
**Manchester City Council
Report for Resolution**

Report to: Economy Scrutiny Committee – 6 March 2013

Subject: Digital Skills

Report of: Chief Executive

Summary

This report responds to the question about the development of the Digital Strategy for Manchester and specifically the skills development of residents and how local people are being supported to gain the digital skills relevant to the modern labour market.

The Committee also asked for an update on the work of the Manchester Digital Development Agency (MDDA) in relation to skill development.

Recommendations

To note the report and to receive an update in six months on the Digital Skills Strategy and the actions specifically in schools supported by the Manchester Schools' Alliance.

Wards Affected: All

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Background documents (available for public inspection):

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

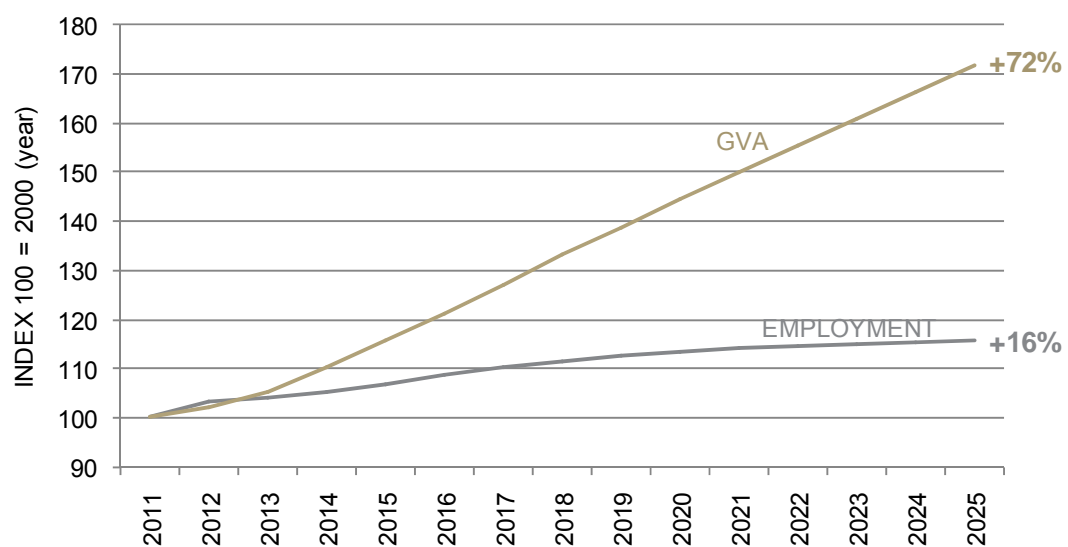
- Manchester's Digital Strategy
(<http://www.manchester.gov.uk/meetings/meeting/1517/executive>)
- Manchester's Digital Strategy Update
(http://www.manchester.gov.uk/egov_downloads/DigitalManchester_1_.pdf)
- Government Digital Strategy
(<http://publications.cabinetoffice.gov.uk/digital/strategy/>)
- New Economy's Business Register & Employment Survey, 2012
- Nesta Next Gen Report
(http://www.nesta.org.uk/publications/assets/features/next_gen)

1.0 Introduction

1.1 Digital education and skills in Manchester is a pressing priority and is the fourth point on the Digital Strategy (Appendix 1). Preparing people for the “digital economy” is important insofar as the application of new technologies is extended across all areas of life and work. The UK’s digital content and Information Communication Technology (ICT) sector has a strong reputation for innovative technology and design and contributes to over 7% of UK economic output. Digital Content & ICT industries account for 45,800 jobs in Greater Manchester (GM), and generate around £2bn p.a. of economic output. GM has developed this sector to the stage where it represents the UK’s biggest centre for the industries outside the Greater Southeast.

1.2 Growth forecasts for the (slightly more broadly defined) Creative & Digital industries in GM are drawn from the Greater Manchester Forecasting Model (GMFM) produced by Oxford Economics on behalf of GM gives an overview of the sector’s overall growth potential over the coming decade, which as illustrated in Figure 1, is overwhelmingly positive in GVA terms, with the latter forecast to grow by over 70% by 2025. While employment is estimated to grow more modestly (though still at a healthy 16%) during the same period, this implies a strong increase in productivity. This would also suggest that the economic importance of the sector could be underestimated if only employment data is considered.

Figure 1 : Employment & GVA forecast in Creative & Digital Industries, 2011-2025



Source: Greater Manchester Forecasting Model, 2012

1.3 The latest GM Business Survey highlights business in this sector themselves predict 36% growth next year.

1.4 There is evidence that the supply of skills is one of the main obstacles to further economic growth in the digital and ICT sectors. Within GM, over half the businesses in the sector feel that the skills of their workforce are the main

driver/ determinant for growth in their business and the sector. However, almost a third (28%) consider workforce and skills to be their main obstacle to growth. This reflects a concern that the supply of skills is not sufficient (and/or is insufficiently aligned) with the demand for them.

- 1.5 Digital skills need to be framed widely – so as to include primary, secondary, post-16 provision, and higher education providers as well as more informal learning routes. This is in recognition of the need for a digital education strategy which meets both immediate short term issues around labour market demand, but also addresses the need for long term strategies for preparing a new generation of Mancunians growing up in a City which is a European digital capital with the aim of being a global leading top 20 digital city by 2020.

2.0 Background

Background to the Digital Strategy

- 2.1 Manchester City Council is committed to becoming one of the world's most 'digital connected cities' by 2020. The "Digital Manchester" strategy, with its ten point action plan, includes a commitment to improving access, skills and training for Manchester residents and businesses.
- 2.2 It is recognised that we are not where we should be as a city or region in terms of skills or access to the internet - 16% of Manchester residents can't access the internet which perpetuates the digital divide. Although concentrated in certain parts of the city, mainly in Wythenshawe, North Manchester and East Manchester, digital exclusion exists in all parts of the city which is why we need action at a city wide level as well as focusing on specific neighbourhoods. Digitally excluded people tend to live in areas of Manchester with high levels of deprivation. Alongside this are the opportunities provided by Manchester having the largest cluster of digital and media businesses outside of London, with significant growth in the city region following the arrival of the BBC. Consequently, Manchester needs to do more and quickly to maintain a competitive advantage, especially for creating new pathways to skills and jobs for local people.

The work of the Manchester Digital Development Agency (MDDA)

- 2.3 The development of a local digital agenda for Manchester, focusing on economic growth, skills and inclusion is an important and a well developed part of the City's economic development strategies for more than 20 years. The development of the Manchester Host in 1991, the Electronic Village Halls from 1992 onwards and the Manchester Community Information Network (MCIN) in 1994 were key milestones in establishing the foundation of this work, coordinated by the Technology Team within the Economic Initiatives Group (EIG) which became the MDDA in 2003.
- 2.4 This work was complemented by joint initiatives with MIDAS to support the continuing growth of the digital and creative sector, through the establishment of an independent Manchester Digital trade association in 2001, which built on

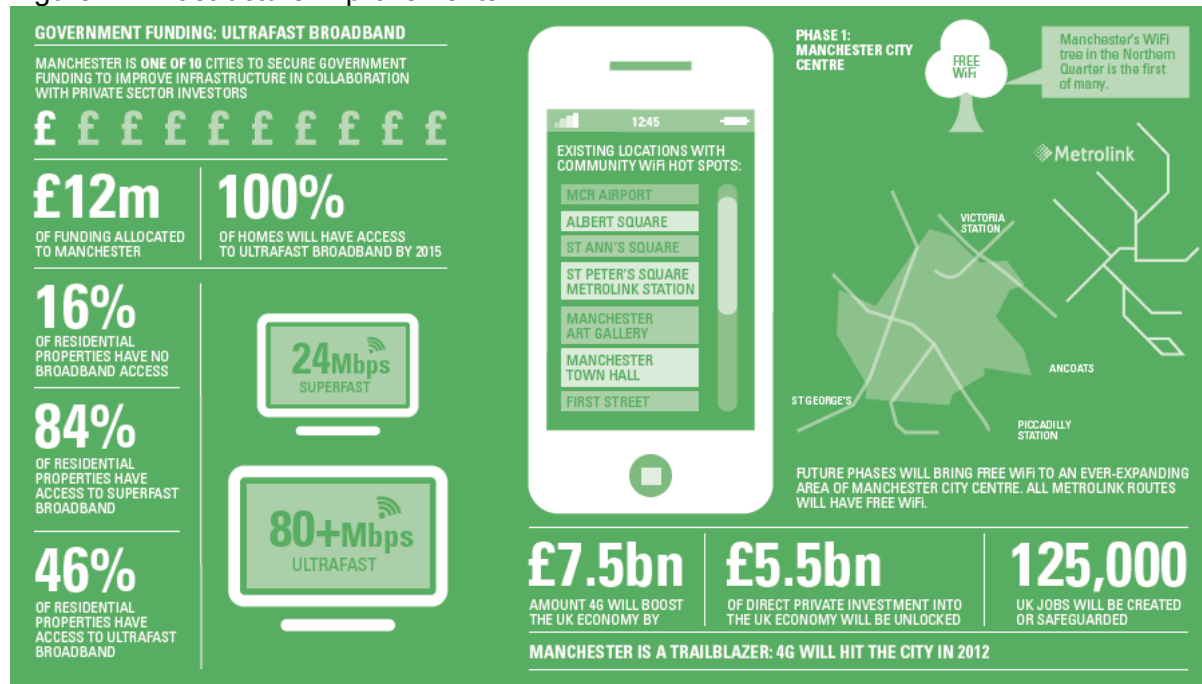
the success of the annual 'Big Chip' awards for the digital sector (set up in 1997), and joint work with the Creative Industries Development Service (CIDS). In February 2012 the annual Digital Skills Summit was launched by Manchester Digital, supported by Manchester City Council, to bring together the sector and skills providers, particularly from higher and further education locally and also focusing on apprenticeships and work in schools.

- 2.5 This work, in turn, supports the continuing work on digital inclusion being developed by MDDA working in partnership with Regeneration, Libraries, MAES and external partners, especially in the voluntary sector, such as the Manchester Digital Lab – 'MadLab' and Peoples Voice Media. Following the launch of the new Digital Strategy in 2012 this work is now being further developed through the Go ON Manchester campaign to recruit 'digital champions' to support skills development both amongst residents and local businesses, e.g. through the 'Selling on the Web' courses.

3.0 Connectivity

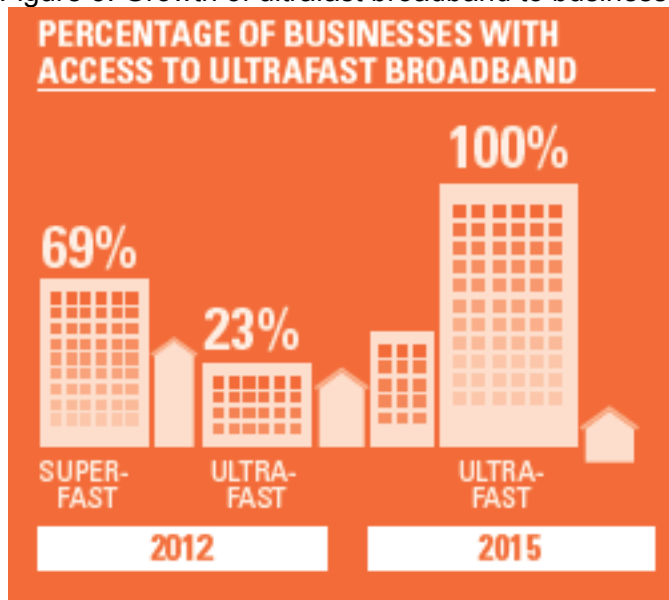
- 3.1 The importance of making connectivity more accessible, including more affordable, is highlighted by the fact that 4.5 million people in the workplace in the UK lack basic digital skills and 16 million lack basic online skills. Looking from a business perspective, despite the internet contributing more than £120billion to the overall UK economy in 2012 (8% of GDP), only 14% (1 in 7) small businesses sell online and approximately half a million SME's feel that the lack of digital skills is slowing the growth of their business (Lloyds Banking Group/ BDRC April 2012). Small businesses that do go online, grow twice as fast as their competitors (McKinsey, 2011).
- 3.2 Seven million jobs are advertised online in the UK (Go ON UK). If half of the unemployed people who currently don't go online did so, they are statistically more likely to get a job and be better off as their overall lifetime earnings will increase.
- 3.3 The Urban Broadband Fund (UBF) has awarded Manchester £12m as part of the Superconnected Cities initiative to help close this digital divide. Currently we are working with government and the European Commission to confirm State Aid approval for the Urban broadband programme in the UK. The following infographic (figure2) shows the Wi-Fi, 4G and the aim of the broadband activity planned to help support the infrastructure to enable residents to connect, subject to State Aid approval.

Figure 2: Infrastructure improvements



3.4 The Urban Broadband activity will also support investment in improvement of connectivity speeds for businesses in Manchester. Figure three shows what the Urban Broadband Fund aims to achieve.

Figure 3: Growth of ultrafast broadband to businesses.



3.5 In addition to the infrastructure investment, Manchester is well positioned to capitalise on digital growth and industry trends due to the city's demographics:

- 40% of Manchester's population is categorised as Generation Y (16-34 year olds) or 'connected millennials' and these young citizens represent the fastest growing section of today's workforce, and a quarter of the global population. In addition to Generation Y, 'Silver Surfers' are also increasing with the number of single pensioners with internet access at

home tripling in the past decade. Just 11% of one person households over state pensionable age had internet access at home in 2000. Now the figure stands at almost 40 per cent (Office of National Statistics).

- The current Manchester City Council website receives 12% more visitors and year on year with increases of 18% and 8% for financial and non-financial transactions with an ever growing social media audience.
- 59% of the UK own a smart phone and 21% a tablet, 17% currently have a Smart TV with 11% of Brits intending to buy a Smart TV and all three predict rapid growth. The Council's most recent resident's survey highlighted approximately 42% of residents own a smart phone or device. Manchester City Council's website alone receives 30% of its visits from a mobile device.

4.0 Skills

The National Picture

- 4.1 There is an increasing concern that the current education and training offer in schools, colleges and universities, is not sufficiently relevant or aligned to labour market priorities and employer demand. This was highlighted in the "Next Gen" report, which reviewed skills for the video games and special effects industries, published by NESTA in February 2011. It concluded that: "... there are severe misalignments between the education system and what the UK video games and visual effects industries need."
- 4.2 In terms of schools, it criticised the fact that the industries suffer from an education system that doesn't understand their needs. This is reinforced by a school curriculum that focuses in ICT and in office skills rather than the more rigorous computer science and programming skills which high-tech industries like video games and visual effects need. The Education Secretary, Michael Gove called the current ICT curriculum as "de-motivating and dull" and has called for radical changed. The current curriculum consultation poses changing from ICT to Computing as a core subject. As the curriculum is overhauled and syllabuses are brought into line with the most challenging in the developed world, we need to look to places like Singapore and Finland where Computer Science is compulsory so that the computing and artistic skills that are vital to high-tech, creative industries are given the impetus they need.
- 4.3 The Next Gen Report was equally critical of colleges and higher education institutions for failing to produce, "job-ready graduates with more specialist technical skills who can start with a good understanding of production processes and the programming languages and software applications the industries use. There are already many university courses purporting to provide specialist training for video games and visual effects. But most of these courses are flawed, leaving those graduating from them with poor job prospects".
- 4.4 Finally, the broader training needs of employers, especially the smaller enterprises which characterize the sector were also criticised. "A private market in supplying Continuous Professional Development (CPD) to these

industries has emerged to meet these needs, but many employers cannot afford to use them. Universities and colleges could offer high-quality lower-cost options, but they currently are not seen as a source of training for these sectors. Stronger partnerships are needed to ensure that effective CPD can be accessed in further and higher education to keep our high-tech, creative industries at the top of the game”.

- 4.5 The report went on to make twenty recommendations (See Appendix 2) for the “re-alignment” of digital education with the needs of the sector. It did not conclude that the overall picture was dismal, as there is evidence of some new development work within the education sector to respond to this issue. A key measure is the move toward a GCSE in Computing, and associated improvements in mathematics teaching, evident in some exemplary secondary schools. There are also colleges and universities which appear to be offering courses much more aligned to labour market needs than others.

The Manchester Picture

Education

- 4.6 The current provision in the further education sector in the North East of Greater Manchester, suggests that there is a lack of alignment. (See Appendix 3 – Current provision in FE in Four Colleges)
- 4.7 Existing provision, within the exception of Foundation Degrees offered by Manchester College, tend to focus on networking and ICT infrastructure. The pathways into digital content creation, and the extent of employer engagement in developing these, seem much less well developed.
- 4.8 There is range of provision developing across all school sectors in the city: primary, secondary and special. This includes use of digital technology to deliver the curriculum and support learning as well as the teaching of coding and programming in some schools in the city and the move towards a more challenging digital curriculum preparing for the GCSE in computing.
- 4.9 It is important to note, that there is a willingness, from primary through to secondary, and in colleges and universities to engage with employers in new and different ways, to respond to the complex challenge of aligning education and training much more closely to the needs and opportunities in the digital sector. The establishment of the Strategic Education Partnership will further support this engagement.
- 4.10 Primary, secondary and special schools have all increased their use of tablets, iPads, kindles and other devices to support teaching and learning: Levenshulme High is trialling iPads with a year 9 class and the school are aiming to issue all Year 7s next year with an iPad. Manley Park Primary school has increased pupil engagement via the use of iPads and helped to develop pupils’ innovation, initiation and independence skills as well as enabling access to learning in a range of different environments.

- 4.11 Schools are also using digital technology to develop virtual learning environments (VLEs) or using podcasts to deliver the curriculum and support independent learning:
- St Pauls RC High School has invested in software that records a teaching session on the screen with a voice-over and/or subtitles which is then made available to students thus allowing pupils to see a session again independently in lessons or at home.
 - Grange Special School for pupils with autism has a hall equipped with 4D technology to enable pupils to experience some of the environments they are learning about.
- 4.12 Digital technology is also increasingly being used by schools to support communication:
- Levenshulme High School - blogs are being used to give formative feedback and get discussions going within a class about a topic and are used for homework.
 - St Peters RC High School has established a partnership with a school in Beijing. Skype is used to facilitate the teaching of pupils live from Beijing following the introduction of Mandarin to the school curriculum.
 - At Lancastrian School, a wide range of Assistive Technology (AT), including Alternative and Augmentative Communication (AAC) strategies are used to enable disabled pupils to communicate and access the curriculum. Pupils use a number of different types of AAC systems such as low tech communication books and high tech voice output communication aids (VOCAs). The low tech devices can be used to develop early communication skills and social communication, such as greetings or joining in songs and stories. The high tech devices provide a greater number of message and vocabulary, enabling pupils to use language in a more sophisticated way. The devices use synthesised speech output and often have additional features such as computer access and environmental control capabilities.
 - Three schools: North Ridge, Piper Hill and Newall Green High School are working as part of the Special Educational Needs and disability pathfinder to test the use of cloud technology for helping young people and families gather, store and share information in a safe environment. These schools have registered some of their pupils on a pilot programme to use Multi Me - a secure social network, which allows the pupils to communicate with their friends safely using text, videos, podcasts and photographs. It also gives pupils space to store documents (such as references and examples of their achievements), and to share them with trusted staff. The pupils who have been involved in this pilot love the idea that they were using something like Facebook - whilst their parents are reassured that they were only able to communicate with other young people in Manchester schools and colleges.
- 4.13 A few schools already teach coding and programming skills and an increasing number are looking to develop coding as part of their curriculum:
- Park View Primary School is developing pupils' coding and programming skills this year and Medlock Primary School has registered with a code club to develop a coding club in school.

- A year 9 team in Whalley Range High School won the BBC 'Design an App' competition before Christmas and have recently taken part in a cypher competition organised nationally to promote coding.
 - St Peters RC High School, following a successful bid for a £1,000 bursary from the BCS Academy of Computing, has established a Computer Science Club. Pupils are learning how to program a microcontroller controlled robot, including creating the circuit board to add motion and light sensors. Members of the club are also learning how to write programs in Python and to create smartphone apps, including mobile access to their school timetable.
 - Manchester Creative and Media Academy pupils developed an app that supports pupils finding their way round their new school.
- 4.14 Some schools such as Whalley Range High School have also trained pupils to be digital leaders or champions within the schools and provide support to both staff and other pupils on accessing technology.
- 4.15 The role of the Greater Manchester Combined Authority (GMCA) has an opportunity to utilise additional powers to exercise a stronger commissioning role in skills provision for the region. This provides an advantage and local skills responsibility that differs to the present national delivery model which fails to respond to spatial opportunities. This remains a subject of continuing discussion with the government department for Business, Innovation and Skills (BIS) along with other cities as part of the City Deal process.
- 4.16 Eon Reality, a leading global 3D company has opened their European head quarters in Manchester alongside a Coding entrepreneur school. On the 11th February it started teaching 20 students and by September it aims to take its second intake of 100 students supporting another practical pathway for residents to gain digital skills.
- 4.17 SharpFutures Manchester CIC has progressed with the first five digital apprentices and 10 volunteer jobseekers as a small pilot with an ambition to grow significantly. Manchester City Council has supported this pilot with a grant specifically aimed at engaging micro business in this sector to work with apprentices and to support valuable work experience and talent development. SharpFutures is a Creative Digital agency that supports young people into employment. A major client for SharpFutures is the delivery of Creative Digital services and events for The Sharp Project.
- 4.18 Hyper Island based in the Northern Quarter is one of a global network of education providers in Stockholm, Karlskrona, New York and Singapore. The student programs immerse young talent in intensive learning experiences from digital art direction to e-Commerce to data strategy. Executive programs also boost understanding of how digital changes societies and consumer behaviour - and how organisations need to change to stay creative and competitive in an increasingly digitized world. Manchester delivers a masters in Digital Media Management and the first year supported 30 students from 15 countries with plans to double the intake for year two.

Informal Learning and Digital Engagement

- 4.19 To complement the Urban Broadband Fund infrastructure investment the Council are supporting a local version of the UK's 'Go ON' campaign to promote digital inclusion that encourages residents and businesses to exploit this investment (see appendix 4). The Go ON Manchester campaign has over 300 Digital Champions signed up with an aim to reach 3,500 and learning resources on the Go ON website to support helping people to get online, including through the Digital Champions courses being run by MAES. Promoting digital skills for local small businesses through the 'Selling on the Web' courses in partnership with Regeneration, the first covering Central took place in January. The second will take place in Wythenshawe in late February, with a subsequent event being planned in North for March.
- 4.20 All Manchester Libraries offer public internet access, with libraries playing a vital role in bridging the digital divide - the gap between "haves" and "have nots" in the digital age. Across the city, libraries provide free access to more than 600 computers with internet access, and in 2011/12 nearly 500,000 hours of use were recorded. Four libraries also offer a 'laptops for loan' scheme, with free Wi-Fi available in eight libraries across the city. Libraries also offer a variety of digital training opportunities, provided in a range of formats to suit different levels of capability from informal point-of-use assistance, weekly I.T. drop-in sessions, formal MAES training classes plus online job seeking training materials and one-on-one CV sessions by appointment. A comprehensive digital reference collection on the library website (www.manchester.gov.uk/24hourlibrary) connects residents to high quality learning materials. These include online citizenship tutorials to guide new residents through the steps to become citizens; COBRA, a digital start up guide for entrepreneurs, plus more than twenty digital reference tools offering trusted and reliable online materials to support and enhance learning and digital literacy. In spring 2014 Central Library will re-open and offer high speed internet access through a network of 150 public access PCs. This offer will be supplemented by laptops / tablets for loan along with a Wi-Fi network and charge points to enable customers to be digitally active via their own devices.
- 4.21 A trade association representing 450 digital businesses in the city called Manchester Digital run an annual Digital Skills summit and Talent Day that supports bridging Universities and College students to local jobs. This year's Digital Skills Summit (Feb. 20th and 21st 2013), aims to be the largest digital skills conference and careers fair in the North that supports retaining digital talent in Manchester.
- 4.22 Manchester Digital Lab - MadLab – also promotes digital skills provision through the Omniversity, the ESF women and digital skills courses and work with schools, e.g. the monthly "CoderDojo" where children and young people meet, share and learn about coding and programming, over 50 participants (from 7 to 17), plus parents and approved volunteer mentors, attend with workshops, demonstrations and skill-swaps taking place through the day sessions. This is part of a range of under-18s initiatives at MadLab which also

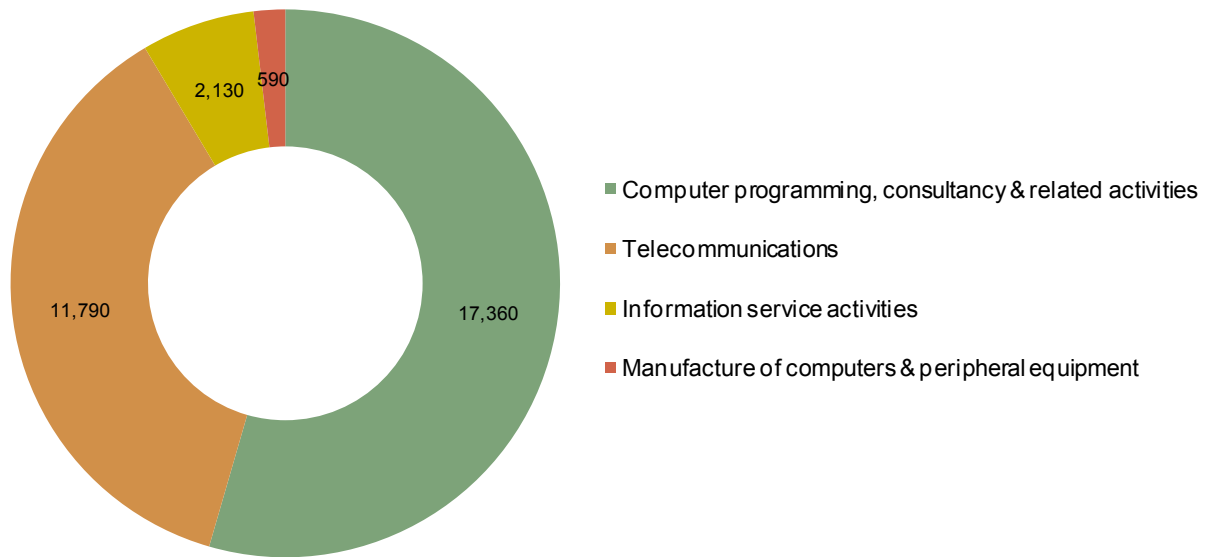
includes summer holiday 'coding camps' and skills sessions about Arduino (DIY micro-computing hardware).

- 4.23 Manchester's International Women's Day celebrations for 2013 have focused on women in Science, Technology, Engineering and Mathematics (STEM) as only 9.1% of those working in STEM careers are women. Over 50 events are taking place across the city including Digital Teapot at The Sharp Project and Girl Geeks Barcamp at MADLAB cumulating in an award ceremony celebrating women in the city working in STEM industries.
- 4.24 Girl Geeks and Manchester Libraries, are joining together to offer IT training for women – for free. The Digital Skills for Women in Manchester workshops, taking place in five libraries, aim to equip over 100 GM women currently in unemployment with the tools they need in today's workplace. There are four courses available from basic IT skills, social media skills, introduction to web development and an introduction to programming that will help confidence and increase their opportunities to find employment.
- 4.25 The Cornerhouse provides an informal social hub for a whole host of creatives in Manchester offering a programme aimed at supporting, informing and helping creative industry practitioners and those who aspire to enter the creative world via workshops, talks and events in order to develop skills, widen networks and encourage further innovative thinking in Manchester. The next workshop at the end of this month is a beginner's guide to coding.
- 4.26 This report does not attempt to provide all learning opportunities but highlights there is a vast array of formal and informal digital skills opportunities in the city

5 Labour Market and Jobs

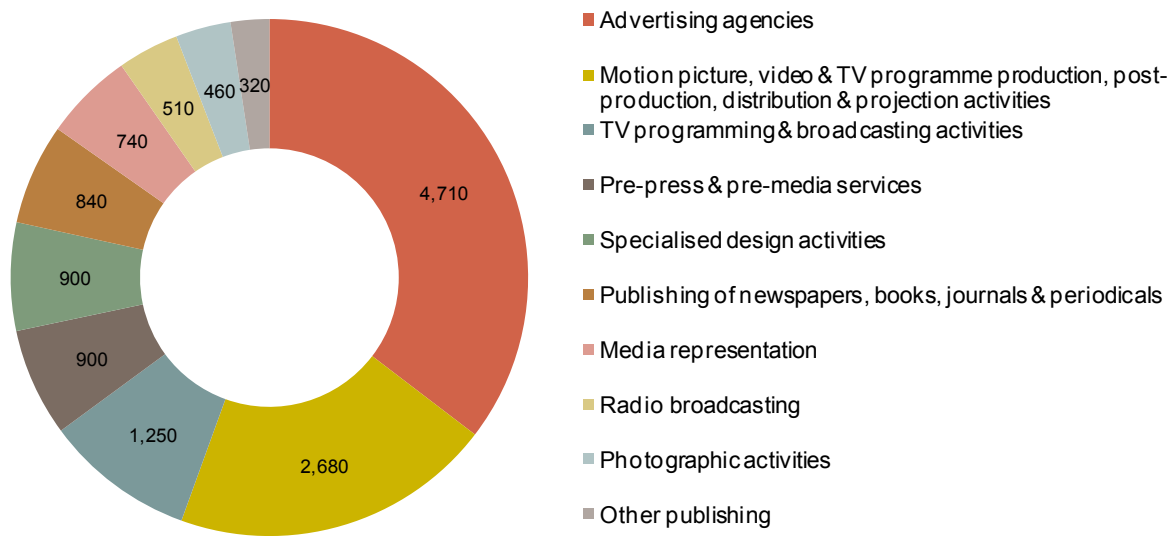
- 5.1 Understanding the labour market intelligence available in relation to the digital sector will shape the skills needed to support it. The new economy prepared a report on the Digital Content and ICT Sector in Greater Manchester which confirmed the importance of the sector in terms of employment, and helps to breakdown its structure. The key issues to note are :-
- The dominance of programming and consultancy within the ICT sector (over 50% of ICT jobs) – Figure 4
 - The diversity of the digital content sector, with advertising dominant, followed by programme making and other media production – Figure 5
 - The predominance of Manchester as the location of employment (32% share of GM) – followed by Trafford, Stockport, and Salford. – Figure 6
 - The continued growth potential of the sector to 2025 – with GVA predicted to grow by 70% in this period (and employment growing at 16%)

Figure 4 : Employment in the ICT sector in Greater Manchester, 2011



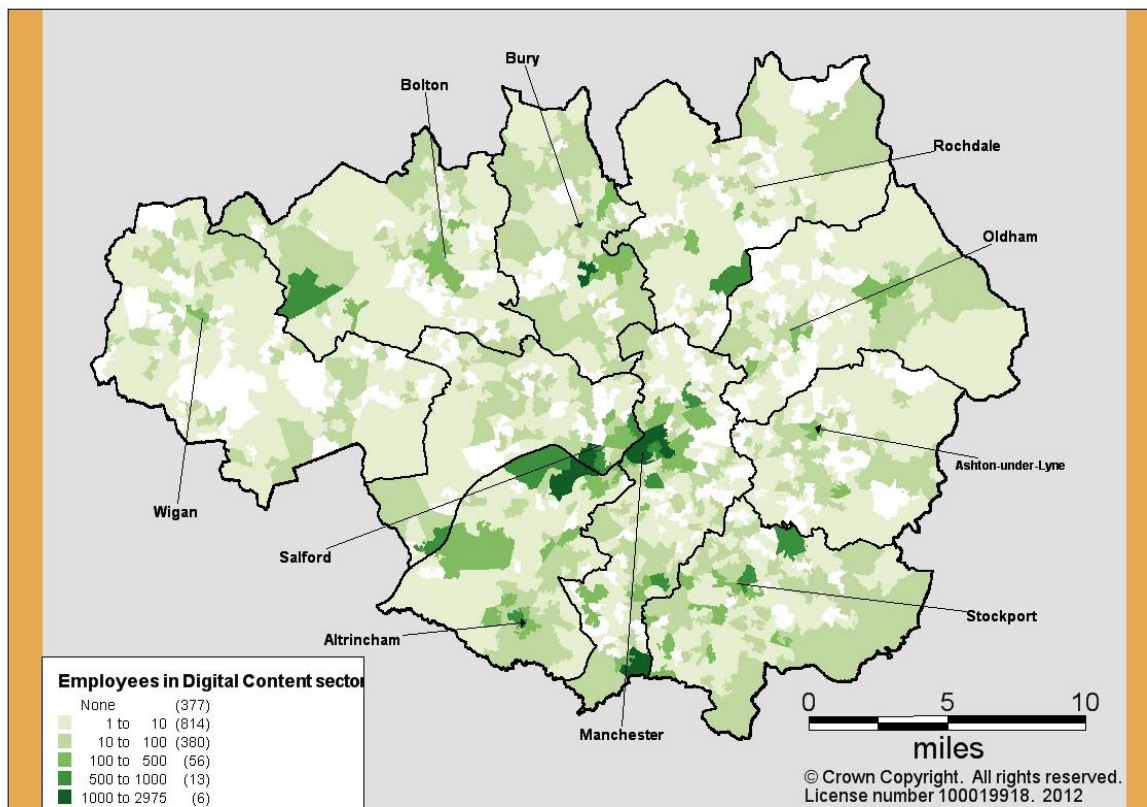
Source: Business Register & Employment Survey, 2012

Figure 5 : Employment in top 10 Digital Content subsectors in GM, 2011



Source: Business Register & Employment Survey, 2012

Figure 6 :Spread of employment in digital content & ICT sector across GM, 2011



Source: Business Register & Employment Survey, 2012

5.2 The report demonstrates that the growth of the sector is predicated on significant increases in productivity, which in turn reflects a changing demand for skills – with an increasing emphasis on higher education.

6.0 Gap - Demand and Supply

6.1 Often the digital industries create high value jobs but lower overall numbers of employment creation resulting in high disposable income into the community, and their housing and consumer needs (and potential spending within Manchester and GM) will be significant.

6.2 The New Economy report also confirms a number key national issues relating to the sector in terms of creative media:-

- The heavy emphasis on small, micro and self employment/ freelancing within the sector
- There are skills gaps within the sector, although this is improving
- Skills – both technically and in terms of business development – need to be creative and dynamic
- The skills gaps particularly reflect areas of multi-skilling, new technologies, business leadership/ development etc

In terms of ICT :-

- Digital companies receive a lot of applications, but consider few have the necessary skills
- The demand for ICT skills is growing, especially around software development, telecommunications, internet etc
- Future growth will be in high skills areas
- The education and training system are not currently meeting demand

6.3 More work is currently underway analysing the gap between the demand for skills and the current “offer” from education and training providers and the need from business. Closing this gap will get residents skilled and closer to jobs created by this sector.

7.0 Skills Challenges and Obstacles

7.1 Matching the needs of local residents and the skills provision with the business opportunities being created by the ever-developing digital sector and new applications and evolving digital technologies is not a simple task. Analysing the skills gap and the current education and training offer and the need from business is being completed by the New Economy with support from the trade body Manchester Digital.

7.2 Once the skills gaps and needs are identified Manchester and Greater Manchester can finalise a Digital Skills Strategy that aims to identify the key challenges and obstacles to be faced and an action plan for tackling these. This is likely to include:

- working with the Manchester Schools’ Alliance to continue the work some schools have started and to embed basic coding, computing, computer science and digital creative skills within formal education from primary, secondary and into further education to create industry ready recruits for the growing jobs being created in this sector
- engaging digital sector businesses in creating new opportunities for employment for local residents, especially through apprenticeships and projects like SharpFutures, closer work with schools and enhanced collaboration with local further and higher education providers
- continuing to promote digital inclusion and develop new pathways for local residents and business to increase not only awareness and skills but also aspirations so that people are really motivated to ‘Go ON’-line
- engaging young people, and their parents/carers, to be inspired by the opportunities of ‘digital futures’ and to provide practical ways of being engaged in this, e.g. through careers advice, coding clubs in or out of schools, work with innovators (e.g. MadLab and the Sharp Project) and create new opportunities to access developing technologies, e.g. 3D-printing and the emerging ‘maker’ culture
- ensuring the teaching skills in Manchester are as equally strong as the digital sector dominance and by working with businesses stay relevant to the ever changing technology landscape to deliver a modern labour market
- promoting innovation test-beds, e.g. through the Manchester Living Lab initiative, to enable local residents and businesses to see new applications and services working in practice, e.g. the work on smart meters with

Carbon Coop, the digital design initiative with 3D-printing being developed by the Manchester School of Architecture, the community reporters programme being run by Peoples Voice Media

- Increase the engagement of the digital sector particularly SMEs in skills development, through the Employer Ownership of Skills (EOS) pilot being run by the GM Chamber. Maximise the potential of that pilot to develop and deliver skills that better meet employer needs
- Increase the number of apprenticeship opportunities particularly higher level apprenticeships in the digital sector

7.3 The Digital Skills Strategy is likely to require a series of interventions pre and post 15 that tackle short, medium and long term:

- **short term** - quick wins with willing participants (schools, education, businesses etc).
- **medium term** - supporting implementation of both the government proposals for Computing and local content as we look to develop a refreshed Manchester Curriculum that defines what we think success would look like locally, both in terms of content and skills to address the gaps and growth of the digital sector
- **long term** - embedding solutions that sustains the growth e.g. the training of teachers entering the profession, working with parents and children about future career ambitions and capacity within the teaching and training professions, and how best to develop this.

8.0 Next Steps

8.1 Finalise skills audit and gap analysis.

8.2 Formulate a GM and Manchester Skills Strategy in conjunctions with partners such as the Manchester Schools' Alliance, New Economy, Oldham and Manchester College, Sharp Futures, Eon Reality and Manchester Digital. Develop an action plan that tackles short to long term interventions that supports the shape of the next generation to be more digital adapt and suitable for the future jobs.

8.3 Through the Manchester Schools' Alliance establish a fuller picture of how digital technology is currently being used in schools, the impact on outcomes and ways in which the good practice can be systematically extended;

- To identify 'Digital Champion Schools' to develop practice and explore ideas across and between schools and shared through the Manchester Schools' Alliance 'Think Tank';
- To develop and promote, through the Strategic Education Partnership and Manchester School's Alliance, a Digital Skills Strategy and associated curriculum that ensures young people leave school with the digital skill set relevant to the modern labour market.

8.4 Continue to make progress with government to enable Greater Manchester to link skills funding more closely to the priorities of the local economy and that the City Deal with government does improve skills commissioning so we have

the skills to match the jobs which are being created as part of our future economy.

9.0 Conclusion

- 9.1 The Digital Strategy recognises the importance of connecting residents to digital learning pathways both via formal and informal routes that supports home-grown talent that can take advantage of the digital jobs in Manchester. Skills from basic online skills to coding qualifications are needed for all our residents from primary students through to silver surfers and the need for a specific Manchester Digital Skills Strategy will focus efforts to support this ambitious growth strategy.
- 9.2 Aspiration for residents to aim to work in the digital and creative industries must also be tackled and young people, especially women need to be inspired to be the digital talent and success stories of tomorrow.

Appendix 1 – Digital Strategy

Access and Connectivity

1. **CONNECTED CITIZENS** – 100% Broadband Coverage:
 - Wi-Fi in all public spaces and high speed wireless across Manchester
 - Superfast and where available Ultrafast Broadband
2. **CONNECTED BUSINESSES** - All businesses have access to fast broadband services and are supported with advice to best exploit it and/or financial assistance in accessing even better/faster services.
3. **CONNECTED MANCHESTER** – public and private sector better connected. Lead and deliver a more coordinated partnership to drive improvements and market the city as a successful digital place to attract new business.

Engagement

4. **DIGITAL SKILLS** – from officers and members; primary school children; Academies and Universities; to adult education we need excellence at all ages to provide the best digital education and further education to support people today to get the skills needed for future jobs. Digital Championing of knowledge transfer about the benefits of 'Going Digital'. This includes use of digital technology but more importantly design, research and development.
5. **SOCIAL CITY** – an open and transparent, digital embracing City Council and Marketing Board. Accelerate social media and engagement, advance our website and web advertising focus, enrich content, maximise offline digital advertising, fully utilise e-opportunities (e.g. e-zines/e-bulletins), Embrace growth in mobile by increasing mobile content, mobile advertising and mobile apps. The development of a Manchester super app (Mapp) is one opportunity, the delivery of many consolidated into a New York-style hub is another. Work with the private sector to support fast progress and crowd sourcing with a hackathon, fully exploit GIS mapping utilisation etc.
6. **DIGITAL REFORM** – encourage and enable more people to become self-service customers, use CRM integration to deliver reform and efficiencies. By providing continued focus on key digital platform excellence, openness, tools, fast accessible connectivity and skills to citizens and business we will allow people to become self-sufficient and help them achieve their full potential.

Industry

7. **ECONOMIC GROWTH** -stimulate and grow the creative and digital sector. As one of our three most important areas of job creation we have to support, encourage and instigate growth from skill development from an early age, inward investment, procurement to maximising global opportunities of our home-grown talent.

Place

8. **DIGITAL PLACE** – the City's digital landscape supports the vision of Digital Manchester – from advertising options to wayfinding, real time tram information to digital tourism – Microsoft surface maps, interactive tours etc. Digital Master planning should be considered at the same time as physical infrastructure and should fundamentally be led by the needs of the digital resident. Providing a joined up voice to drive coordinated development is vital.

Leadership

9. **DIGITAL INVESTMENT / RESOURCES** – exploit new investment opportunities, public and private, that can help accelerate the delivery of our ambitions.
10. **DIGITAL LEADERSHIP** – digital at the heart of Manchester strategies to promote a truly digital city in all we do from transport to health, education to public services. Consolidate and coordinate approaches to development based on need – not multiple people trying to achieve the same end via different methods. Think digital first and lead the way.

APPENDIX 2 – NEXT GEN RECOMMENDATIONS TO IMPROVE DIGITAL EDUCATION (2011)

Note that although this research focussed on Video Games and Visual, the educational implications are wider, and therefore, can be considered in terms of the wider digital sector, and not just one specific aspect.

Schools

Recommendation 1. Bring computer science into the National Curriculum as an essential discipline.

Recommendation 2. Sign up the best teachers to teach computer science through Initial Teacher Training bursaries and ‘Golden Hellos’.

Recommendation 3. Use video games and visual effects at school to draw greater numbers of young people into STEM and computer science.

Recommendation 4. Set up a one-stop online repository and community site for teachers for video games and visual effects educational resources.

Recommendation 5. Include art and computer science in the English Baccalaureate.

Recommendation 6. Encourage art-tech crossover and work-based learning through school clubs.

Recommendation 7. Build a network of STEMNET and Teach First video games and visual effects Ambassadors.

Recommendation 8. Introduce a new National Video Games Development and Animation Schools Competition.

Recommendation 9. Design and implement a Next Generation of Video Games and Visual Effects Talent Careers Strategy.

Recommendation 10. Provide online careers-related resources for teachers, careers advisers and young people.

Universities, Colleges and Vocational education

Recommendation 11. Develop kitemarking schemes, building on Skillset accreditation, which allow the best specialist HE courses to differentiate themselves from less industry-relevant courses.

Recommendation 12. HEFCE should include industry-accredited specialist courses in their list of ‘Strategically Important and Vulnerable’ subjects that merit targeted funding. Industry commits to these courses through industrial scholarships and support for CPD for lecturers.

Recommendation 13. Raise awareness of the video games and visual effects industries in the eyes of STEM and arts graduates.

Recommendation 14. Give prospective university applicants access to meaningful information about employment prospects for different courses.

Recommendation 15. Develop a template for introducing workplace simulation into industry-accredited video games and visual effects courses, based on Abertay University’s Dare to be Digital competition.

Recommendation 16. Leading universities and FE colleges sponsor a high-tech creative industries University Technical College (UTC), with clear progression routes into HE.

Recommendation 17. Kitemark FE courses that offer students the best foundation in skills and knowledge to progress into Higher Education.

Training and continuous professional development

Recommendation 18. Skillset Creative Media Academies and e-skills UK’s National Skills Academy for IT to work with industry to develop specialist CPD training for video games and visual effects industries.

Recommendation 19. Support better research-oriented university-industry collaborations in video games and visual effects.

Recommendation 20. Continue to treat the 18 visu

APPENDIX 3 – SNAPSHOT OF EXISTING FE PROVISION IN DIGITAL /ICT

	Oldham College	Tameside	Hopwood Hall	Manchest er College
Entry Level				
BTEC Entry Level 3 Diploma for IT Users		<input type="checkbox"/>		
IT Foundation Learning			<input type="checkbox"/>	
Level 1				
OCR I - Media OCR Diploma in IT	<input type="checkbox"/>			
BTEC Diploma in Vocational Studies (ICT) (Software)		<input type="checkbox"/>		
IT Foundation Learning			<input type="checkbox"/>	
BTEC Certificate in IT Users				<input type="checkbox"/>
Level 2				
OCR IT Diploma in Software Development	<input type="checkbox"/>			
BTEC IT Diploma Hardware and Networking	<input type="checkbox"/>			
BTEC Diploma in Information and Creative Technology (Software)		<input type="checkbox"/>		
BTEC Diploma in IT (Software)		<input type="checkbox"/>		
BTEC IT General			<input type="checkbox"/>	
BTEC Diploma IT System Support (H&N)			<input type="checkbox"/>	
BTEC Diploma in IT Users (Software)				<input type="checkbox"/>
Level 3				
BTEC IT Subsidiary Diploma in Software Development	<input type="checkbox"/>			
BTEC IT Diploma in Software Development	<input type="checkbox"/>			
BTEC IT Extended Diploma in Software Development	<input type="checkbox"/>			<input type="checkbox"/>
BTEC IT Subsidiary Diploma in Hardware and Networking	<input type="checkbox"/>			
BTEC IT Diploma in Hardware and Networking	<input type="checkbox"/>			
BTEC IT Extended Diploma in Hardware and Networking	<input type="checkbox"/>			
Applied Computing for IT Professionals (2 pathways)	<input type="checkbox"/>			
Advanced Computing for IT Professionals (2 pathways)	<input type="checkbox"/>			
BTEC Extended Diploma in IT and Software Development		<input type="checkbox"/>		
BTEC IT Diploma General			<input type="checkbox"/>	
BTEC Diploma IT System Support (H&N)			<input type="checkbox"/>	
BTEC Extended Diploma (Business)				<input type="checkbox"/>
BTEC Extended Diploma (Networking & System Support)				<input type="checkbox"/>

**Oldham
College**
Tameside
**Hopwood
Hall**
**Manchester
College**

Employer Facing/Full Cost

ITQ's	<input type="checkbox"/>			
Advanced Apprenticeships (IT & Telecoms Professionals)	<input type="checkbox"/>			
CISCO accredited - courses - Sem 1, Sem 2	<input type="checkbox"/>			
CompTIA accredited - courses (Strat, A+)	<input type="checkbox"/>			
Microsoft Academy Accredited courses (Microsoft Office Specialist)	<input type="checkbox"/>			
Repair your PC	<input type="checkbox"/>			
Home Networking	<input type="checkbox"/>			
Bespoke Delivery to Employers	<input type="checkbox"/>			
EDL Certificate for IT Users Part 1		<input type="checkbox"/>		
EDL Certificate for IT Users Part 2		<input type="checkbox"/>		
Web Design (Beginners)		<input type="checkbox"/>		
Web Design (Intermediate)		<input type="checkbox"/>		
Computers Made Easy			<input type="checkbox"/>	
Improve Your Computer Skills using Microsoft			<input type="checkbox"/>	
CISCO with CCNA				<input type="checkbox"/>
ICT Systems and Principals leading to CompTIA A+				<input type="checkbox"/>
Level 2 IT Technician (CCNA Semester 1 exam alongside M/Soft MTA Qual)				<input type="checkbox"/>
Level 3 IT Technician with CCNA and Microsoft				<input type="checkbox"/>

HE

FdGg - Business & Software Engineering				<input type="checkbox"/>
FdGg - Computer Network Managements				<input type="checkbox"/>
FdGg - Network Security				<input type="checkbox"/>
FdGg - Computer System Support				<input type="checkbox"/>
FdGg - Mobile Platform Development				<input type="checkbox"/>
FdGg - Business Computing with IT				<input type="checkbox"/>

Appendix 4 - Go ON Manchester: promoting digital skills across the city

Go ON Manchester raises the awareness of the importance of digital skills.

Digital Champions become informed about the ICT skills training available in the community, and signpost and hand-hold to entry level provision. Digital Champions build and develop their own skills, not only as champions/mentors, but also in ICT as they learn from each other and with the people they support. Manchester will also be signposting residents and business to resources and courses which will encourage them to develop skills and potentially become digital champions themselves.

Business partners are also encouraged to utilise their own networks, skills and support for other businesses and residents to reduce the digital divide. Go ON Manchester harnesses activity taking place across the city.

There is community access to free ICT facilities and connectivity across the city, in Libraries, community centres, UK online centres, Unionlearn centres, workplace learning centres, and Adult Learning Centres.

Digital Champions network with one another and enable skills sharing and development. They also help people to step over the threshold and support them on a one to one basis. Both elements contribute to raising skill levels across the city. The priority is getting people started but this could open up a pathway to more advanced training and skills development. Many older people have creative and other skills but have not had opportunity to apply them in a digital context – with appropriate training and support they could be encouraged to develop programming and digital media skills.

The Go ON Manchester campaign is promoting training courses, resources and access points to residents and businesses across Manchester. Anyone who signs up to be a digital champion is also offered a free course delivered by MAES around what that means and opportunities available. Anyone with digital skills across the city is also being asked to register themselves as a digital champion. Starting with businesses and existing volunteer groups, and continuing with MCC staff and Manchester residents.

MAES is taking the lead within Go ON Manchester in providing digital courses, including new courses for Digital Champions. These are provided in a range of locations, including libraries and other local ICT access centres. There are also facilities for the loan of laptops. These local ICT access centres and the courses they provide are now available on the MyArea section of the Manchester City Council website and the Go ON campaign is working with MAES, Libraries and Regen to ensure the widest possible promotion to new and existing students. This work is also closely aligned with the new Libraries Strategy to support the co-location of new library facilities, including public Wi-Fi access, linked to both existing and new ICT access centres.

Private sector growth in skills training includes an explosion in social media clubs, coding clubs across the city. Coding clubs are a growing culture in Manchester and are recognised and attended by both independent developers and marketers, as well as representatives of larger organisations. Growth in private sector led digital champion programmes are also increasing nationally, which can also have a positive impact on skills growth in Manchester (e.g. the BT Digital Champions programme with schools).