 Businesses in the Digital subsector are marginally more likely to be micro with 91% of firms in GM employing fewer than 9 people, compared to 89% of Creative businesses. In 2013 there were 54,400 people in employment in the Digital and Creative Industries in GM, comprising 43.9% of the North West total in the sector, and 3.4% of the UK total.

4.5 The following analysis provides more detail at subsector level within Digital and then Creative Industries.

## Digital Industries

4.6 There were 4,875 Digital Industries businesses in GM in 2014, comprising 3.2% of Digital Industries businesses in the UK and just over two fifths (41.5%) of Digital Industries businesses in the North West. In terms of employment, 28,300 people were employed within the Digital Industries in GM in 2013 representing 43.3% of the sector's employment in the North West and 3.4% nationally.

4.7 Looking at the sector's location quotient – a measure of employment concentration within the local economy compared with the national average – Digital industries overall are less concentrated within GM than compared to nationally (0.79) but more concentrated compared to the North West (0.71). Telecommunications are broadly close to national levels, whereas Computer Programming and Information Services fall well behind the national average.

**Figure 7: Location quotient (LQ) of Digital, 2013**

| SIC | Description | LQ |
|---|---|---|
| 61 | Telecommunications | 0.94 |
| 62 | Computer programming, consultancy and related activities | 0.75 |
| 63 | Information service activities | 0.71 |
| **All** | **Location Quotient for Digital Industries subsector** | **0.79** |

Source: Business Register & Employment Survey

4.8 In absolute terms GM has a high number of people working in "Computer Programming, Consultancy and Related Activities" with this subsector accounting for three-fifths (circa18,000) of employees in the Digital subsector.[12]

[12] ONS Business Register & Employment Survey, 2013

**Figure 8: Digital Industries businesses in Greater Manchester, 2014**

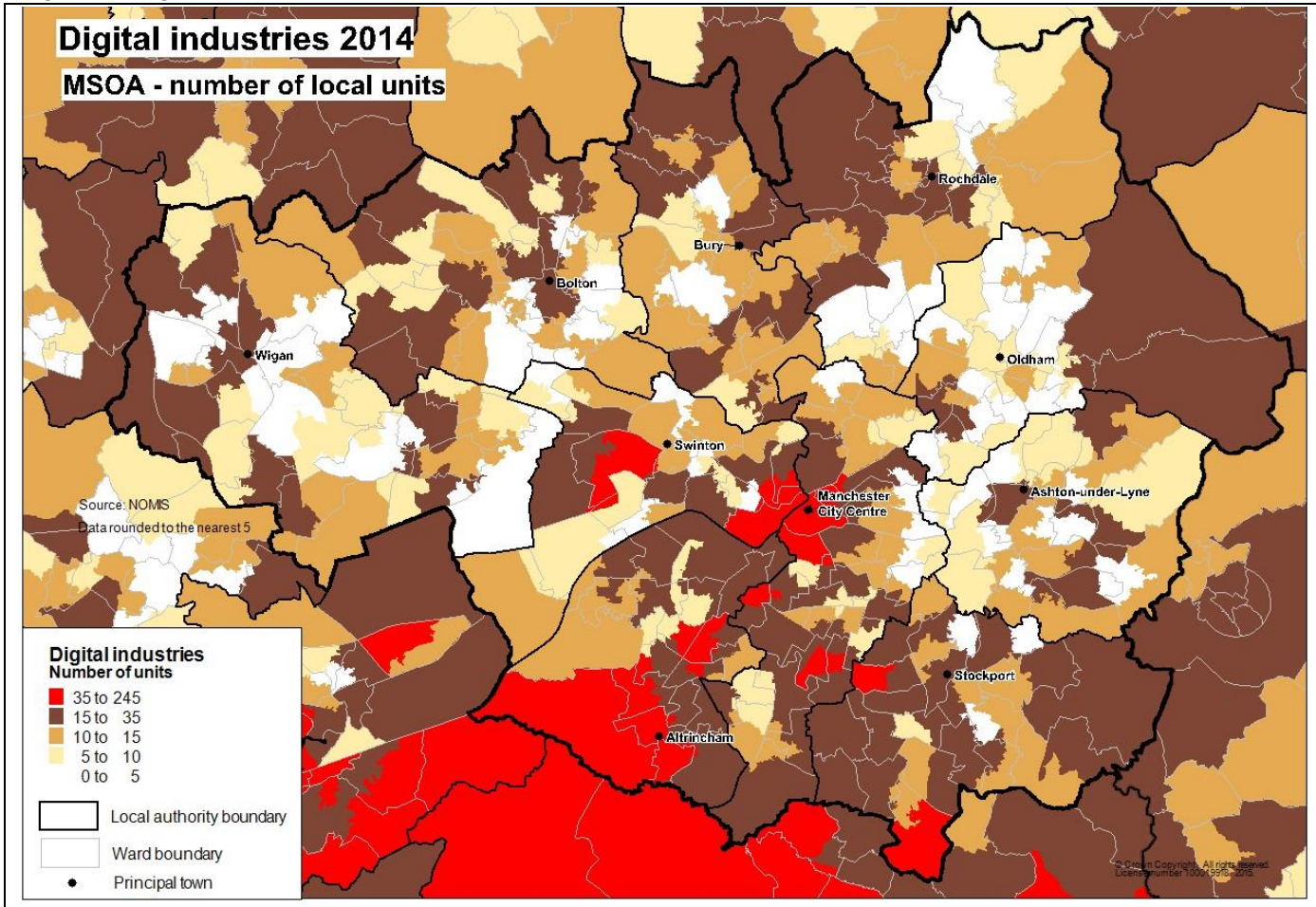



Figure 8 shows a clear cluster of digital businesses in Manchester city centre extending out to MediaCityUK in the West and Ancoats and parts of Miles Platting/Newton Heath in the East (incorporating 565 business units in the central red area).

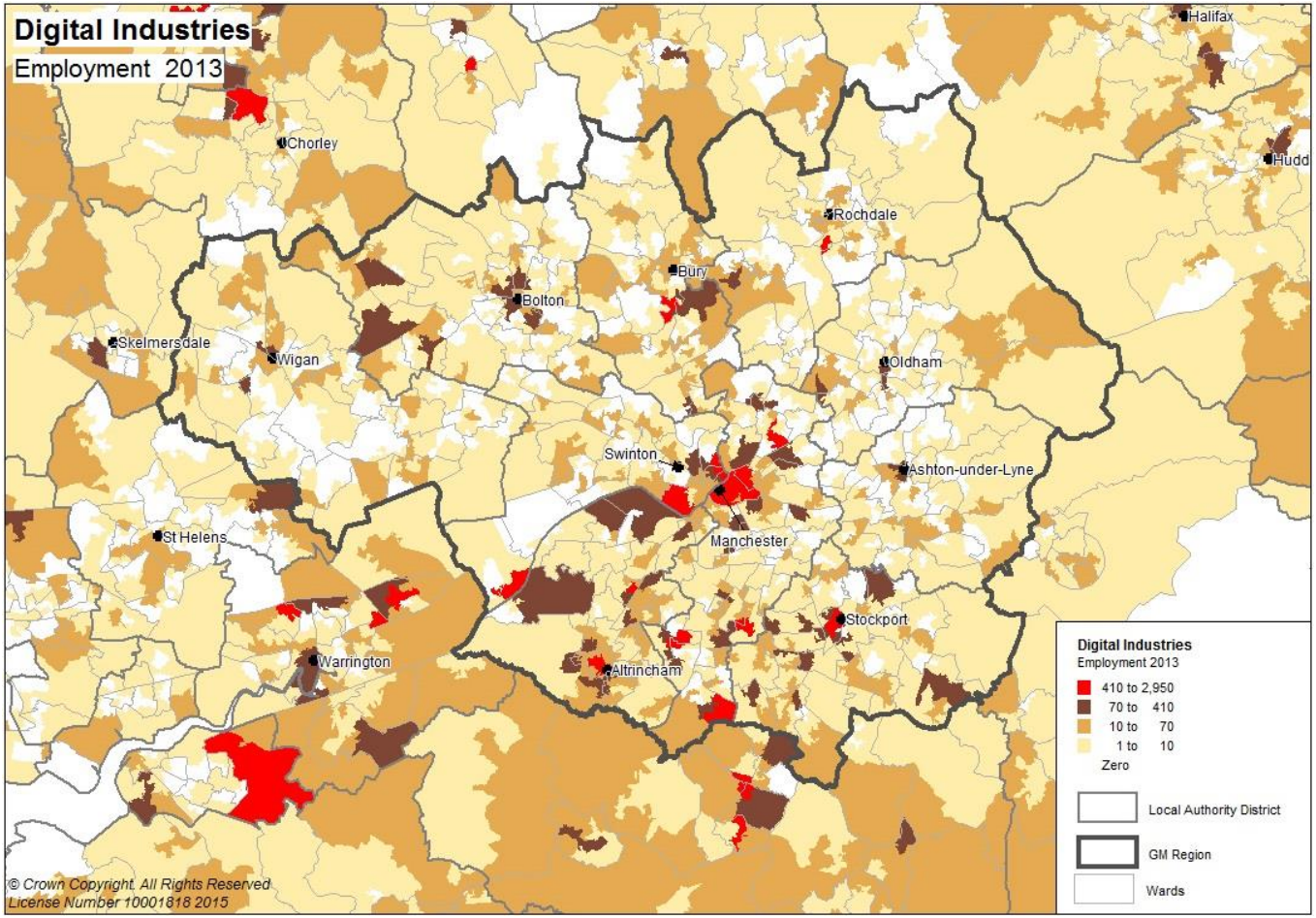
There are also significant clusters found through Sale (110 business units in red area) and on into Bowdon/Altrincham (250 business units in red area) and then extending on into Cheshire.

Other smaller but notable pockets are found in the south of the conurbation in Chorlton, Didsbury, Heaton Norris and Woodford and Bramhall as well as in Worsley.

Reflecting the clustering in the centre, through a corridor to the south of the conurbation, data shows that just under a quarter (24%) of Digital businesses are located within the city of Manchester, and almost two thirds (63.7%) of GM's digital businesses are located within the centre or south of the conurbation within the city of Manchester, Stockport, Trafford and Salford.

Source: Inter-Departmental Business Register

**Figure 9: Digital Industries employment in Greater Manchester, 2014**




Source: Business Register & Employment Survey

Figure 9 identifies a clear cluster of employment in the Digital Industries in Manchester city centre, extending through to MediaCityUK and Trafford Park to the west, and parts of Harpurhey, Miles Platting and Newton Heath in the east. This aligns with the business analysis above and is strongly correlated with key assets including MediaCityUK and the Sharp Project.

There are smaller, but significant, clusters of employment to the south of the conurbation from Cadishead (Talk Talk) through to Altrincham, Brooklands, Woodhouse Park, Didsbury East (National Computing Centre) and Brinnington and Central.

Other notable pockets of employment are found around the centres of Bury (Redvales) and Rochdale (Milkstone and Deeplish – Zen internet) and Bolton (BT base in Horwich), as well as further out on the outskirts of the conurbation, for example within Marple South.

Beyond the GM boundaries it is evident that the digital growth corridor extends further to Warrington and Halton with key assets such as the Hartree Centre and the Cockcroft Institute, as well as south towards Wilmslow and Alderley Edge.

4.9 In terms of business creation, the Digital sub sector in GM grew more strongly than in the North West, with the region seeing 15.6% growth (1,590 more business units) compared to 22% growth (880 more business units) in GM between 2010 and 2014. Although the conurbation's growth rate was only marginally lower than the national rate of 22.9%, it was significantly lower than London which saw 39.7% growth (11,305 more businesses) in the same period.

4.10 Analysis at a district level shows that increases in the number of digital-based businesses were seen in all ten districts within GM. Five out of the ten districts saw growth rates of over 20%, although the absolute increases in these districts varied from 325 more businesses in the city of Manchester to 45 more businesses in Oldham and Rochdale. In 2014 Salford was home to some 9.2% of GM's digital businesses, however the district has experienced the highest growth rate of 42.9% (135 more businesses) over the four-year period (2010-2014), even higher than the growth rate in London (39.7%). This clearly demonstrates the role of MediaCityUK.

**Figure 10: Number of business units in Digital Industries, 2010 to 2014**

| | Business Units | | | Change 2010 to 2014 | |
|---|---|---|---|---|---|
| | 2010 | 2014 | 2014 (%) | No. | % |
| Bolton | 320 | 370 | 7.6% | 50 | 15.6% |
| Bury | 290 | 305 | 6.3% | 15 | 5.2% |
| Manchester | 835 | 1,160 | 23.8% | 325 | 38.9% |
| Oldham | 205 | 250 | 5.1% | 45 | 22.0% |
| Rochdale | 190 | 235 | 4.8% | 45 | 23.7% |
| Salford | 315 | 450 | 9.2% | 135 | 42.9% |
| Stockport | 670 | 730 | 15.0% | 60 | 9.0% |
| Tameside | 205 | 225 | 4.6% | 20 | 9.8% |
| Trafford | 630 | 765 | 15.7% | 135 | 21.4% |
| Wigan | 330 | 380 | 7.8% | 50 | 15.2% |
| **Greater Manchester** | **3,995** | **4,875** | **100.0%** | **880** | **22.0%** |
| North West | 10,165 | 11,755 | - | 1,590 | 15.6% |
| London | 28,470 | 39,775 | - | 11,305 | 39.7% |
| Great Britain | 122,935 | 151,035 | - | 28,100 | 22.9% |

Source: Inter-Departmental Business Register (Data may not sum due to rounding and note caution in interpreting change figures as data is for a short time period)

4.11 Figure 11 shows that between 2010 and 2013, employment in GM's Digital Industries subsector grew by 12.3% (3,100 more jobs), faster than in London (9.7%) and Great Britain as a whole (7.4%).

4.12 Analysis at a district level shows employment concentrated in the south of the conurbation with the greatest proportions of employment located within Manchester, Salford, Trafford and Stockport. The city of Manchester has almost double the number of employees (9,700) compared with the district with the next largest number of employees, Stockport (4,400). This equates to a third of the total. Stockport makes up 15.5% of the total, followed by Trafford at 13.1% and Salford at 12%. The digital subsector in Stockport (3.6%), Manchester (2.8%), Salford (2.8%), Trafford (2.7%) and

Bury (2.4%) accounts for a greater proportion of employment within the district than seen at the GM (2.3%) and NW (2.1%) level. Stockport also has a greater proportion of employment than seen at the national level (3.0%).

4.13 Growth in employment was seen across seven of the ten districts between 2010 and 2013. Employment remained at the same level in Bolton and Tameside, whereas in Bury it fell by 500. The city of Manchester and Stockport saw the highest absolute growth in employment numbers, whereas Rochdale saw the highest relative growth between 2010 and 2013.

**Figure 11: Employment within Digital Industries, 2010 to 2013**

| | Employment | | | Change 2010 to 2013 | | Proportion of district employment (2013) |
|---|---|---|---|---|---|---|
| | 2010 | 2013 | 2013 (%) | No. | % | |
| Bolton | 1,600 | 1,600 | 5.7% | 0 | 0.0% | 1.5% |
| Bury | 2,100 | 1,600 | 5.7% | -500 | -23.8% | 2.4% |
| Manchester | 7,700 | 9,700 | 34.3% | 2,000 | 26.0% | 2.8% |
| Oldham | 800 | 900 | 3.2% | 100 | 12.5% | 1.2% |
| Rochdale | 900 | 1,200 | 4.2% | 300 | 33.3% | 1.7% |
| Salford | 3,300 | 3,400 | 12.0% | 100 | 3.0% | 2.8% |
| Stockport | 3,500 | 4,400 | 15.5% | 900 | 25.7% | 3.6% |
| Tameside | 800 | 800 | 2.8% | 0 | 0.0% | 1.2% |
| Trafford | 3,400 | 3,700 | 13.1% | 300 | 8.8% | 2.7% |
| Wigan | 1,000 | 1,100 | 3.9% | 100 | 10.0% | 1.1% |
| **Greater Manchester** | **25,200** | **28,300** | **100.0%** | **3,100** | **12.3%** | **2.3%** |
| North West | 58,300 | 65,400 | - | 7,100 | 12.2% | 2.1% |
| London | 196,000 | 215,100 | - | 19,100 | 9.7% | 4.5% |
| Great Britain | 779,200 | 836,700 | - | 57,500 | 7.4% | 3.0% |

Source: Business Register & Employment Survey (Data may not sum due to rounding and note caution in interpreting change figures as data is for a short time period)

## Creative Industries

4.14 There were 4,340 Creative Industries businesses in GM in 2014, comprising just over two fifths (43.5%) of the number in the North West. There were 26,100 people employed within the Creative Industries in GM in 2013, representing 44.6% of the sector's employment in the North West, and 3.3% nationally.

4.15 The location quotient – a measure of employment concentration within the local economy compared with the national average – suggests that Creative Industries overall are less concentrated within GM compared to nationally, but still higher than average for the region. Employment in Television Broadcasting is 1.6 times the national average, marking a level of specialism within GM (Salford in particular).

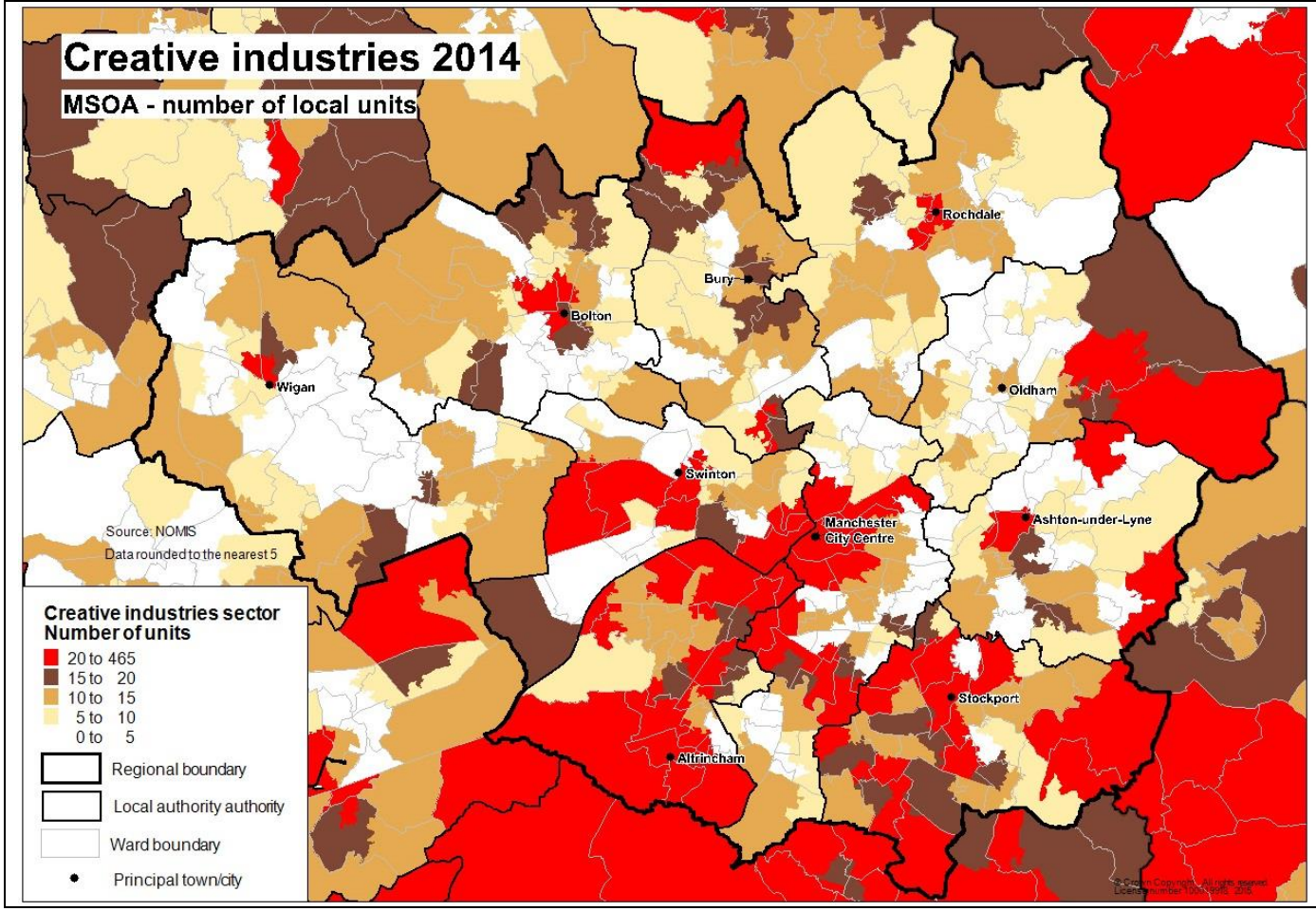
4.16 All other subsectors within Creative Industries fall behind the national average concentration. Creative, arts and entertainment activities (0.88) specialised design activities (0.97) and Photographic activities (0.96) each fall slightly behind, whereas Publishing activities (0.33) and Advertising and market research (0.77) are noticeably lower than the national average.

**Figure 12: Location quotient of Creative Industries, 2013**

| SIC | Description | LQ |
|---|---|---|
| 18 | Printing and reproduction of recorded media | 1.00 |
| 58 | Publishing activities | 0.33 |
| 59 | Motion picture, video and television programme production, sound recording and music publishing activities | 0.61 |
| 60 | Programming and broadcasting activities | 1.63 |
| 73 | Advertising and market research | 0.77 |
| 90 | Creative, arts and entertainment activities | 0.88 |
| 7111 | Architectural activities | 0.85 |
| 741 | Specialised design activities | 0.97 |
| 742 | Photographic activities | 0.96 |
| **All** | **Location Quotient for Creative Industries subsector** | **0.78** |

Source: Business Register & Employment Survey (Data may not sum due to rounding)

**Figure 13: Creative Industries businesses in Greater Manchester, 2014**




Source: Inter-Departmental Business Register

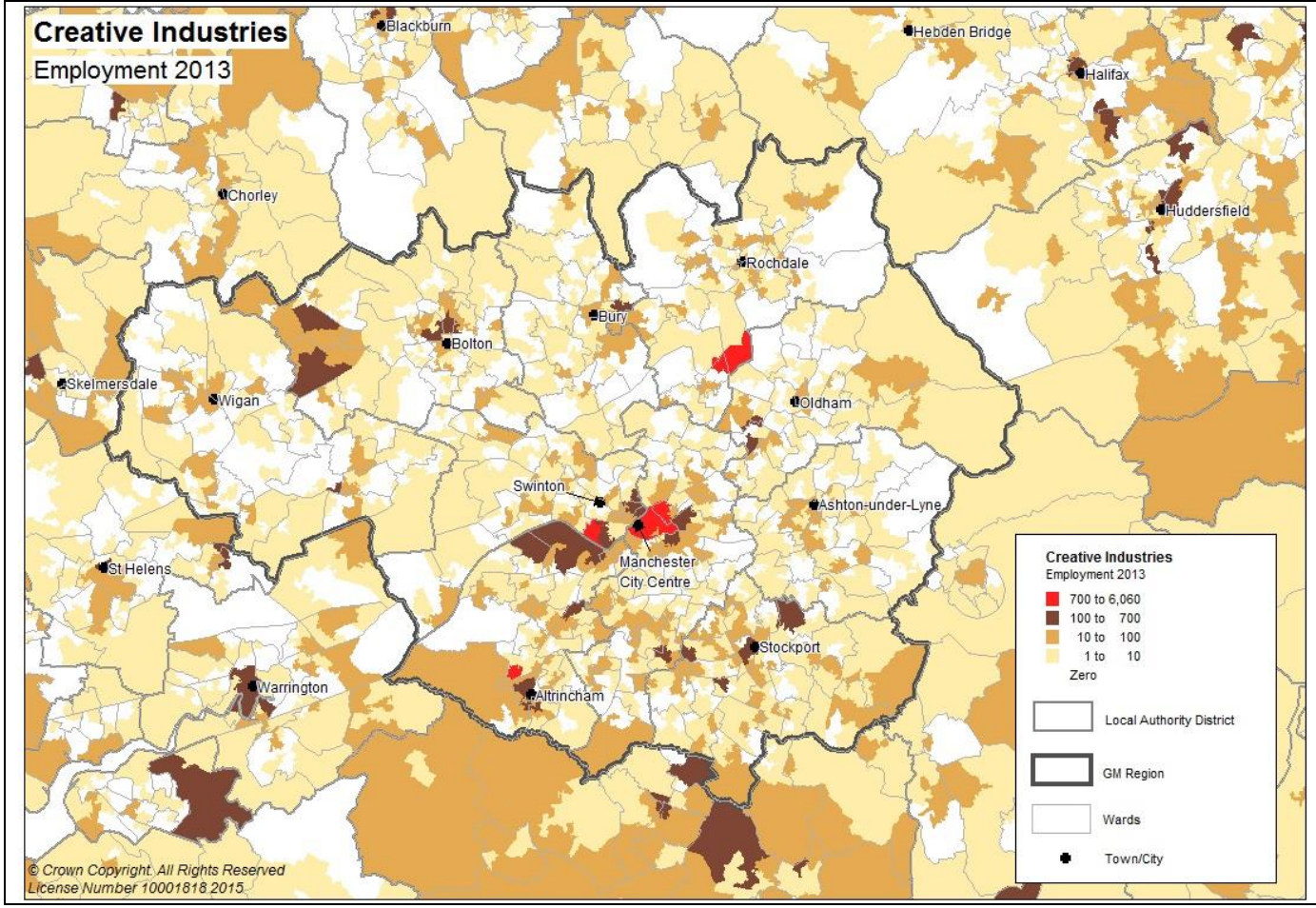
Figure 13 shows that there is a cluster of creative industries in the centre and south of the conurbation. The greatest concentration of businesses is found in the core extending from The Sharp Project and Space in the east through Media City to Trafford Park in the west.

Extending from this central core is a corridor to the southwest through Sale, Broadheath, Altrincham, Bowdon and Hale. There is a further corridor extending into Chorlton, Didsbury, Northenden, Heaton North, Reddish, Stockport Town Centre, south towards Cheadle and Bramhall and east towards Marple.

In addition, there are clusters around Worsley, Boothstown, Eccles and Swinton south and pockets of activity to the north of the conurbation around the town centres of Wigan, Bolton, Rochdale and Ashton.

Nearly 30% of creative businesses are located in the City of Manchester and over two thirds are located within the centre or south of the conurbation within the city of Manchester, Stockport, Trafford and Salford.

**Figure 14: Creative Industries employment in Greater Manchester, 2013**




Source: Business Register & Employment Survey

Figure 14 shows a clear concentration of employment in the Creative Industries within Manchester City Centre and Salford (MediaCityUK) through to Trafford Park as well as significant smaller clusters within Broadheath to the south and Castleton ward to the north of the conurbation.

There are however, as with the digital sector, pockets of employment particularly within a patchwork corridor to the south with concentrations in Altrincham, Didsbury East Bredbury, Stockport Town Centre, Bredbury and Woodley.

In addition, there are pockets of activity to the north of the conurbation particularly around the town centres of Bury (Chadderton and East) and Bolton (Crompton and Halliwell) as well as in Westhoughton.

4.17 Figure 15 shows that GM's growth rate in Creative Industries businesses between 2010 and 2014 was 13.5% (515 more businesses). This was a higher growth rate than that of the North West, and Great Britain as a whole, but lower than London which saw a 17.3% growth. The greatest rise was seen in the city of Manchester, with a 230 net increase in businesses. Nearly a third (29%) of creative businesses in GM were based in the city of Manchester in 2014. However, the greatest relative growth was seen in Wigan, where the sector grew by nearly a quarter, with 50 more businesses in 2014 compared with levels in 2010.

4.18 Analysis at a district level shows that with the exception of Rochdale, all the districts of GM saw an increase in the number of creative businesses between 2010 and 2014. Growth in the number of businesses was slowest in Tameside (2.5%). Stockport, despite hosting the second highest number of businesses in the sector saw a relatively modest 3.1% growth; this was still the equivalent of 20 new businesses. Both Salford and Manchester saw growth in the number of Creative businesses above 20% and collectively added 300 businesses to the total.

**Figure 15: Number of business units in Creative Industries, 2010 to 2014**

| | Business Units | | | Change 2010 to 2014 | |
|---|---|---|---|---|---|
| | 2010 | 2014 | 2014 (%) | No. | % |
| Bolton | 270 | 290 | 6.7% | 20 | 7.4% |
| Bury | 225 | 240 | 5.5% | 15 | 6.7% |
| Manchester | 1,035 | 1,265 | 29.1% | 230 | 22.2% |
| Oldham | 185 | 215 | 5.0% | 30 | 16.2% |
| Rochdale | 195 | 195 | 4.5% | 0 | 0.0% |
| Salford | 320 | 390 | 9.0% | 70 | 21.9% |
| Stockport | 635 | 655 | 15.1% | 20 | 3.1% |
| Tameside | 200 | 205 | 4.7% | 5 | 2.5% |
| Trafford | 550 | 625 | 14.4% | 75 | 13.6% |
| Wigan | 210 | 260 | 6.0% | 50 | 23.8% |
| **Greater Manchester** | **3,825** | **4,340** | **100.0%** | **515** | **13.5%** |
| North West | 9,105 | 9,980 | - | 875 | 9.6% |
| London | 43,005 | 50,455 | - | 7,450 | 17.3% |
| Great Britain | 127,010 | 141,345 | - | 14,335 | 11.3% |

Source: Inter-Departmental Business Register (Data may not sum due to rounding and note caution in interpreting change figures as data is for a short time period)

4.19 Figure 16 shows that employment in Creative Industries has grown significantly in GM between 2010 and 2013, with a net increase of 3,000 jobs, representing a 13% increase from 2010. Whilst employment growth in GM was not as high as the 15.7% growth seen in London over the same period (43,700 more jobs), it is significantly higher than that in Great Britain (2.0%).

4.20 Analysis at district level shows employment in the Creative Industries is concentrated in the city of Manchester, with 28% of employment in the district (7,400 people in 2013). However, unlike the trend in Digital Industries, there is less of a distinction between the

first and second ranking districts, with Salford making up a fifth of employment (5,300 people) on account of the major asset MediaCityUK.

4.21 Trafford is the third most important in terms of Creative Industries employment, comprising 15.3% of the total. Growth in employment was seen across five of the ten districts between 2010 and 2013. Salford saw the highest absolute and relative growth in employment numbers, followed by Bolton, Wigan, Rochdale, and Trafford. Bury, Stockport and Tameside saw no change in their employment figures for the sector.

4.22 Whilst still the largest in terms of employment contribution, total employment within the subsector fell within the city of Manchester by 1,300 between 2010 and 2013.This corresponds with the period when the BBC moved to MediaCityUK from Oxford Road.

4.23 The Creative Industries subsector in Salford (4.4%) and Trafford (2.9%) accounts for a greater proportion of employment within the district than seen at the national level (2.8%), with the subsector in Manchester (2.2%) and Stockport (2.3%) seeing a greater share than at the GM (2.2%) or North West (1.9%) level. London has a notably higher share of employment within the subsector as a proportion of overall employment (6.8%).

**Figure 16: Employment within Creative Industries, 2010 to 2013**

| | Employment | | | Change 2010 to 2013 | | Proportion of district employment (2013) |
|---|---|---|---|---|---|---|
| | 2010 | 2013 | 2013 (%) | No. | % | |
| Bolton | 1,200 | 1,600 | 6.1% | 400 | 33.3% | 1.5% |
| Bury | 800 | 800 | 3.1% | 0 | 0.0% | 1.2% |
| Manchester | 8,700 | 7,400 | 28.4% | -1,300 | -14.9% | 2.2% |
| Oldham | 1,500 | 1,200 | 4.6% | -300 | -20.0% | 1.6% |
| Rochdale | 1,200 | 1,500 | 5.7% | 300 | 25.0% | 2.1% |
| Salford | 2,100 | 5,300 | 20.3% | 3,200 | 152.4% | 4.4% |
| Stockport | 2,800 | 2,800 | 10.7% | 0 | 0.0% | 2.3% |
| Tameside | 600 | 600 | 2.3% | 0 | 0.0% | 0.9% |
| Trafford | 3,500 | 4,000 | 15.3% | 500 | 14.3% | 2.9% |
| Wigan | 700 | 900 | 3.4% | 200 | 28.6% | 0.9% |
| **Greater Manchester** | **23,100** | **26,100** | **100.0%** | **3,000** | **13.0%** | **2.2%** |
| North West | 51,900 | 58,500 | - | 6,600 | 12.7% | 1.9% |
| London | 279,000 | 322,700 | - | 43,700 | 15.7% | 6.8% |
| Great Britain | 765,600 | 780,800 | - | 15,200 | 2.0% | 2.8% |

Source: Business Register & Employment Survey (Data may not sum due to rounding and note caution in interpreting change figures as data is for a short time period)

# 5 Skills

5.1 Average productivity levels in GM's Digital and Creative Industries firms fall behind the UK average, and leading economic areas within the UK, particularly London. The ability to succeed in continuously driving improvements in productivity is highly dependent on access to raising skill levels – attracting and retaining the best talent that will help the sector grow.

5.2 The following analysis shows the current qualification profile for the resident workforce based on survey data for the North West of England and UK. Survey data on specific sectors, jobs and qualifications is not accurate for smaller areas. Therefore, the emphasis of this section is to look at the skills challenges – in particular, specific technical skill shortages and hard-to-fill vacancies – recorded by employers in GM in 2015/16.

## Current skills trends

**Figure 17: Highest qualification held by people working in Digital and Creative, 2015**

| Notional level of highest qualification | Digital Industries | | Creative Industries | |
|---|---|---|---|---|
| | NW | UK | NW | UK |
| Level 4+ | 59.0% | 66.5% | 53.9% | 63.0% |
| Level 3 | 15.3% | 13.3% | 15.3% | 13.8% |
| Trade Apprenticeships | 1.8% | 1.4% | 4.4% | 3.2% |
| Level 2 | 11.7% | 10.4% | 10.3% | 8.8% |
| Below Level 2 | 10.8% | 5.4% | 5.8% | 6.4% |
| Other Qualifications | 0.9% | 2.3% | 3.6% | 2.3% |
| No Qualifications | 0.6% | 0.6% | 6.7% | 2.5% |

Source: Quarterly Labour Force Survey, January-March 2015.

5.3 **Digital Industries:** The subsector in the North West is over 7% behind the national average in terms of the proportion of the workforce with Level 4 (undergraduate/graduate) qualifications. If the region were to match the UK average it would need almost 6,600 more graduate level employees. Given that GM accounts for over two-fifths (43.3%) of the sector's employment in the North West, this suggests at least 2,800 of these jobs could relate to GM.

5.4 **Creative Industries:** The subsector in the North West is over 9 percentage points behind the national average in terms of the proportion of the workforce with Level 4 (undergraduate / graduate) qualifications. If the region were to match the UK average it would need almost 7,500 more graduate level employees. Given that GM accounts for over two-fifths (44.6%) of the sector's employment in the North West, this suggests at least 3,300 of these jobs could relate to GM. Interestingly, just under 7% of workers in the Creative Industries in the region have no qualifications, more than double the UK average for the sector.

5.5 New Economy has undertaken analysis of the supply and demand relationship for Creative and Digital related apprenticeships and suggests that the growth of apprenticeships in this area is very encouraging and aligns with high sector demand.

Supply at advanced level looks reasonably satisfactory relative to demand, but there is scope for increasing the numbers of higher level apprenticeships (there were just 95 in 2014/15).

## Skills challenges

**Figure 18: Skills challenges in the Digital and Creative sectors**

| Challenge | Explanation |
|---|---|
| Skills shortages arising from fast pace of change across Digital and Creative Industries | • Rapid pace of technological change is driving demand for new skills and knowledge. Employers reporting higher levels of skills shortage vacancies than the average for other sectors in the economy<br>• Half of the top ten specialist skills requirements in advertised all job vacancies in GM for the year to date were digital-related, including: JavaScript, SQL and SQL Service, and Microsoft C#<br>• Increasingly employers are demanding not just technical skills but also highly developed generic competencies in business acumen and softer skills<br>• Technological trends will also call for individuals with specialised knowledge in cyber security, mobile and cloud computing, big data and social media<br>• Digital sector is competing with other sectors for digital skills |
| Skills gaps and workforce development holding back firms from reaching their full potential | • Surveys suggest that Digital Industries skill gaps are more acute than those expressed, on average, in other sectors. Employers are clear that these skills gaps are holding back firms' full growth potential.<br>• Prevalence of micro-size businesses and freelancers leads to difficulty in engagement with education and training sectors, making it difficult to develop an appropriate training and skills system to meet demand |
| Skills and learning provision | • Digital skills are critical for all, not just those in the digital sector<br>• Strong learner demand not translating into giving employers the workforce they need<br>• Pace of technological change makes it difficult to devise and maintain up-to-date curriculum and a need to support further employer engagement in content<br>• The digital sector requires specific skills and knowledge not always linked to qualifications<br>• The structure of the sector makes skills development challenging<br>• In house training/CPD more critical in this sector<br>• Lack of gender diversity in the sector<br>• Many good initiatives in GM but there is a lack of coherence and strategic framework |

**5.6** The House of Lords Select Committee on Digital Skills recently highlighted the transformation taking place globally as a result of profound technological changes and the effect this is having on the UK economy.[13] The Select Committee highlighted that the impact of this new digital technology is all encompassing from everyday activities such as shopping, banking and delivery of public services, through to cutting edge companies designing the products and services increasingly being relied upon.

[13] House of Lords Select Committee on Digital Skills – Report of Session 2014-15 Make or Break – The UK's Digital Future

5.7 Digital skills are important for everyone, as a key life-skill alongside numeracy and literacy, or at a higher level to drive the productivity of the UK forward through the development of the digital and creative sector, and indeed more broadly across other sectors where digital skills are critical.

5.8 The UK Digital Skills Taskforce 2014 highlights that "it is not just the technology sector which needs digital skills, but all sectors' and the Tech Partnership highlights the use of digital technologies as almost universal among UK businesses. Use of strategic technologies is growing, and more tech specialists are entering the workforce. [14,15]

5.9 **Skill shortages:** Research by the UK Commission for Employment and Skills (UKCES)[16] highlights that the agile nature of the Digital and Creative sector, with new technology being created all the time, makes it hard for employers to recruit workers with the skills they need to help their businesses grow. According to UKCES, skills shortage vacancies are more common within the Digital Industries subsector than the average across all sectors of the economy in the UK. Employers are also concerned that graduates are leaving university without the latest technical skills and softer skills required in the workplace. A report by Manchester Digital[17] found that over at third of member companies had had to turn away work as a result of being unable to recruit the right talent with a quarter being for contracts of £50,000 or more.

5.10 Technation 2016 reports that 40% of digital entrepreneurs say that they face challenges finding skilled digital workers. The main Digital Industries skills shortages identified include advanced software skills,[18] and a greater mix of skills such as business acumen combined with soft skills, interpersonal skills and leadership. The requirement for existing staff and new recruits to have a breadth of skill competencies to go with the depth of specific technical knowledge is a recurring finding.[19]

5.11 **Skill gaps and workforce development:** The UKCES survey also highlights that the sector is limited from reaching its full potential by staff not being fully proficient in their roles according to the employer's needs. Around 5% of employees in the Digital and Creative sector are not fully proficient in their role relative to the national average across all sectors. However, skills gaps are slightly higher than the national average in the Digital Industries subsector (7% of all employees). The main reason given for this is how challenging it is to ensure that all staff are able to keep up with the latest software.

5.12 Furthermore, employers in the Digital Industries subsector were more likely than the average for all sectors to be concerned that degree content did not fully reflect the skills required to work in their business.[20] Just under a third (29%) of recruits from full-time

[14] UK Digital Skills Taskforce (2014): Digital Skills for Tomorrow's World

[15] Tech City NESTA, Technation (2016): Transforming UK

[16] UK Commission for Employment & Skills (2015): Sector Insights: Skills and Performance Challenges in the Digital and Creative Sector.

[17] Manchester Digital Skills Audit Report 2015

[18] Ibid

[19] Technation (2016): Transforming UK Industries

[20] UKCES (2015): Sector Insights: Skills and Performance Challenges in the Digital and Creative Sector.

education taken to fill junior technical/specialist positions are graduates from disciplines not relating to IT.[21]

5.13 **Employer and skills demand in GM:** Substantial recruitment of graduates is expected particularly in the Digital subsector in GM. Technological trends will call for individuals with specialised knowledge in cyber security, mobile and cloud computing, big data, and social media, but most workers across the sector will need some degree of knowledge of these areas of work. Demographic and economic factors will also shape skill needs. An ageing population will also create new opportunities in areas such as Health Innovation.

5.14 Recruitment agency advertisements provide a good indication of skills demand and shortages. According to Labour Insight,[22] digital-related occupations are one of the highest areas of demand for, employers in GM. The highest number of job postings between January to September 2015 (9,323 vacancies) was for 'programmers and software development professionals,' followed by 'web design and development professionals' with 4,500 job postings; and 'IT business analysts, architects and systems designers' with 3,500 vacancies.

5.15 Half of the **top ten specialist skills requirements in advertised all job vacancies** in GM for the year to date were also digital-related, including:

- JavaScript (cited in 8,500 job vacancies)
- Standard Query Language (6,300)
- Microsoft C# (5,000)

5.16 The top five specialist skills in demand for **programmers and software developers** are:

- Microsoft C# (cited in 2,750 vacancies)
- SQL (2,399)
- NET Programming (2,204)
- JavaScript (2,204)
- C++ (2,129)

5.17 The top five specialist skills in demand for **web design and development professionals** are:

- JavaScript (cited in 2,357 vacancies)
- Net Programming (1,678)
- Web Site Development (1,579)
- Microsoft C# (1,505)
- jQuery (1,407)

[21] The Tech Partnership (2015): Employer Insights: Skills Survey 2015.

[22] Labour Insight is an online database of live job postings which allows analysis of real-time job vacancy data and to identify which occupations and types of skills are most in demand by local employers. Analysis refers to period 1 January 2015 to 14 September 2015

5.18 The top five specialist skills in demand for **IT business analysts, architects and systems designers** are:

- SQL (cited in 500 vacancies)
- Citrix (327)
- SQL Server (318)
- Information Technology Industry Experience (317)
- SAP (309).

5.19 Labour Insight also allows for analysis of vacancies by clusters of skills. Excluding 'Common Skills' the ICT cluster and its 'Programming, Development and Engineering' sub-cluster had the highest number of vacancies (17,200).

5.20 A number of other ICT 'sub-clusters' also feature in the top ten skill-needs sub-clusters, including:

- 'Web Design and Technologies' (12,100)
- 'Databases and Data Warehousing' (11,900)
- 'Business Intelligence' (7,900)

5.21 LinkedIn undertook research in GM in August 2015[23] analysing its 614,000 members in the region. This research showed that those with tech skills such as social media, data mining, analytical problem solving, featured highly in those most likely to find employment. This is further refined for technology skills which reinforces the message that individuals are hired not only for the level of qualification but also on their specific programme development skills such as HTML, MVC, PHP, JAVA and SQL.

5.22 LinkedIn also found that in the last 12 months over a third of those starting a new job in GM had social media or software skills. Furthermore, technology and media skills were the types of skill moving into the region and that there is even a trend of Manchester gaining from London in terms of digital marketing, user interface design, and SAP ERP systems.

5.23 **Skills and learning provision:** There is a considerable amount of skills provision being delivered through schools, colleges, training providers and the universities across GM. However, the complex nature of digital and creative skills means that there is not always a direct link between the content of learning and employers' skill needs. Key challenges remain in respect to:

- Digital skills are critical for all, not just those in the digital sector
- Skills gaps in the current workforce
- Strong learner demand not translating into giving employers the workforce that they need
- Difficulty ensuring that the curriculum keeps pace with technological change
- Digital sector requiring skills and knowledge not always linked to qualifications

[23] LinkedIn – Insights for the Greater Manchester Combined Authority – Aug 2015

- Structure of sector making skills development challenging
- Sector growth leading to future skills shortages
- Digital sector has to compete with other sectors for digital skills
- Lack of gender diversity in the sector
- Many good initiatives in GM but there is a lack of coherence and strategic framework

**5.24** The following provides more detail on the challenges of ensuring that GM has the right skills for growth.

## Higher Education (HE)

**5.25** Given the high demand for graduate labour in the Digital and Creative Industries, Higher Education has an important role to play in ensuring that employers have the requisite skills to support growth. GM benefits from being the home to the University of Manchester, Manchester Metropolitan University, University of Salford, University of Bolton, the RNCM, and regional Open University.

**5.26** Particular sector assets linked to institutions include:

- MediaCityUK – fully integrated with education infrastructure and provision, including: The University of Salford and the University Technical College
- Manchester University School of Computer Science
- Manchester Metropolitan University's digital hub, The Shed
- Creative and digital specialism at the University of Bolton

**5.27** Data from the Higher Education Statistics Authority (HESA) shows that there were 5,000 students enrolled in various creative, digital and ICT courses across GM's higher education institutions in 2013/14.[24] At undergraduate level there were 2,555 students of computer science,[25] and most of these were in computer science (1860) itself. However, there were also significant numbers of students undertaking first degrees in information systems (235), software engineering (175) and games (195).

**5.28** Interestingly, MMU is the only institution in GM that features among the top 20 largest suppliers by volume of computer science graduates in the country. GM also had approximately 485 post graduates in 2013/14, predominantly in computer science and information systems disciplines.

**5.29** Despite the rising supply of graduates in computer related disciplines, evidence from HESA graduate destination data,[26] covering the UK in 2013 highlighted that unemployment rates amongst computer science graduates is the highest amongst all

[24] HESA (2013/14): Subject areas: Computer Sciences, Architectural Building and Planning, Mass Communications and Documentation, and Creative Arts and Design.
[25] Ibid
[26] Higher Education Statistics Agency (HESA), Longitudinal Survey of Destinations of Leavers of Higher Education (DLHE).

graduates (14% of computing graduates were unemployed six months after graduation, compared with an average of 9% across all subjects).

5.30 Further research by NCUB[27] suggests that the reasons for this, despite rising demand for labour, are complex e.g. graduates lacking 'employability' skills such as communication, time management and business skills. The research also highlights that those courses involving work experience, or sandwich courses, fare considerably better than those which are purely academic.

## Further Education (FE)

5.31 There are ten FE colleges and eleven Sixth Form Colleges, a number of private training providers and some local authorities in the conurbation with substantial delivery of digital related courses.

5.32 In 2013/14 there were 24,784 FE starts in digital subjects (a 19% reduction from 2012/13)[28] and 30,602 starts in creative subjects at institutions located in GM. The reduction in digital subjects is predominantly at Level 2 and above, whereas entry level ICT/digital has seen a significant increase. Approximately 82% of starts are in the provision of basic digital skills and just 18% (around 4,500 starts) were at Level 3 and above. The reasons for the reduction are unclear. It is possible that this is due to cuts in the Adult Skills Budget, and a shift of emphasis to providing basic IT training overall.

## Apprenticeships

5.33 Considerable work has been undertaken over the last eighteen months to develop and promote Apprenticeships within the digital sector in GM. There were 1199 starts on Apprenticeship frameworks relevant to the Digital Sector in GM during 2014/15. This represents an increase of 22% (220) on the numbers for 2013/14, but is still lower than might be expected given the overall numbers employed in the sector.

5.34 The majority of apprenticeships are in IT Application specialists and IT Software Web and Telecoms professionals' roles. There are also a smaller but growing number of Social Media and Digital Marketing apprentices.

5.35 It is notable that in comparison with other sectors, a significant proportion of the Apprenticeships are at advanced and higher level, possibly reflecting the higher skill levels required in the industry. Almost three-quarters (74%) were at advanced level and 7% at higher lever in 2014/15. It is also notable that the majority of learners are under 25.

5.36 In GM, City Deal capacity building funding has been used to support the roll out of Higher Apprenticeships in digital industries. In addition, a Degree Apprenticeship for Digital and Technology Solutions Professionals was launched nationally in 2015 offering students a degree directly linked to industry which does not attract fees for the individual. In GM, MMU is already delivered this course to over 60 undergraduates.

[27] The National Centre for Universities and Business (2014)
[28] Skills Funding Agency (2014/15): Data Cube

5.37 A new set of Apprenticeship standards, 'Trailblazers', designed by employers are currently being developed for completion by 2017. The standards already include Network Engineers and Software Developers with standards for Infrastructure Technicians, Digital Marketers, Software Tests, Cyber Intrusion Analysis, Data Analysts and Unified Communications Trouble-shooters in the pipeline. The frameworks are all at Level 3 and above, reflecting the need of the industry for higher level skills.

## Careers – Education, Information, Advice and Guidance

5.38 Whilst learner demand for courses and interest in careers appears to be less of a challenge than in other sectors, anecdotal evidence from employers in GM suggests that there is a lack of understanding of what a career in digital industries entails.

5.39 Schools have an important role not only in providing education in digital skills and promoting careers in the digital sector. However, anecdotal evidence has identified the need for better advice and guidance at an early age; and also challenges to the content of the curriculum.

5.40 In 2014 the Government introduced the National Curriculum Programme of Study for Computing.[29] This was introduced to equip every young person with the skills needed to ensure they are digitally literate (e.g. coding, data manipulation etc.), rather than focusing on specific applications. It is hoped that this will contribute significantly to digital literacy and develop interest in the application of technology in future careers.

5.41 Growing student participation in science, technology, engineering, arts, and mathematics will also help to contribute to a pipeline of young people with the learning and skills that will support both the sector's future growth and indeed the growth of the whole economy given the wider requirement for digital skills across all sectors.

[29] DofE Computing – Programmes of Study for Key Stages 1-4 February 2013, introduced September 2014

# 6 Key Assets

6.1 The following section highlights relevant assets for the Digital and Creative Industries sector, shown geographically in figure 20 below. Sector assets have been identified based on their role in supporting jobs and/or GVA growth for GM now and in the future. These include business clusters and industrial assets and research institutions. The assets have been identified based upon the position that they hold in terms of training and research excellence, as well the scale of the economic contribution that they make both in terms of GVA output and employment. These assets have the ability to accelerate the sector's future growth and to build and project critical mass for the sector in both the North of England and UK as a whole.

6.2 The list of assets is not intended to be definitive and it should be noted that wider work has been undertaken as part of the SIA of GM and East Cheshire to explore collective Digital assets for the functional geography in more detail. Digital is a key enabling technology for other sectors, with particular digital related assets relating to Health & Social Care and Health Innovation and the Advanced Manufacturing (incl Advanced Materials) having been identified. This section should therefore be read in conjunction with these Deep Dives as well as the Hospitality and Tourism Deep Dive which highlights cultural assets that are relevant but do not directly relate to the sector focus in this section. This section also contains a selection of travel-to-work maps for areas that contain one of several key assets.

**Figure 19: Greater Manchester – Key Digital and Creative Industries related assets**

- MediacityUK, BBC and ITV
- Dock10/The Studios
- Soundstages at the Pie Factory
- The Landing
- University of Salford @MediaCityUK and new University Technical College
- University of Manchester School of Computer Science and University of Manchester Data Science Institute
- Centre for Health Informatics
- Manchester Science Partnerships
- CityVerve
- The Sharp Project
- North Campus Incubator
- Space Project (Gorton) with plans to expand
- The Northern Quarter
- Manchester Metropolitan University Digital Innovation (The Shed)

6.3 Figure 20 shows the Digital and Creative Sector assets in Greater Manchester and Figure 21 and Figure 22 illustrate the reach of the Travel to Work area for some of these assets.

**Figure 20: Digital and Creative assets in Greater Manchester**

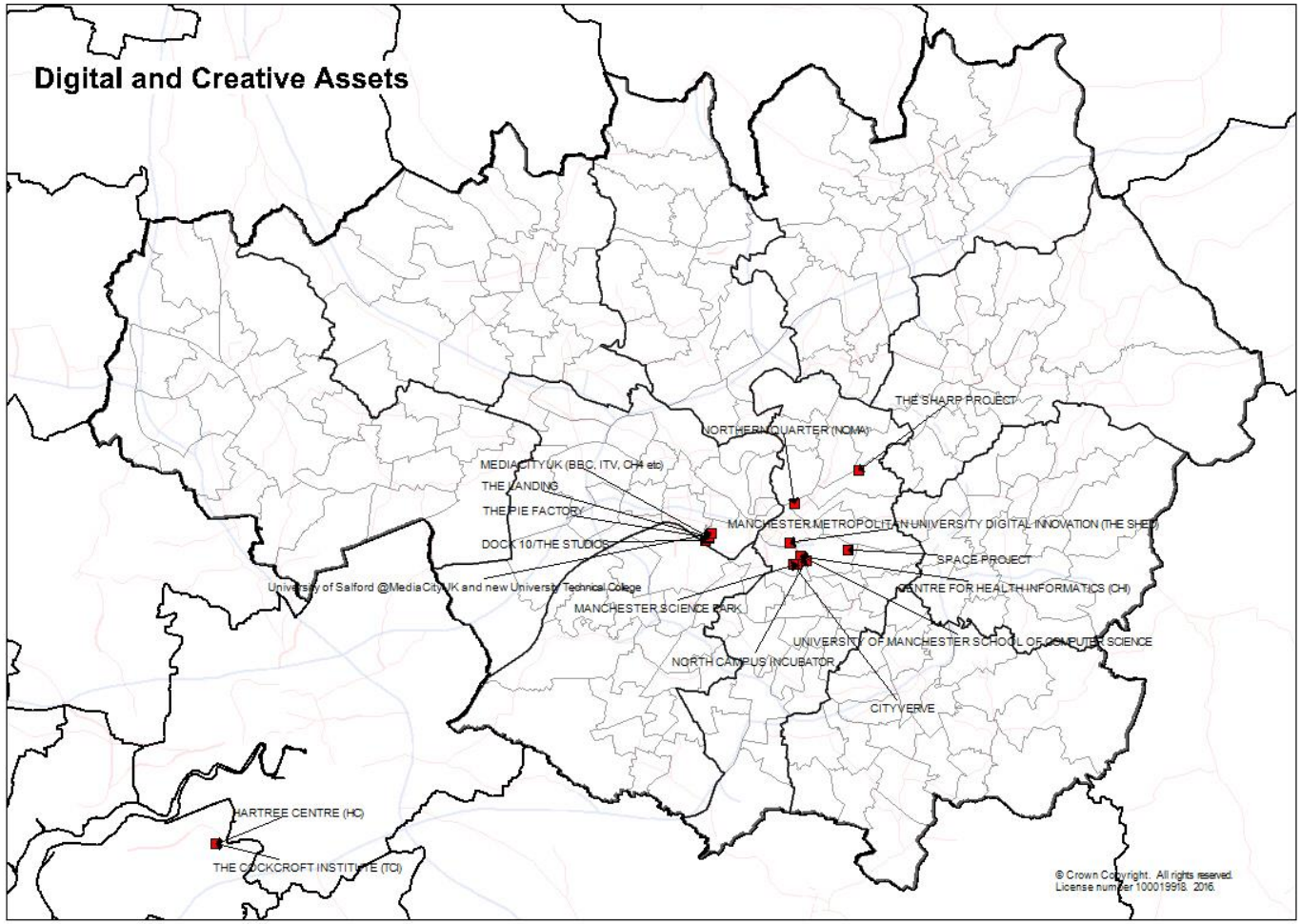



Figure 20 shows that most of GM's key Digital and Creative assets are located within central/east Manchester, along Corridor Manchester and Salford Quays, though there are supporting assets seen more widely. There are significant concentrations of both business and employment aligning to these areas, but smaller significant pockets are also found more widely across the conurbation particularly to the south of GM. The rising importance of the sector within GM is reflected in developments incl. MediaCityUK at Salford Quays, the Sharp Project and SPACE in Gorton. Geographical proximity and cooperation between these key sites is enabling collaboration and cross-fertilisation as well as strong, industry-led education for trainees and helping to improve the productivity of these assets. The strength of Corridor Manchester's R&D function is helping to broaden the focus of digital businesses beyond media and creative into other areas of the economy, esp. in the fields of health innovation, advanced materials and manufacturing where GM has considerable strengths. Beyond this, it is evident that the digital growth corridor more immediately extends further to Warrington & Halton with key assets such as the Hartree Centre housing the UK's most powerful super computer and the Cockcroft Institute benefiting the Digital and Creative sector, as well as Jodrell Bank (international HQ of the Square Kilometre Array).

**Figure 21: Travel to work map for MediaCityUK**

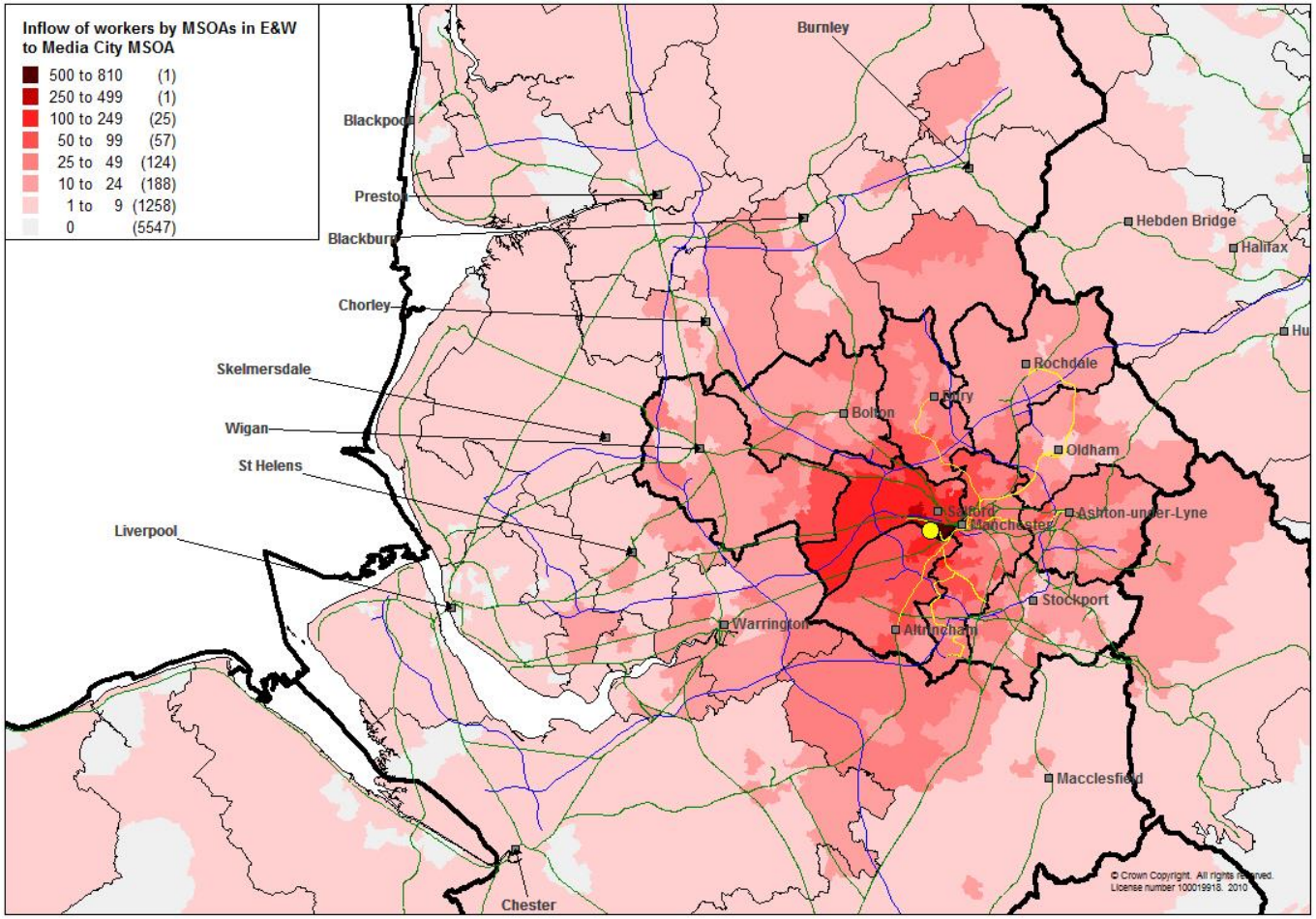



Figure 21 shows the Travel to Work Area (TTWA) for MediaCityUK. It illustrates the pan-northern significance of the asset, as workers travel well beyond the boundaries of GM to work within MediaCityUK.

There are significant concentrations to the south of the conurbation e.g. in Warrington, Halton and Macclesfield, but also north to Blackburn and beyond Burnley. More widely there are evidently linkages out to Liverpool, Leeds and wider Cheshire & Warrington.

However, it should be noted that the data used to map TTWA is taken from the 2011 census. Much activity transferred to MediaCity post 2011 and will not be captured, suggesting that the map underestimates the true significance and reach of MediaCityUK.

Source: ONS Census (2011) Travel to Work – Inflow of Workers to the Mid-Super Output area in which the asset is based

**Figure 22: Travel to work map for The Sharp Project**

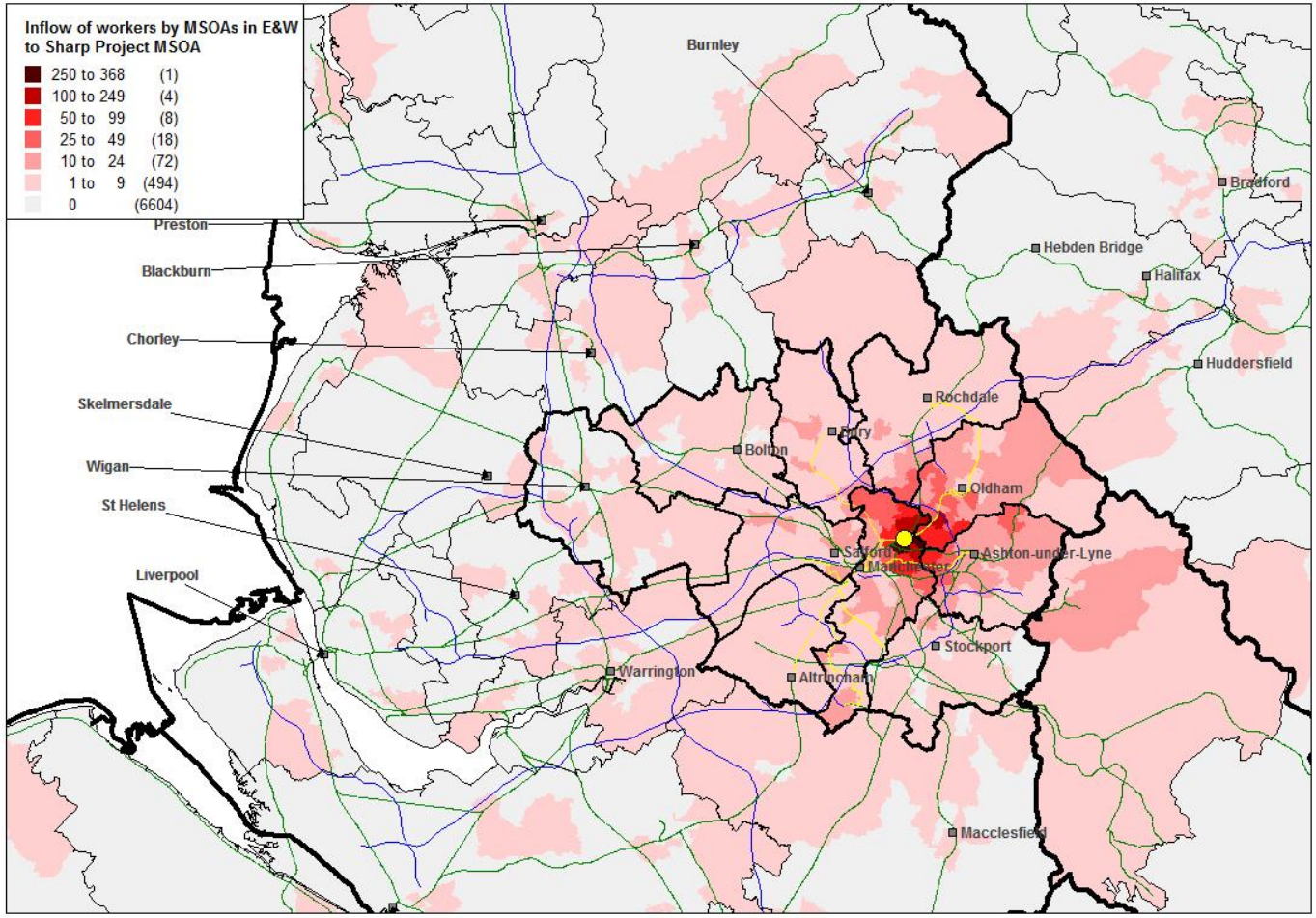



Figure 22 shows the Travel to Work Area for the Sharp Project. Whilst the reach of the Sharp Project is clearly not as large as MediaCityUK, it evidently has significance beyond the boundaries of GM and there is a particular concentration of activity over to the east and south of the conurbation and beyond out to areas including Glossop, High Peak and Macclesfield.

Source: ONS Census (2011) Travel to Work – Inflow of Workers to the Mid-Super Output area in which the asset is based

6.4 **MediaCityUK:** The national importance of both creative and digital sectors has already been supported by the development of MediaCityUK at Salford Quays, where one in seven of the BBC's staff work, with over 1,000 specialising in digital applications. Research undertaken by KPMG to assess the role of the BBC in supporting economic growth estimated that the BBC's activities in the North West (predominantly driven by the Salford site) contributed a total of £277 million to UK Gross Value Added (GVA) in FY2014/15.[30] The presence of ITV and Channel 4 have enhanced its role as a genuine cluster and pan northern asset and the leading creative, media and digital centre outside of London.

6.5 A growth assessment recently undertaken by Ekosgen and Arup suggested that over the next 25 years, over 18,500 jobs could be created at MediaCityUK/Salford Quays based on a demand and supply side growth assessment. Whilst this will likely be in a range of sectors including BFPS, increasingly specialisation is likely in particular within the digital and creative sectors. This includes the recent announcement of £1bn investment in MediaCityUK to include more TV studio and production space as well as shops, offices, a 330-bed hotel and over 1,400 new homes will only further enhance this critical asset.

6.6 MediaCityUK is a joint venture between Peel Media and Legal and General Capital. It is home to SIS Betting and SIS LIVE as well as The University of Salford, a University Technical College (Creative and Digital Industries, Entrepreurship), dock10 and over 250 businesses forming the largest purpose-built media location in Europe. The Greenhouse and The Landing act as studio/incubator spaces for smaller start-up companies. Organisations with significant bases at MediaCityUK include:

- **BBC:** Around 2,600 staff work in twenty-six departments at MediaCityUK. It's a centre for digital technology, home to BBCiPlayer and some of the BBC's biggest apps and digital tools as well as home of BBC Connected Studios – the BBC's digital R&D arm. Through its supply chain the BBC contributes to employment in the North West and UK with estimated total indirect and induced employment of 3,778. It is estimated that the BBC's activities in the North West (predominantly driven by the MedicaCityUK site) contributed a total of £277m to UK Gross Value Added (GVA) in 2014/15 (£137m of indirect GVA for the BBC's Tier 1 suppliers, £80m of indirect GVA in the wider supply chain; and £59m of induced GVA).
- **ITV:** The Orange Tower development is home to over 500 staff. MediaCityUK is also home to Coronation Street, which is produced from a state-of-the-art production centre based in a 7.7 acre site next to the Imperial War Museum.
- **SIS Betting** and **SIS LIVE:** Operating in the broadcast, gaming and television industry, SIS Betting and SIS LIVE's MediaCityUK based teleport is the largest in the north of the UK and connects MediaCityUK to the global broadcast market.

[30] http://downloads.bbc.co.uk/bbctrust/assets/files/pdf/about/how_we_govern/charter_review/annex_b_market_impact.pdf

6.7 **dock10/The Studios:** The Studios at MediaCityUK are owned by Peel and operated by dock10. dock10 delivers studio, post production and content management services, with seven HD studios, two audio studios (including one for the BBC Philharmonic), post-production facilities and cloud media management services and advanced connectivity options.

6.8 **Soundstages at the Pie Factory:** The SoundStages at MediaCityUK are owned by Peel and based in The Pie Factory. Facilities include: three soundproof stages (3,000/5,000/6,800 sq. ft. in size); make-up rooms, green rooms, workshops and production offices.

6.9 **The Landing:** The Landing gives digital SMEs and micro-businesses a place to work alongside large media and technology organisations. It combines studio and lab services with managed workspace, housing a post-production hub and the region's only usability rooms for testing and analysing games and interactive technologies, as well as the UK's only digital workflow centre.

6.10 **University of Salford @MediaCityUK:** Over 30 undergraduate and postgraduate courses are taught at MediaCityUK. In addition, a portfolio of business services specifically for the creative and digital sectors is provided. Services and facilities include the Digital performance Lab and "Egg" suite experimental performance/lecture and digital event space.

6.11 **The University of Manchester School of Computer Science and Data Science Institute:** Over 5,000 students are enrolled at the School of Computer Science and research is undertaken into a range of areas including Advanced Interface / Processor Technologies through to Bio-health informatics, software systems and text mining with major strengths in 'Big Data', artificial intelligence and novel computer architectures.

6.12 Building on these strengths the University of Manchester's Data Science Institute brings together over 250 researchers in 'Big Data' from across the University. The University of Manchester also brings together strengths in cyber security in recognition of the growth in the area and major strengths and opportunities with many local companies in GM.

6.13 **Centre for Health Informatics:** The Centre for Health Informatics (CHI) at The University of Manchester hosts the MRC Health eResearch Centre and is dedicated to health informatics research to advance data-intensive health science and care. This provides a centre of excellence for North England and produces informatics research for public health benefit across a number of methodological disciplines. The CHI runs a portfolio of research including some 20 projects/programmes worth over £40m in total.

6.14 **Manchester Science Partnerships:** Manchester Science Partnerships (MSP) is home to over 300 companies operating in IT infrastructure, cloud hosting and data as well as home to an internet exchange. MSP supports the growth of companies across the life sciences, ICT, industrial technology, advanced engineering and digital creative sectors.

6.15 MSP hosts Hitachi's European branch of Hitachi's Global Centre for Innovative Analytics at the **European Big Data Lab**.

6.16 The campus is the HQ of Innovate UK's **CityVerve** Internet of Things City Demonstrator (aiming to demonstrate applications of the Internet of Things technologies in four key smart city areas: health and social care, transport, energy and environment) along with Cisco's MI-IDEA innovation centre.

6.17 **The Sharp Project (East Manchester):** The Sharp Project is home to over 60 digital entrepreneurs and production companies specialising in digital content production, digital media and TV and film production. It is based in a 200,000 sq. ft. refurbished warehouse previously occupied by electronics company Sharp, offering flexible office, production and event space for start-up companies and smaller businesses.

6.18 **North Campus Incubator:** North Campus incubator is located in The University of Manchester's city campus and accommodates technology and digital companies established by The University of Manchester. It actively seeks to support technology start-up companies from across the North West that would benefit from close proximity to University research laboratories and knowledge base. It also provides technology commercialisation services.

6.19 **The Space Project (Gorton):** The 55,000 sq. ft. Space Project is a new TV production complex for the North of England. The facility for large scale TV & film production has five acoustically treated stages, prop storage facilities, workshops and production facilities. Plans are under consideration for expansion of the Space Project.

6.20 **Northern Quarter:** The Northern Quarter houses over 150 digital and creative companies, including Madlab, and SpacePortX. The vibrant culture of the area has been key in facilitating the clustering of small companies without there necessarily being a "big" anchor tenant, though the Co-op is located at the edge of this district.

6.21 **Manchester Metropolitan University Digital Innovation (The Shed) and Creative Industries Knowledge Cluster:** Situated in a refurbished engineering site "The Shed", Digital Innovation brings together start-up businesses, digital research and teaching. Digital Innovation partners Manchester Metropolitan University's business incubation unit, Innospace is also in the site. The joint project is a one-stop shop for research, business growth and education to drive the digital economy.

6.22 In addition, Manchester Metropolitan University School of Computing, Mathematics and Digital Technology provides CPD and bespoke training to Digital and Creative businesses alongside regular Consultancy, Knowledge Transfer Partnerships, Graduate Placements and Student Projects.

## Cultural Assets

6.23 Significant cultural investments such as HOME, with a large number of smaller investments to support grass roots culture and creative industries will help develop the sector, as well as adding to the GM creative and cultural offer. Opportunities and threats for other major cultural assets are covered in the Tourism section.

6.24 *See Hospitality, Tourism and Sport deep dive for key creative urban assets: The Bridgewater Hall, The Lowry, and Home Manchester, Bolton Museum and Rugby League at Wigan and Salford.*

6.25 *See Advanced Manufacturing deep dive for other digital assets based at Sci-tech Daresbury – The Hartree Centre (one of the world's most powerful super computing and data analysis infrastructures, and a lead in the Big Data revolution) and Virtual Engineering Centre*

6.26 *See Construction sector deep dive for other digital assets relating to Smart Cities – CityVerve, Triangulum*

6.27 *See Health & Social Care and Health Innovation deep dive for other digital assets relating to Health – Centre for Health Informatics,*

# 7 Growth Potential

## Forecasts for Growth

7.1 A number of economic scenarios have been developed to assess the growth potential of the sector in GM over the next twenty years. The baseline forecast for GM sets out the likely growth pattern based on a continuation of past trends and is derived from the Greater Manchester Forecasting Model (GMFM).[31] It is a 'policy neutral' forecast as it assumes that policy will be as effective in the future as it has been in the past. The latest GMFM baseline (GMFM 2015) is more pessimistic than the previous iteration of GMFM, reflecting a weaker UK growth profile even before the result of the EU referendum. It sees GM grow at a faster rate than the NW economy at 2.3% year on year, which is in line with the UK average.

7.2 To inform the development of the GMSF, an updated Accelerated Growth Scenario (AGS-2015) has been developed based upon improved sector growth performance alongside higher population growth. This scenario is predicated upon GM playing a leading role in the development of the Northern Powerhouse and achieving the ambitions laid out by the UK Government within its NW Long Term Economic Plan.[32]

7.3 Jobs in the Digital and Creative sector increased by 11,200 in GM over the last two decades, which equates to growth of 0.9% per annum. GVA growth over the period was strong at 4.0% growth per annum, corresponding to £2bn higher in 2015 than the 1995 level.

7.4 The baseline forecast for GM suggests an extra 15,100 jobs by 2035, or a growth rate of 1.0% p.a. This equates to an additional £3.3bn in the economy each year by 2035. The central Accelerated Growth Scenario (AGS 2015) suggests that the number of additional jobs could be higher, growing by 18,700 employees (1.2% p.a.) from 2015 to 2035, adding a further £3.7bn GVA in GM's economy by 2035.

**Figure 23: Digital and Creative Industries - Baseline and Accelerated Growth Forecast**

| | Net increase 1994 to 2015 | | GMFM Baseline 2015 to 2035 | | AGS- SNPP 2015 to 2035 | |
|---|---|---|---|---|---|---|
| | Difference | % CAGR | Difference | % CAGR | Difference | % CAGR |
| **Jobs** | 11,100 | 0.9 | 15,100 | 1.0 | 18.700 | 1.2 |
| **GVA** | £2.0bn | 4.0 | £3.3bn | 3.3 | £3.7bn | 3.6 |

Source: Oxford Economics.

## Opportunities

7.5 Digital technology is disrupting traditional industries across the whole economy, creating new ways of working and thus opportunities across the wider economy. Set against this backcloth, InnovateUK (previously Technology Strategy Board) identified the following

[31] Oxford Economics

[32] UK Government (2015): Long Term Economic Plan for the North West

three key changes that will significantly affect the Digital and Creative Industries at a UK wide scale[33]:

- **Convergence:** The integration of different media platforms presents challenges for media and entertainment industries. Social networks and cross-platform production create increasing opportunities for new business models.
- **Capturing Value and Managing Transactions:** Products such as music, film or journalism can now be accessed for free online. This obviously presents a financial challenge for the sector but does also present opportunities with new business models. Examples of successful adaptations include Spotify, Netflix and The Financial Times, for which subscriptions to an online media service have been able to produce strong revenues.
- **New Approaches to Data:** With data becoming increasingly important to executive decision making in the information age, it is also becoming increasingly important to present data in attractive and instantly understandable ways. This presents challenges but also opportunities for companies to work with metadata and infographics. GM has strengths within Big Data and within GM a data-sharing authority, called GM-Connect, is being established to help break down the barriers which stop public services sharing information. This approach will enable improved understanding of the risks, challenges and opportunities in the area – identifying patterns, trends and relationships and helping allocate resources as effectively as possible.

**7.6** GM is well placed to take advantage of changes and to retain and reinforce its position as a key player within the Digital and Creative Industries. There are three key opportunities for GM listed below. The remainder of the section provides more detail on these and other additional growth opportunities.

**Figure 24: Key opportunities for growth**

| Opportunity | Activity |
|---|---|
| **Profile** | • In order to build scale and critical mass Manchester must capitalise on the profile of:<br>- the conurbation itself (as a place to live and work)<br>- the sector's key assets, particularly MediaCityUK<br>• opportunities linked to: Big Data, demonstrator and test-bed programmes, and GM strengths in areas such Cyber security |
| **Digital Infrastructure** | • Improve the quality of Digital Infrastructure |
| **Talent** | • Retain, attract and develop pool of highly skilled individuals seeking employment within the sector |
| **Financial ecosystem to attract growth** | • Access to equity finance is a key issue<br>• More needs to be done to support the development of the financial ecosystem. Increasing the availability of targeted, start-up and early stage risk capital is critical going forward |

[33] Technology Strategy Board (2013): Creative Industries: Strategy

7.7 **Capitalise on the profile of Manchester and its Digital and Creative assets to build scale and critical mass:** Manchester has a high profile and is seen as a great place to live and work. In 2015 it was rated as the best UK city to live in according to the Global Liveability Survey by the Economist Intelligence Unit which rated areas on issues such as culture, environment, education and infrastructure. Indeed, Manchester is known for its music, arts, culture, sport, bars and restaurants and has one of the largest and most vibrant student populations in Europe (over 100,000 students). It benefits from a wide variety of galleries and cultural and sporting venues across the conurbation.

7.8 The conurbation's reputation as an excellent place to live and work is complemented by key sectoral assets, in particular the profile and significance at national scale of MediaCityUK and the co-location of the BBC and ITV. GM has the opportunity to capitalise on both the conurbation's image and assets as a focal point for new and rapidly growing digital and creative companies both nationally and globally. Opportunities remain to develop a more coherent offer further building on the success of MediaCityUK, its increasing specialization and digital technical expertise, its associated supply chains including through 'North Shoring' (attracting firms from the overheated London and South East), as well as broadening the focus of digital businesses beyond media and creative into other areas of the economy, especially in the fields of health innovation, advanced materials and manufacturing where GM has considerable strengths.

7.9 The strength of Corridor Manchester's R&D function in combining digital expertise with advanced materials and health innovations (including The University of Manchester School of Computer Science, Centre for Health Informatics, Manchester Science Partnerships), opportunities linked to Big Data, extending a programme of demonstrator and test-bed projects such as CityVerve allowing whole systems testing as well as building on GM's strengths in areas such Cyber security will be key going forward. Indeed, the SIA of GM and East Cheshire highlights the importance of exploiting synergies between GM's areas of strength such as Health/Digital/Advanced Materials/Energy.

7.10 But there is also a need to build on the strength of the research assets for example by increasing spin-outs from the Universities, and further developing the relationship between university and business, for example through more Knowledge Transfer Partnerships. The planned International Screen School at MMU will help to bring science and creative innovation together in a new interdisciplinary HE resource. There is also an opportunity to develop a high quality cultural environment along the corridor, a key facet of successful Digital and Creative locations.

7.11 **Improve the quality of digital infrastructure:** The provision of high quality high speed digital infrastructure is essential to underpin and grow the digital and creative sector in GM (and also drive wider growth across the whole economy). Following the completion of Broadband Delivery UK Funded investment it is expected that 98% of GM business

and residential communities will have access to a minimum of 25Mbps by April 2017. However, significant gaps in provision will remain, particularly in Manchester and Salford which were not eligible for Broadband UK funding The problem is particularly acute in the Manchester City Centre and Salford Quays areas where there are already Digital and Creative clusters.

7.12 There is now evidence that the market is responding positively to address the gaps with both Virgin Media and BT making investment announcements and other providers showing a keen interest in GM, there is a need to ensure the gaps are addressed and speed and quality continues to improve. The Government's commitment to making high speed broadband a Universal Service Obligation by 2020 (minimum of 10Mbps) should accelerate further BT investment in gap-filling. It will be important for future growth to ensure all parts of GM especially new employment locations and households that can spawn start-ups and micro businesses have access to high quality broadband.

7.13 **Attract, Retain and Develop Talent:** Both the Digital and Creative subsectors are highly skilled and are expected to remain so in the future. GM has one of the largest (over 100,000) student populations in Europe with around 15,000 students enrolled in various creative, digital and ICT courses across the conurbation's four universities and RNCM. GM also benefits from a dynamic cultural scene, an essential feature of an attractive city able to retain talent and attract entrepreneurs to want to develop their businesses in GM.

7.14 The scale of undergraduate provision in relevant subjects coupled with the city as a place where young people/entrepreneurs want to live affords GM a key advantage on which to build. Set against this, it is recognised that GM is competing with other UK locations for talent and it is therefore critical that the conurbation recognises and builds on its strengths in particular around media, tech and content and the cultural environment of the city in order to attract and retain skilled workers and community. Having a strong Digital and Creative community will be critical for developing, attracting and retaining Creative and Digital businesses to the conurbation.

7.15 **Financial ecosystem to attract growth:** Access to Finance is a key issue for businesses across the economy in GM with one in five companies citing it as a barrier in the GM Business Survey. From a sectoral perspective, the Technation 2016 report highlighted the need to encourage and publicize private investment opportunities in the Digital Tech Economy, particularly outside of London, citing that that 46% of digital entrepreneurs surveyed in Manchester said that they faced challenges as a result of limited access to finance. [34]

7.16 From a GM perspective, it has been suggested that whilst there are various publicly-run investment funds in GM, feedback from tech start-ups was that this does not fit best with their needs, although it is recognised that such funds do not necessarily have the remit to invest in tech start-ups. There are informal networks of 'investment angels' who invest on an ad hoc basis but their profile is low and activity needs to be better coordinated,

[34] Tech City NESTA, Technation (2016): Transforming UK

structured, scaled and more visible. As a consequence of historic fragmentation, there has appeared to be a lack of tech-savvy, easily-found investors in the North West.[35]

7.17 This provides an opportunity for GM and is in part being addressed across the conurbation through the establishment and operation of the Co Angel Investment Service which provides an access and introductory point for start-up and early stage tech businesses and for syndicates and networks of business angels interested in the space. In addition, Co Angel provides deal structuring, due diligence and investment management support to those business angels and specialist, investor-focused investment readiness training support to those businesses looking to raise equity funding to develop their plans.

7.18 Further supporting the development of the financial ecosystem and increasing the availability of targeted, start-up and early stage risk capital is critical going forward.

## Threats

**Figure 25: Threats**

| Threat | |
|---|---|
| **Access to skilled workers** | • Digital sector is competing with other sectors for digital skills<br>• Rapid technological advances leading to both skill gaps in the current workforce and skills shortages when recruiting new staff<br>• Current skill shortages also linked to finding staff that combine advanced IT software and hardware skills and mix of business and softer skills such as customer service, sales etc. Strong learner demand not translating into giving employers the workforce that they need<br>• Raising participation in science, technology, engineering, arts, and mathematics (STEAM); and continuing to support and develop Careers Education, Information, Advice and Guidance (CEIAG) to promote awareness of progression routes.<br>• Difficulty ensuring that the curriculum keeps pace with technological change<br>• The digital sector requires specific knowledge and skills not always linked to qualifications<br>• Structure of sector and many micro-size firms makes skills development challenging due to a shortage of time, resources etc.<br>• Future skill shortages due to expected growth of the sector, alongside technological trends requiring workers with increased specialist knowledge<br>• Lack of gender diversity in the sector<br>• Many good skills initiatives across GM but there is a lack of coherence and strategic framework |
| **Potential changes to broadcasting funding landscape** | • Potential implications and impact for the conurbation of changes to broadcasting landscape need to be considered |
| **Competition** | • Competition both national and international in this fast growing sector |

7.19 **Access to skilled workers.** Skills shortages have been identified as the greatest threat to the Digital and Creative Industries sector in GM. National research highlights current and emerging bottlenecks, and skills gaps are much more likely to delay the

[35] Technology Enterprise in Greater Manchester, December 2014

development of new products and services amongst digital and creative firms, impacting negatively upon innovation and competitiveness. [36,37]

7.20 Key challenges identified by UKCES include: the school curriculum lacking relevance and failing to equip young people with the skills required by industry, insufficient promotion of digital and creative careers, graduates leaving university without up to date technical or business and softer skills and rapid technological advances leading to skills gaps amongst the workforce.

7.21 Whilst GM has a large pool of students and some strong links between business and academia, challenges remain in respect to training more young people with a mix of science, technology, engineering, arts, and mathematics (STEAM), business and softer skills to create a large pool of well qualified young people with sector relevant skills, marketing the sector to a wider field of potential recruits, ensuring that the skills system keeps pace with technological change and that there is greater engagement between training providers and employers to ensure the relevance of training. An approach is required to address digital skills shortages that facilitates much greater involvement of businesses in the sector working with schools from Primary level upwards, to develop curriculum approaches that start to develop the technical and generic skills needed. In addition, there is a need for better co-ordination, bringing different parts of the skills system together, rolling out good practice and ensuring different, good initiatives work together. Progress has been made to address this challenge in GM, for example the University Technical College (UTC) at MediaCityUK is specifically geared towards supporting young people (particularly 14-18 year olds) to develop the skills to live and work in tomorrow's digital world.

7.22 **Potential changes to broadcasting funding landscape.** In the 2015 Budget it was announced that the cost of funding free TV licences for the over-75s would be transferred from the government to the BBC between 2018 and 2021. Whilst the impact of this is unknown, potential implications and impact for the conurbation need to be considered alongside potential changes to the C4 funding model and on-going pressures on traditional commercial broadcasters such as ITV/Granada.

7.23 **Competition.** The Digital and Creative Sector is an important part of GM's economy, but also an important part of the economic development strategies for cities such as Leeds, Bristol, Glasgow and Edinburgh. As such, GM is competing with such other UK locations for investment and talent and it is therefore critical that the conurbation recognises and builds on its strengths in particular around media, tech and content. In addition, global competition is a threat to the growth of Manchester's Digital and Creative Industries sector, in particular from London, Dublin, Berlin and Tel Aviv.

[36] UK Commission for Employment & Skills (2015): Sector Insights: Skills and Performance Challenges in the Digital and Creative Sector

[37] Technation (2016): Transforming UK Industries

# 8 Spatial Considerations

8.1 Growth in Digital and Creative companies is likely to continue to be focused in places that are:

- Well connected in terms of digital and transport infrastructure
- Have access to a strong talent pool
- Can offer a wide culture and a leisure offer which is attractive to high value added workers and have high quality urban environment
- Contains accommodation designed to promote idea sharing and proximity to other companies and like-minded individuals will prove attractive to businesses within the sector
- Future growth in the sector is therefore likely to continue to be focused around the main clusters of sectoral employment and growth concentrated within central and east Manchester and Salford Quays and through Trafford Park and beyond. MediaCityUK with its anchor tenants of BBC/ITV and international profile will be key attracting businesses to cluster in the area. In addition, the vibrant Northern Quarter, the Sharp and Space Projects as well as Corridor Manchester's R&D strengths will prove attractive in attracting businesses to locate within these areas.

8.2 Further growth is also likely to be linked to smaller clusters in lower cost locations, such as those that exist within Bolton, Bury, Rochdale, and Stockport/North Cheshire. Growth is likely to come from spin-out from larger firms and new, typically micro-sized, firms. This demonstrates the flexibility of the sector, as these businesses can operate in any location, provided that the requisite digital infrastructure is in place. Indeed, the flexible nature of the sector suggests opportunities for growth exist linked to new developments across the conurbation, such as is being progressed at Ashton Old Baths, now running for over a year, Stockport Business and Innovation Centre, and the Wayra/Hack Digital Enterprise Hub launched in Oldham as a key part of the Independent Quarter. Growth opportunities also exist from micro businesses created by home workers in residential areas.