

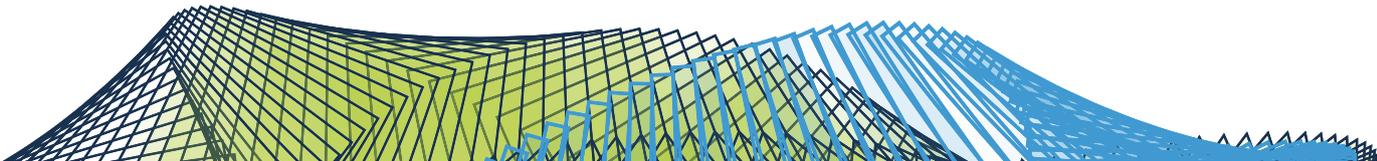
— DRIVING  
INDUSTRIAL STRATEGY FOR  
NORTH WEST GROWTH  
— THE ROLE OF  
THE CREATIVE INDUSTRIES



**TRANS  
FORMA  
TION NW**

A DOCTORAL PROGRAMME IN  
DESIGN & CREATIVITY

# SUPPORTED BY



# FOREWORD

This report comes at a time when there is an increasing emphasis on place-based strategies that promote investment in skills and talent for regional growth. There is also a clear recognition that the ‘triple helix’ of industry, government and academia working together benefits place-based productivity and growth. The report has been produced as part of a programme of work by a cohort of twelve doctoral students from five universities funded by the Arts and Humanities Research Council to undertake interdisciplinary collaboration with large and small-scale businesses. The programme will identify unexplored opportunities and challenges to deliver new products and service opportunities for business in the North West. Hence the group’s name ‘Transformation North West’.

The North West hosts the largest creative cluster outside London. Design is the fastest growing division of the creative sector<sup>1</sup> and cuts across the whole economy. It has a vital role to play in accelerating ideas from lab to market<sup>2</sup>, using the horizontal nature of design, and it clearly has the potential to work across multiple sectors to introduce new technologies that are of relevance to a number of supply chains<sup>3</sup>. Clearly, we want to retain the talent we have in the North West. Graduate retention is a critical issue<sup>4</sup>, and employers surveyed by the DBA and BIDA identified a shortage of industry-ready designers, and a need to improve the retention of talented researchers by SMEs and microbusinesses. This programme aims to do just this.

Our approach is to enable the creative talent and techniques of the twelve doctoral students to support the Industrial Strategy, in a manner appropriate to the characteristics of businesses located in the region and to ultimately unlock the creative intelligence of the North West. We will draw on the research excellence in design and the creative sector, and at each of the university partners to support growth and scale up the Creative Industries cluster in the North West whilst enhancing and contributing to the wider industry<sup>5</sup>. The value of combining STEM and creative skills, upon which much of the economy increasingly relies<sup>6</sup>, will be recognized. A cross-industry approach that ensures the fusion of STEM with the creative sector, and that different elements are not developed in silos, will be taken, whilst integrating place-based responses that create conditions for a sustainable, resilient and inclusive economy.

This report is just the first of a series of outputs from the Transformation North West Initiative. It sets the scene in terms of the creative, digital and design sectors, and highlights the challenges and opportunities for growth. Our doctoral researchers will be using this as a basis for a programme of collaborative work with companies, by co-creating projects, undertaking the work and promoting the outcomes in the North West. If you are interested in working with us, please do get in touch.

## **Rachel Cooper OBE**

Distinguished Professor of Design Management and Policy  
Lancaster University

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1 DCSM, 2014.  
2 Design Council, 2017.  
3 DBA, APDIG and BIDA, 2017.  
4 GO – Science and Foresight, 2016.  
5 Creative Industries Federation Industrial Strategy Response, 2017.  
6 Siepel et al., 2016.

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Transformation North West in action.  
A residential at Lancaster University shows a new approach to PhD study.

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This document has been developed as part of Transformation North West, a doctoral training programme launched in October 2017. The programme comprises of a cohort of twelve interdisciplinary PhD researchers working collaboratively, supported by five universities in the North West: Lancaster, Liverpool, Manchester, Manchester Metropolitan, and Salford.

The research programme is being made possible with funding from the Arts and Humanities Research Council through the North West Consortium Doctoral Training Partnership. By adopting a practical and non-traditional approach to PhD study, the researchers will collaborate on a series of projects with businesses and organisations in the North West, exploring challenges that influence productivity in response to the Industrial Strategy. This work will feed into the cohort's individual theses.

# ABOUT THE AUTHORS

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**Janett Adler** is a Graphic Designer by profession, now based at Manchester Metropolitan University. She graduated from Berlin's Lette-Verein, and studied for her Masters at Cambridge's School of Art. Her PhD research interest is a crossover of design practice and satellite and space technologies. With 14 years of commercial and non profit experience in-house and agency (WPP), Janett has been 'living' graphic design across Europe, the Middle and Far East.

#satellite and space technologies  
#graphic design #design practice  
#brand development



**Ben Blackwell** completed a BA (Hons) and March in Architecture at Manchester School of Architecture and has worked as an architectural assistant at a firm in Manchester. Through this experience he has developed skills in both design and academic research. His previous work has dealt with topics such as infrastructure and urbanism as well as in iconicity in Architecture.

#Regeneration #Urban Design #Large-scale Urban Development #iconicity in architecture



**Ian Costabile** is a composer and sound artist based in the department of Music at the University of Liverpool. He holds a BA degree in Composition (FMU, Brazil) and an MA in Art Aesthetics and Cultural Institutions (University of Liverpool). His research explores new approaches to music composition and soundscape recording through mixed-media and digital art, with a focus on sound spatialisation and sensor-based interactive media.

#music composition #soundscapes  
#curatorial knowledge #interactive media



**Lee Omar** is CEO of Red Ninja, a design led technology company, that co-create technology and Internet of Things (IoT) products for healthcare, transport, energy and urban planning sectors. He is a global expert on smart cities, advising the UK and Indian governments. Most recently he has been working with Google on IoT R&D for health and social care in cities. Lee is based at Lancaster University.

#smart cities #Internet of Things  
#healthcare #enterprise



**Catharine Partha** came to the UK from Canada to do an MSc at the London School of Economics and is now based at Lancaster. A published author, she has worked as a curator and art gallery director in Mayfair; for the architect Norman Foster; and has run a luxury womenswear label. She has a degree in International Relations from the University of Toronto and a Diploma from London's Architectural Association.

#sustainability #architecture  
#migration trends #mobilities



**Veronica Pialorsi** is a media psychologist based in the Arts & Media Department at the University of Salford. She holds a BSc in Psychology and a MSc in Clinical Psychology completed in Italy, and a further specialisation in Media Psychology, at the University of Salford. With a strong interest towards innovation and new media, she researches the processes behind people's interaction with technology to inform the design of user-driven technological tools.

#media psychology #interactive technology  
#digital inclusion #health and technology



**Alexandros Kallegias**, based at the University of Liverpool, is leader and instructor with the Architectural Association in the UK, Greece and Turkey; a lecturer at UCL, and has previously taught at Oxford Brooks and the University of Liverpool. His practice background includes Senior Architect at Zaha Hadid Architects, acting as BIM Coordinator for numerous international projects.

#architecture #design research and computation #biomimetics  
#animated kinetic prototypes



**Phoebe Kowalska** specialises in Design Strategy, Design Futures and Design-driven innovation. She uses intuitive sensibility and brand awareness to create unique service and product opportunities, in pursuance of cultivating value creation. Phoebe's research looks to explore the conscious and subconscious manifestations involved in the re-appropriation of everyday objects whilst reflecting on the contemporary experience economy. Phoebe is based at Manchester Metropolitan University.

#Subconscious Re-appropriation #Value Creation #Experience Economy Innovation  
#Everyday Objects



**Gemma May Latham** is a participatory artist who works with cultural industries to engage the public via the intersections of material craft and digital technology. She is interested in the transformative qualities of making, she seeks to capture, interpret and make explicit subconscious experiences. Now based at Manchester Metropolitan University, Gemma seeks to explore our understanding of digital skill and craft labour.

#future skills #digital making #gaming  
#rewarding work



**Jess Robins** is interested in how communities are created and how they remain active and productive. With experience in education and training, Jess has taught digital skills, English as a Foreign Language, and sailing. Recently, she has worked as a designer on social media campaigns for business and non-profits; and designed learning programmes in the public sector. She is now based at Lancaster University.

#engagement #community building  
#placemaking #sustainability



**Jemma Street** is based in the University of Liverpool's School of Architecture and holds a BA in Fine Art (Oxford University) and MA in History of Design (Royal College of Art). Working within internationally significant collections and museums, she has researched visual content for publications and products in both the commercial and heritage sectors. Jemma has collaborated on a number of image digitisation projects and her doctoral research aims to bridge analogue and digital visual technologies.

#photography #architecture  
#archives #visual curation



**Laura Wareing** has worked for over five years in ImaginationLancaster at Lancaster University on several co-design and knowledge exchange focused research projects; designing interactive tools and processes to support and facilitate co-design. Laura has a degree in Industrial Design and a Masters in Multi-disciplinary Design Innovation both from Northumbria University in Newcastle upon Tyne.

#co-design #health and wellbeing  
#design practice #services

# EXECUTIVE SUMMARY

The following document has been created in response to the UK Government's Industrial Strategy White Paper<sup>1</sup>, published November 2017, which proposed recommendations for the improvement of local and national economic growth and productivity. A cohort of twelve doctoral researchers spanning five universities have worked collaboratively as part of the Arts and Humanities Research Council (AHRC) funded 'Transformation North West'<sup>2</sup> programme to reflect upon the Strategy, with the aim of highlighting the role the Creative Industries, and creative skills in general, should play in the growth of the economy of the North West and beyond. For the cohort, this document forms the first step towards seeking further collaboration with industrial partners, companies and institutions, in order to co-create a range of projects, which will aim to encourage and increase growth in the region.

The cohort has drawn upon a range of sources to produce this document, focusing on five main themes:

Place and Community

People and Technology

Skills and Education

Entrepreneurship and Value Creation

Leadership and Policy

For each theme, we begin by describing the general landscape, setting the scene and outlining the challenges and opportunities for growth in the region. A series of **provocations and interventions** then follow, in which we suggest potential opportunities open to people in creative roles to actively drive improvement in the economy, productivity and quality of life in the region. These aim to stimulate ideas, debate and discussion. To conclude, we propose a range of **recommendations and ideas for potential projects**, suggesting potential opportunities open to people in creative roles for actively driving improvement in the economy, productivity and quality of life in the region.

## Place and Community

Place and Community asks how the Creative Industries could strengthen the entire region, drawing in local people to shape places and services and improve infrastructure. Some of the key recommendations are:

Creative design processes and methods could be better utilised by place-makers and planners to encourage community participation in the shaping and remodeling of both urban and rural areas. This approach would ensure that more voices are heard, and that spaces, services and products are developed to better serve the needs of local communities, whilst attracting business investment to the region.

<sup>1</sup> BEIS, 2017c.

<sup>2</sup> See page 5 for information on Transformation North West.

The design of more inclusive and locally sensitive systems of development could potentially enable policy makers to better influence wider systems of change. Incentives could be a key tool in achieving this, allowing policy makers to shape development processes in a way that is embedded into a place-specific ecology.

Creative processes can play a key role the generation and implementation of ideas for the diversification of land-based industries, such as farms in rural areas. The Creative Economy could be key to growing tourism in the region, drawing in visitors with the design and delivery of creative and enjoyable experiences and the shaping of the infrastructure to support it.

Collaborative design processes could act as a way of ensuring vital infrastructure improvements in the North West respond appropriately to the needs of the communities that use them.

**We propose the co-creation of projects with industrial partners in the North West that develop a holistic approach to improving economic resilience, inclusivity, quality of life and connectivity both within and beyond the region.**

## Technology and People

Technology and People asks how technological advances, such as automation boost the region's economy, whilst having a positive impact on people's lives in the future. Key recommendations are:

Creatives have the potential to act as catalysts for collaborations between industry and cultural institutions, stimulating innovation and introducing new audiences to advancements in technology. Established cultural institutions could help with the transfer of new technologies into common usage.

The North West has many technology-based SMEs as well as big industry players: global innovation will have a direct impact on these regional industries. Through the creation of well networked hubs of communication and education, existing and new generations of workers would be able to develop their skill sets and knowledge using contemporary tech applications with creative, artificial intelligence, or robotic systems.

Designers could play a valuable role in helping alleviate concerns over the atomisation of low-skilled jobs. Effectively designed processes are needed to ensure that new ways of working alongside automation are accessible not only to highly skilled workers, but to everyone.

Participatory design processes, can be used to implement people-centred and accessible technologies that foster social inclusion. Such approaches will meet people's needs and enhance the quality of life across all age groups in the North West.

**We propose projects that utilise artificial intelligence to promote digital inclusion, improve the delivery of services and develop architectural techniques using digital fabrication tools. We also propose projects that engage with the aerospace and advanced manufacturing industries to improve their innovation processes.**

## Skills and Education

Skills and Education asks how skills can be enhanced by people working in creative roles to improve productivity, economic performance and improve digital inclusion in the future. Some key recommendations are:

In order to ensure that the right skills are developed for a potential post-discipline future, a cross sector approach, one that values existing skills alongside the new, could be vital. In a fast-changing economy, creatives have the potential to intervene and find new ways to assess, and disseminate, those skills that are vital for growth and productivity.

Designers and creatives have the potential to affect future education policy and change perception of creative skills. Creatively combining both digital and analogue ideas could highlight the contribution that creative skills make to the wider economy and how they could impact education.

Creative approaches to learning will support work readiness in the young whilst supporting the continued participation of the ageing workforce. Opportunities for intergenerational learning will be valuable to the development of future skill requirements; with notions of skill sharing and vertical cross-generational learning having additional multiple benefits to education and the broadening of skills within the community. Designers are well placed to implement this.

Design could foster new creative approaches that could tackle complicated issues such as the slow adoption of technology and the digital skills gap, particularly among the ageing workforce. Tailored, flexible strategies providing people the skills needed for coping with the digitalisation of jobs, and living healthier, independent lives should be key goals for future economies.

**We propose projects that assess the skills requirements and produce a toolkit for the current workforce in the automotive and manufacturing sectors.**

## Entrepreneurship and Value Creation

Entrepreneurship and Value Creation asks how creative and digital entrepreneurship in the region can be encouraged and better supported. Key recommendations include:

The North West possesses numerous creative clusters; sub-regional hubs for promoting creativity within business. These hubs can act as 'test-beds' for industries trialing new products and services. There should be more cross-industry collaboration to find new ways for creating value for products and services.

Creatives could support Community Interest Companies in maximising opportunities provided by the North West Investment Fund. By sponsoring designers to generate the sustainable re-purposing of vacant commercial properties for example, new spaces could be developed for entrepreneurs and SMEs, to encourage networking and collaboration.

Creatives can help open up conversations between entrepreneurs and funders, improving access to information. Through increased understanding of innovative processes, funders could be encouraged to lend to 'high risk' start-ups producing new products or services. This may require changes in policy to allow banks to take on some of the risk, and shifts in attitudes towards perceived 'success' and 'failure'.

Design processes can potentially assist in the attraction and retention of start-up firms in the North West, building a landscape in which cultural assets, knowledge exchange and intergenerational collaboration can be perceived in new ways. This shift could allow for emergent and entrepreneurial thinking in the region, creating added value for the North West.

We propose projects that engage with creative industry hubs, such as incubators and co-working spaces to boost the export potential of creative SMEs across the North West. We also propose undertaking projects with science research bodies to better understand the way in which they impact on urban ecologies.

## Leadership and Policy

Leadership and Policy asks how a strong, representative leadership across the region can be encouraged and how Local Enterprise Partnerships (LEPs) can improve support. Key recommendations include:

We believe that design principles could be leveraged to develop policy in the region in order to create fit-for-purpose and inclusive leadership policy.

We believe that people who use creative skills should consider the points raised in the Industrial Strategy and reflect on how they could bring value to emerging areas such as artificial intelligence and robotics, potentially enabling them to establish leadership roles in those sectors.

Many of the region's future creative leaders work in micro-companies or are freelancers. Creatives should be encouraged to come together and lobby LEPs in the region to create a Creative and Digital Board, which should be represented on the main LEP board and could be based on the Liverpool Creative and Digital Board model.

Emerging creative leaders should collaborate with universities on projects that sit across the private and public sector, adding value to the region by raising productivity and driving a rise of gross value added (GVA).

**We propose projects that increase awareness about the importance of technology and its uses, aiming to specifically reach underrepresented groups. We also plan to work with Community Interest Companies (CICs) in the region to explore how the CIC model holds the potential to foster collaborative, sustainable and socially inclusive ways of working.**

Throughout this document, we have demonstrated how the Creative Industries can play a key role in facilitating collaboration, connecting people and places, engaging diverse groups, fostering inclusion and enhancing wellbeing. The potential of the Creative Industries and more broadly, creative skills can reach across all sectors of the economy. We believe that the skills of Creative Industries can be leveraged to drive the creation of innovative technology, support businesses across sectors and improve the lives of people in communities for a sustainable, resilient and inclusive economy.

We would like to invite anyone who is interested in working with us to please contact us:

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# INTRODUCTION

The UK's world-renowned Creative Industries are currently growing faster than any other sector in the country. They employ over two million people, represent over five per cent of Britain's economy and generate £91.8 billion of GVA<sup>1</sup>.

This document aims to underline the ways in which the Creative Industries can unlock growth in the North West of England and the need to value, support and nurture the rich seam of talent that runs throughout the region.

## The Industrial Strategy

In November 2017, the UK Government published its Industrial Strategy White Paper<sup>2</sup>, which made recommendations for economic growth and increased productivity at local and national levels. Crucially, the Strategy acknowledges the Creative Industries as an important economic strength in Britain. It also recognises the need to strengthen and reinforce the UK's standing as a world leader in innovation and creativity if it is to compete in an increasingly competitive international marketplace. It explores this through what it refers to as the 'five foundations of productivity': 'Ideas', 'People', 'Infrastructure', 'Business Environment' and 'Places'.

## The Creative Industries

In our document, we use the definition from the Department for Digital, Culture, Media & Sport (DCMS), who broadly define the Creative Industries as having their "origin in individual creativity, skill and talent and which have a potential for wealth and job creation through the generation and exploitation of intellectual property"<sup>3</sup>. Creativity has been defined as "the generation of new ideas – either new ways of looking at existing problems, or of seeing new opportunities"<sup>4</sup>.

*There are nine sub-sectors that constitute this industry, as defined by the DCMS<sup>5</sup>:*

1. Advertising and marketing
2. Architecture
3. Crafts
4. Design: product, graphic and fashion design
5. Film, TV, video, radio, and photography
6. IT, software, and computer services
7. Publishing
8. Museums, galleries, and libraries
9. Music, performing and visual arts

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1 DCMS, 2016.  
2 BEIS, 2017c  
3 DCMS, 2015.  
4 Cox, 2005, p.2.  
5 DCMS, 2001.

Within the industries, design is the fastest growing sub-sector<sup>6</sup> and the emerging field of ‘creative technology’, the interaction of creativity and technology, has been growing at a particularly rapid rate<sup>7</sup>. The value of creativity extends far beyond the specific sectors defined above; many other sectors, such as automotive, aerospace, financial and professional services, and life sciences do benefit greatly from creative input, both directly and indirectly. Nearly a million people in the UK work in creative roles in sectors outside the Creative Industries defined by the DCMS, contributing, along with the Creative Industries, to the ‘Creative Economy’, generating £133 billion in GVA<sup>8</sup>.

Research shows that creative roles are three times less likely to be replaced by automated processes than the rest of the workforce in the future<sup>9</sup>. Consequently, there is a growing demand in businesses and organisations for skills typical of creative practitioners, including problem solving skills and “flexibility across teams and projects”<sup>10</sup>. Within the region and across the country, the Creative Industries have the potential to enrich and enhance the quality of life, shape more desirable and inclusive places to live and work; drawing in more talent, attract inward investors and increasing employment opportunities.

## This Response Document

Through the creation of this document, we, a group of PhD researchers, part of the Transformation North West programme<sup>11</sup>, will examine some of the areas in which creativity can unlock growth and increase productivity. It will explore opportunities for employment, improved wellbeing, and contribute to improvements in the economy. By responding to the Government’s White Paper and examining the economic challenges faced by the UK through the lens of creativity and innovation, we aim to explore the role played by the Creative Industries in the economic growth of the North West of England. We aim to stimulate discussion and dialogue regarding the region’s position, the vital contributions it makes to the UK’s economy, and the importance of the Creative Industries as ‘engines for growth’.

## The North West

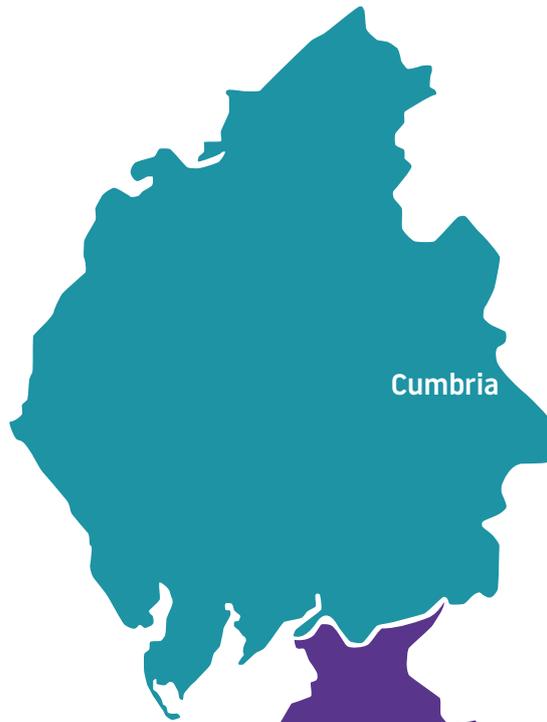
The North West of England, which encompasses Cheshire, Cumbria, Greater Manchester, Lancashire and Merseyside, represents the largest economy in the UK, outside of London<sup>12</sup>. It holds many strengths crucial to the economic health of Britain (see figure 1), including contributing more manufacturing to the UK than any other region<sup>13</sup>. Significantly, the North West also has the highest level of creative employment outside London, with 6.7 percent of jobs based in the Creative Industries<sup>14</sup>. Whilst not denying its industrial glory days of the past, the region must find new ways of becoming an international force to be reckoned with. The Creative Industries hold the potential to act as a key driving force in this mission, acting as fulcrums of innovation and catalysts for growth.

6 DCMS, 2016.  
 7 Creative Industries Council, 2017.  
 8 Siepel et al., 2016, p.5.  
 9 Bakhshi, Frey, and Osborne, 2015.  
 10 Design Council, 2018, p.13.  
 11 Transformation North West explained on page 5  
 12 TheCityUK, 2017.  
 13 Young and Sly, 2011.  
 14 Siepel et al., 2016.

# STRENGTHS IN THE NORTH WEST

## The North West

- Largest economy outside London.
- Contributes more to UK manufacturing industry than any other region.
- 34% of workers employed in small businesses with less than five employees.
- Highest level of creative employment outside London.
- Significant energy generation capacity, contributing £3.1billion to the regional economy.



## Cumbria

- Key sectors include energy and specialist manufacturing.
- Other key sectors include food and drink and hospitality.
- Tourism brought £2.72 billion to regional economy in 2016.

## Lancashire

- Number one in the country for aerospace.
- Other key sectors include, advanced manufacturing, energy and chemical sectors.
- 5.6% of jobs in Creative Industries.



## Greater Manchester

- The UK's second largest economy.
- Attracting more foreign direct investment than any other city outside London.
- Key sectors include research, manufacturing and life sciences.

## Merseyside

- One of fastest growing economies in England.
- Largest concentration of biopharmaceuticals in Europe.
- Key sectors include advanced manufacturing, digital and creative and health.

## Cheshire

- GVA 17% higher than national average.
- Most productive area in region.
- Key sectors include advanced manufacturing, aerospace and pharmaceuticals.

Figure 1  
Map showing strengths in the North West.  
References for figure 1 are included in  
the Bibliography.

## The Origin and Structure

This document therefore seeks to examine the current creative landscape of the North West. It identifies how the region can maximise its existing strengths in the sector, to create both a balanced national economic picture, and a stronger position globally. Drawing upon a range of sources, and with support from academics at the institutions mentioned above, we have conducted a broad overview of the economic challenges facing the North West, whilst outlining potential solutions offered by the creative industries for the region's growth. We have focused on several topics central to the Government's Industrial Strategy. Narrowing these down further to five key themes, which form the basis of our response document:

**Section one**, *Place and Communities*, highlights the diversity of the region. It suggests how the Creative Industries can build metaphorical 'bridges' between communities to strengthen the economy. Questions raised in this section include how best to connect the North West's 'jigsaw' of varied urban and rural localities, the creation of a holistic approach to infrastructure, and how local people can be involved in the 'democratised' development of places and services.

**Section two**, *Technology and People*, discusses the North West's strengths in technology and the creative sector. Examining how technological advances hold the potential to boost the region's economy, whilst impacting positively on people's lives in the future. It raises questions about opportunities for innovation and support for areas beyond the cities of Manchester and Liverpool, and explores the ethical implications surrounding certain technologies.

**Section three**, *Skills and Education*, emphasises the need to redefine the basic skills that are required in order to improve productivity and economic performance, with importance placed on digital and creative skills. This section discusses the need to breakdown subject segregation in formal education to effectively combine creativity across all areas of study and training. It also discusses the integration of creative and technical skills and digital inclusion.

**Section four** focuses on *Entrepreneurship and Value Creation* and explains the distinct advantages of establishing and running a business in the North West. By examining the opportunities available to those working within the Digital and Creative Industries in the region, the section raises a number of points: including, the importance of improved access to finance for potential entrepreneurs in the North West; the removal of the stigma associated with failure, especially in new start-ups; and the encouragement of entrepreneurial skills in children and young people.

**Section five**, *Leadership and Policy*, explores the necessity for strong, representative leadership across sectors and locations in the North West, with the aim of creating a cohesive, 'united front' in the region. It poses questions concerning gender diversity in leadership, the need for increased collaboration between leaders at different levels of power, and the improvement of Local Enterprise Partnerships (LEPs) who determine local priorities to drive economic growth, to better represent the many SMEs operating in the region.

We have included a glossary that gives our definitions to terms used in this document.

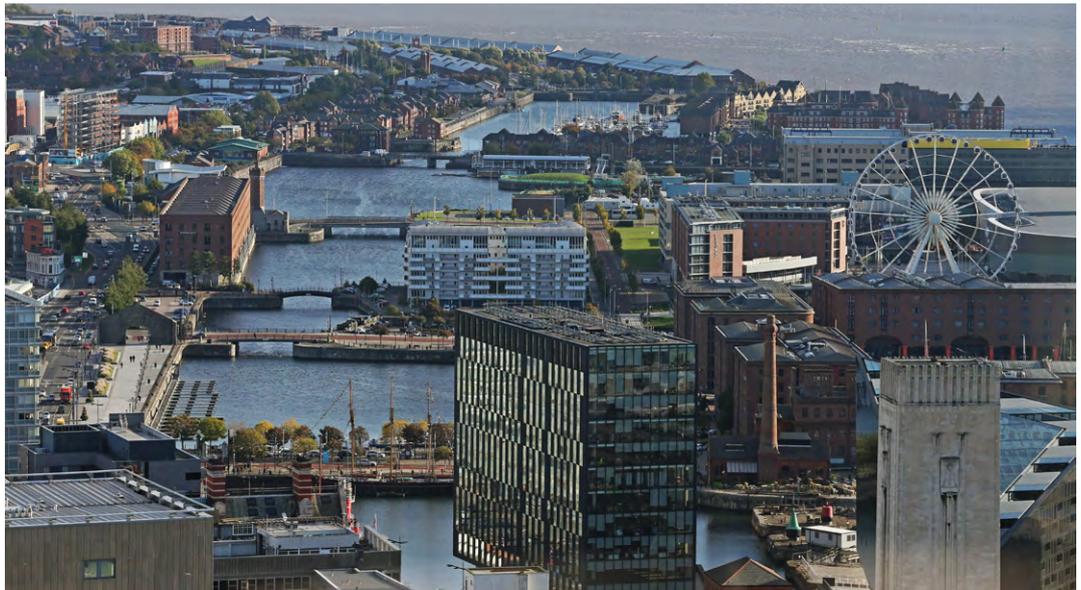
This document will be the starting point for conversations with other academics, businesses, local government, and other potential collaborators with whom we might form partnerships to develop exciting and innovative projects to contribute to the growth of this great region.

# — PLACE AND COMMUNITIES

## 1

From the urban 'powerhouse' cities of Manchester and Liverpool, to rural Cumbria, the North West encompasses a rich variety of environments and diverse communities<sup>1</sup>. A bespoke approach to improving economic growth is therefore required for a thriving region. The Northern Powerhouse initiative, discussed further in Leadership and Policy, is a major factor that will shape the North. Whilst much of the focus of this scheme is on Manchester and other urban centres, small and medium-sized towns and cities are also incredibly important, making up almost a third of the North's economy<sup>2</sup>. Rural areas have also been described as "crucial to the prosperity and wellbeing of our nation as a whole"<sup>3</sup>.

'Places' makes up one of the five key foundations of the Government's Industrial Strategy White Paper. The White Paper posits that that local institutions and businesses must be at the forefront of change throughout the country, offering their expertise as a way to ensure that development is locally relevant and enhances the area<sup>4</sup>. However, we believe this change must be inclusive, open to as many stakeholders as possible, to reflect the diversity of each place. The Creative Industries are ideally placed to improve engagement and connectivity between communities and locations, bridging both physical and intangible gaps, whilst offering the potential to strengthen the economy. To understand this 'bridging effect' it is essential to define what we mean by 'place' and 'communities' and explore their relevance to the economic growth of the North West.



Bridging the centuries between the first industrial era and the 21st Century at Liverpool's docks.

1 Young and Sly, 2010/2011.  
2 Cox and Langlands, 2016, p.4.  
3 Antink, 2017.  
4 BEIS, 2017c, p.220.

‘Place’ relates to physical space that has acquired “definition and meaning”<sup>5</sup>. This ‘meaning’ is “subjective, imagined and emotional”<sup>6</sup>, unique to individual users of the space. Networks, including “infrastructures for communication and transportation, and social, ecological and economic networks”<sup>7</sup>, are key to an individual’s engagement with a space; creating a place’s identity.

A ‘community’ is a collection of individuals connected by something shared<sup>8</sup>. This could be values, a place of residence, identity, politics, practice, or an interest. Communities can be networks of residents, businesses, academics, and many others. However, these communities should not be considered distinct from one another, or confined within geographical boundaries. Instead, all places should be seen as dynamic ecologies, consisting of interdependent community networks in which a holistic approach to issues such as housing, economic and business needs, should be taken.



**The Creative Industries are ideally placed to improve engagement and connectivity between communities and locations.”**

### Growth Beyond Cities

There is a place-based divide in the UK, affecting the remote rural areas of the North West, such as some areas in Cumbria, along with coastal, and former industrial areas. The Social Mobility Commission placed three areas of the North West in the top twelve cold spots for social mobility in the UK<sup>9</sup>, claiming that these areas are “being left behind economically and hollowed out socially”<sup>10</sup>. Remote and rural areas, which are often cut off from broadband access<sup>11</sup> and transport links, tend to be forgotten by devolution deals and combined authorities<sup>12</sup>, compounding the problems of poor social mobility. Design processes can help unlock the needs of communities, enable different people to collaborate, and deliver solutions to address social and economic issues<sup>13</sup>. Service designers at Live|Work have co-designed better rural transport services in Northern England, stating that they have helped to “better connect things they were doing already” by facilitating a framework for collaboration<sup>14</sup>.

Literature and policy has mainly focused on the creative city<sup>15</sup> but many creative practitioners choose to be based in remote and rural locations, finding it a source for inspiration, brand identity and raw materials. Research shows that these practitioners benefit from connecting in temporal clusters<sup>16</sup>, such as training and knowledge exchange events, and festivals. Rural areas in England contributed an estimated £229 billion GVA in 2014, approximately a fifth of the UK’s total economic activities<sup>17</sup>. The LEP in predominantly rural Cumbria also claimed that the visitor economy, alongside the rural economy is ‘critical to the success’ of the area<sup>18</sup>.

The Creative Industries are important in helping to diversify rural economies, supporting tourism and bringing communities together<sup>19</sup>. These industries have “parallels and overlaps”<sup>20</sup>: art, performance and museums are an important part of tourism; while creative organisations can include community outreach programmes which aim to benefit the local community through education and participation in the arts. A good example of this is Theatre by the Lake in Cumbria which is supported by Department for Environment, Food and Rural Affairs (DEFRA)<sup>21</sup>.

5 Tuan, 1977, p.136.

6 Drake, 2003, p.513.

7 Heeres et al., 2017, p.413.

8 Warren and Jones, 2015, p.5.

9 Social Mobility Commission, 2017.

10 Ibid., p.iv.

11 Townsend, 2013.

12 RSA, 2017.

13 Burns et al., 2006.

14 Ibid., 2006.

15 Harvey et al., 2012.

16 Ibid., 2012.

17 House of Lords, 2016.

18 Cumbria LEP, 2017.

19 Arts Council, 2017.

20 Long and Morpeth, 2016, p.14.

21 Theatre by the Lake, n.d.

## Creativity Connecting Place and Communities

The Creative Industries can connect communities, improve spaces, services, and the economy. One example is placemaking: the improvement of a physical place with “community based participation at its centre”<sup>22</sup>. Creative People and Place run placemaking projects in the region, stating that “locally driven, locally relevant work reaches more people”<sup>23</sup>. Projects includes LeftCoast in Blackpool and Wyre, and Super Slow in Pennine, Lancashire, bringing organisations and arts together to improve places, engaging local people as co-creators. Deco Publique in Morecambe co-produce placemaking events and projects including Transatlantic 175 in Liverpool, National Festival of Making in Blackburn, and Vintage by the Sea in Morecambe. The latter bringing together art, design, music, fashion and more, filling every hotel within a fifteen mile radius and boosting the local economy by an estimated £1 million<sup>24</sup>.

Initiatives like the Design Council’s Community-Led Development programme outside the region<sup>25</sup>, and the Granby Four Streets and Ten Streets<sup>26</sup> projects in Liverpool are all examples of projects which nurture existing assets using a creative, people-centred approach to economic growth. This engagement has resulted in spaces that are more likely to meet a community’s needs and create effective partnerships through increased confidence in community groups<sup>27</sup>. Partnerships between community groups and public organisations can also shape public services. This establishes a ‘working relationship’ between the two and helps them both to “understand and act on the needs or issues that the community experiences”<sup>28</sup>. Cumbria County Council have adopted the Scottish Government’s Standards for Community Engagement (there is no equivalent in England), which encourages the use of creative methods for effective engagement<sup>29</sup>. Successful Ketso<sup>30</sup> and Leapfrog tools<sup>31</sup> have been designed in the North West for community engagement workshops.



**Vintage by the Sea brings together many creative arts, filling every hotel within a fifteen mile radius, boosting the local economy by an estimated £1 million.”**



Vintage by the Sea in Morecambe, Lancashire in 2017.

- 22 Project for Public Spaces, 2009.
- 23 Creative People and Place, 2017.
- 24 Lancaster City Council, 2016.
- 25 Design Council, n.d.
- 26 LCC and Partners, 2017.
- 27 CABE Space and Asset Transfer Unit, 2010.
- 28 SCDC, 2016.
- 29 South Lakeland District Council, 2012.
- 30 Tippet et al., 2015.
- 31 Leapfrog, 2017.

## Infrastructure and the Built Environment

The Industrial Strategy White Paper correctly identifies infrastructural improvement as a major component of its pillar on Place<sup>32</sup>. Physical infrastructure sustains communities but is significantly underfunded in the North West, with London receiving six times more spending per traveller on transport than the North<sup>33</sup>. However, office buildings, research facilities, workshops, and virtually all other aspects of the built environment also constitute crucial parts of the physical infrastructure. The design of our cities and towns and the buildings they contain are therefore important in facilitating connections between individuals and groups and are therefore essential in forming and sustaining communities. This is shown through Liverpool's Baltic Creative Community Interest Company (CIC) which is explored in more detail in the Entrepreneurship and Value Creation section. Museums and libraries also constitute an essential part of the North West's cultural and educational infrastructure, having been shown to help establish "healthier and happier communities"<sup>34</sup>. Large-scale schemes such as 'Airport City', 'Graphene City' and the £110m performance venue 'The Factory' in Manchester are all intended to serve communities far larger than their immediate locality. It will be important for policy makers to understand how these new schemes interact with, and shape, surrounding ecologies. Graphene City, for example, will provide infrastructure needed by national and international communities of scientists to continue ground-breaking work on the material graphene, but it also has the potential to have profoundly local effects, by initiating a transformation of the city's economy and built environment.

## PROVOCATIONS AND INTERVENTIONS

### The 'Jigsaw' of the North West

Rather than creating a centralised "'Greater London' in the North"<sup>35</sup>, the diverse environments of the North West should be acknowledged and embraced. IPPR North recommends "a better understanding of different 'types' of agglomeration", recognising "the importance of connectivity over concentration" and an acknowledgement of the "complementary roles played by different places within the northern urban ecosystem"<sup>36</sup>. It is important to consider how collaborations can be encouraged across the region, forming a "jigsaw of unique skills and really well thought-out city regions"<sup>37</sup>.

Economic networks, local procurement and supply chains, cultural and natural assets specific to place, should all be considered in a bespoke approach to the patchwork of urban, rural, and 'in-between' landscapes in a 'whole place' approach<sup>38</sup>. This does not preclude opportunities for progress but instead suggests that growth should stem from the unique strengths of each area.

Connectivity, both digital and transportation, is essential if the North West, and the North overall, is to be seen as an interconnected 'jigsaw'. This is of critical importance in the region. The Industrial Strategy Green Paper noted that it currently takes longer to travel from Liverpool to Hull by train than it does to travel from London to Paris despite it being less than half the distance<sup>39</sup>. Transport for the North (TfN) found that improving rail links could help the North's economy grow by £97bn and create 850,000 jobs by 2050<sup>40</sup>. IPPR North also recommends that "Transport for the North should take account of the complexity of the northern urban ecosystem"<sup>41</sup> rather than focus solely on large cities. Low transport funding for the North compared to London<sup>42</sup> is currently a barrier to this. The government should ensure that its funding for TfN includes smaller sub-regional rail links.

“Growth should stem from the unique strengths of each area.”

32 BEIS, 2017c, p.216.

33 Bounds, 2017a.

34 Innocent, 2009, p.5.

35 Harrison, 2016.

36 Cox and Langlands, 2016, p.4.

37 Quote from Dunn, CEO of Sunderland Software City, in Nesta, 2016, p.11.

38 Liverpool City Region LEP, 2016.

39 BEIS, 2017a, p.52.

40 Bounds, 2017a.

41 Cox and Longlands, 2016, p.5.

42 Bounds, 2017a.

## Holistic Infrastructure

A more holistic approach to infrastructure could be valuable, one where ‘infrastructure’<sup>43</sup> is seen beyond roads, rail and broadband. The way that buildings are used and the legal, political, and contractual systems that define those uses all contribute to the infrastructure that creates successful or unsuccessful networks. Measures must be taken to design transparent systems that tailor development to the unique qualities of place and the communities that use them. Currently, agreements between local authorities and developers put into place requirements to ease the negative effects of development, however, these requirements are routinely ignored<sup>44</sup> with little regard for the impact on existing communities.

## Design and Creativity Supporting Communities

In order to drive growth, communities should be positioned at the epicentre of place and service development. Experienced creative practitioners in the North West possess the skills and ideas to do this. For example, architects and planners who work with communities to ‘co-design’ housing and public spaces. Collaboration between groups with a variety of expertise can create strong concepts that form effective partnerships to empower communities. Design plays a role beyond traditional ‘product’ creation; facilitating processes that bring together different people, unlocking creative ideas and helping to implement them. Many organisations and academics<sup>45</sup> support community-led, or co-design approaches, including The Design Council and the RSA.

## Democratising Development

The sense of identity and ‘otherness’ which defines places is a source of strength in the North West, and would benefit from being expressed through diversity and inclusiveness. Visual tools can be used to overcome issues of communication, eschewing technical jargon and creating a ‘common language’<sup>46</sup>. The government should invest in towns, cities, and outlying areas. Funding schemes that encourage residents to identify their cultural unique selling points (USPs), could enable change and economic development to be shaped in a ‘democratic’ way.

## Linking Creative Hubs and Clusters

Creative hubs are “dynamic ecosystem[s] of creative spaces and communities” which act as “lighthouses for the new urban economy”<sup>47</sup>. They hold the potential to enable intensified, localised growth by strengthening the North West’s creative offering through collaborations, cross-fertilisation, and the pooling of ideas, skills and resources. They form physical environments conducive to increased production, employment, and economic growth. Research suggests that it is more efficient to use the existing strengths of a place, rather than trying to build a cluster from scratch<sup>48</sup>, strengths like “museums or HEIs; the fragmentation of a large creative company into a community of SMEs; or even the perception that an area is a fashionable place to be”<sup>49</sup>. Creative clusters cannot act as a simple ‘silver bullet’ intervention but should recognise the broader “talent and knowledge ecosystem”<sup>50</sup>, to better contribute to the overall growth of a region. The approach to clusters should be community-based creating “deep, often bespoke networks and programmes” with local stakeholders<sup>51</sup>. This must be well facilitated through transport and digital infrastructure in order to foster links with outlying areas and smaller creative businesses. The government and the AHRC’s £80 million Creative Industries Clusters Programme, should take these points into consideration<sup>52</sup>.

43 Easterling, 2014.

44 Wainwright, 2014.

45 Manzini, 2015; Sanders and Sappers, 2008.

46 Heeres et al., 2017, p.418. 47 British Council, 2016, p.1.

47

48 Van Der Linde, 2003.

49 Bazalgette, 2017, p.18.

50 Mateos-Garcia and Bakhshi, 2016, p.35.

51 Bazalgette, 2017, p.18.

52 DCMS et al., 2017.

## Economic Reach Beyond Cities

There should be more awareness, research and solutions proposed around the issues that face areas outside the main cities in the North West, including ‘in-between’, rural and coastal areas. Existing sources of strength, including communities, organisations, and businesses, should be built upon.

Efforts to improve living standards in these areas should be delivered, but not exclusively, through healthcare and public services, housing, and public transport. Creative organisations already delivering change include Green Close, “pioneering rural regeneration and positive social development through the arts”<sup>53</sup>, and Morecambe Community Collective, who are connecting organisations and the community to build a coastal town that “allows everyone’s health and wellbeing to improve”<sup>54</sup>. These exemplars could be built on to ensure that the North West grows as a whole.

## KEY RECOMMENDATIONS

In the remodeling of places, such as town centres and new public developments, creative design processes and methods could be utilised to encourage community participation. This would ensure that more voices are heard, and that spaces, services and products are developed to better serve their communities. This in turn could act as an attractive pull for businesses and start-ups looking for somewhere outside of the metropolitan centres, helping to attract more people to the region.

The design of more inclusive and locally sensitive systems of development could potentially enable policy makers to better influence wider systems of change. Incentives could be a key tool in achieving this, allowing policy makers to shape development processes in a way that is embedded into a place-specific ecology.

Creative processes can play a key role in the generation and implementation of ideas for the diversification of land-based industries, such as farms in rural areas. The Creative Economy could be key to growing tourism in the region, drawing in visitors with the design and delivery of creative and enjoyable experiences and the shaping of the infrastructure to support it.

We see collaborative design processes as a way to help ensure vital infrastructure improvements in the North West properly respond to the needs of the communities that use them. Members of the Transformation North West cohort would like to develop projects to implement these processes in new infrastructure projects.

<sup>53</sup> Greenclose, 2017.

<sup>54</sup> The Bay, 2017.

# — TECHNOLOGY AND PEOPLE

## 2

The digital era has been transforming the way we perceive and interact with the world. As communication, media, and place changes, our cultural and social development also changes. Consequentially, skills are replaced, new employment positions emerge, and industries need to develop strategies to fit into this new world. According to the Global Innovation Index 2017, the UK is one of the top global leaders in innovation, coming in 5th after Switzerland, Sweden, the Netherlands and the United States of America<sup>1</sup>. Promoting growth across all regions will preserve the competitive character of the UK.

In this section, we explore how the North West has been engaging people (professionals and consumers) within the digital era: from the technological and Creative Industries, to industries that are pioneering autonomous workforces.



“World’s most powerful aerospace gearbox starts high power testing.”



A.I. could add an additional USD \$814 billion (£630bn) to the UK economy”<sup>2</sup>.

1 Cornell University, INSEAD and WIPO, 2017.  
2 BEIS and DCMS, 2017.

## The Creative North West

The UK's Creative Industries are world leaders: music, television, films, games, fashion, design and architecture produced a notable 8.7% (£17.9 billion) of all UK exports in 2013<sup>3</sup>. The UK government acknowledges the significance of this sector, with its ability to maximise productivity, generate employment, and raise living standards. In response, the government is supporting the sector with large investments. The Department for Business, Energy & Industrial Strategy has announced that creative technologists building for the 'audience of the future' will benefit from investments of up to £33m over the next four years through the Industrial Strategy Challenge Fund<sup>4</sup>.

While London and the South East are the dominant creative clusters in the UK, the North West presents Greater Manchester as the leading hub for creativity and innovation. Liverpool, Chester, Crewe, Warrington, and Wigan come next as important areas of high growth<sup>5</sup>. MediaCityUK, based in Salford, is an extensive digital hub for established organisations and start-up enterprises. This includes offices and studios for broadcasters such as the BBC, who relocated several departments from London, thus generating more creative employment for the North West. The BBC has pointed out that, in part, the move was aimed at benefiting the audience in the North, using new technology to enrich the economy of the region<sup>6</sup>.

Other high concentrations of creative production can be found in Liverpool. Notable for the significant contribution of its universities<sup>7</sup> and spaces such as Baltic Creative Community Interest Company (CIC), which is explored in more detail in the Entrepreneurship and Value Creation section of this report<sup>8</sup>, and Sensor City, a new high-tech incubator specialising in sensors and Internet of Things (IoT) technology. Through this initiative, the Liverpool City Region aims to be the leading city for sensor technology in the UK<sup>9</sup>.

Lancashire is also an important area of growth, hosting around 4,600 companies in the creative sector; concentrated around Preston, Chorley, and Blackburn. Most enterprises are micro businesses with few employees, although there are a handful of large companies too.

Besides industries focused on manufacturing, consumption and advertising, the North West is also home to cultural organisations such as FACT (Foundation for Art and Creative Technology), HOME and The Lowry. With the rate of adult attendance of museums and galleries on the increase<sup>10</sup>, the work of institutions such as these play a significant role in actively engaging society and acting as a network for disseminating innovation.

## Future Technologies

Diversity in the application of technology is enabling innovation in many sectors across the UK economy: including health, banking, education, construction, manufacturing, legal services, and transportation<sup>11</sup>. At the same time, these sectors are also witnessing an increase in innovation through the use of robotic technology.

## A.I. and Satellite Technology

The UK government has identified important sectors for growth where it has a competitive advantage, including references to artificial intelligence and satellite technology<sup>12</sup>. Adopting emerging technologies, new techniques, methodologies and novel processes applied in the production of services and products, is fundamental for prosperity and growth. The North West contributes significantly to aerospace and satellite technology, with Lancashire having the highest concentration of aerospace production in the UK, with over 20,000 employed in the sector across 120 companies.

<sup>3</sup> DIT, 2014.

<sup>4</sup> BEIS, 2017c.

<sup>5</sup> Mateos-Garcia and Bakhshi, 2016.

<sup>6</sup> NAO, 2013.

<sup>7</sup> Mateos-Garcia and Bakhshi, 2016.

<sup>8</sup> Bazalgette, 2017; Nesta, Accenture and Catapult, 2016.

<sup>9</sup> Liverpool City Region LEP, 2016.

<sup>10</sup> Arts Council England, 2016.

<sup>11</sup> Deloitte, 2015

<sup>12</sup> BEIS, 2017a.

Artificial intelligence is already in use throughout the Creative Industries and its presence is on the increase in people's daily lives; from the interactive voice response system used when telephoning large organisations, to handling calendar schedules. "It has been estimated that A.I. could add an additional USD \$814 billion (£630bn) to the UK economy by 2035, increasing the annual growth rate of GVA from 2.5 to 3.9%"<sup>13</sup>.

According to the UK government's policy for the development of future industries, an investment of £406m<sup>14</sup> is going to be made in order to advance the fields of science, technology, and engineering. This investment is aimed at addressing the shortage of digital and technical skills of people in these fields. This will be realised by setting up a new National Centre for Computing Education as part of the new strategy for AI implementation by the government.<sup>15</sup>

### Technology in the Manufacturing Sector

The UK's largest car manufacturer, Jaguar Land Rover<sup>16</sup>, is keeping ahead of technological advancements through the continued promotion of British design, coupled with creative engineering<sup>17</sup>. The company operates a manufacturing plant in Halewood near Liverpool, producing vehicles that are exported across the globe. Similarly, another North West success story that is seeing advances through the use of intelligent robotics, is the international company Amazon, who opened their second distribution centre in the North West (Warrington) in September 2017. These robots are programmed to work 24 hours per day and their involvement in the operations of the company has been in collaboration with the human employees, numbering 1,200 full-time staff and 300 temporary workers<sup>18</sup>. Neighbouring these companies, the STFC Hartree Centre has been operating in Daresbury since 2012. In association with IBM, it hosts supercomputer platforms and aims to develop high-performance computing (HPC) solutions<sup>19</sup>.



Employee picking with Amazon RoboticsPicker.

13 Bazalgette, 2017.  
 14 BEIS, 2017c, p.94.  
 15 Ibid., p.110.  
 16 Jaguar Land Rover, 2017.  
 17 Jaguar Land Rover, 2016.  
 18 Bona, 2017.  
 19 IBM, 2014.

Innovative technology in the fields of wellbeing and social inclusion are also important for strengthening communities as they are affected by digital change, which will be discussed further in the Skills & Education section. Technological advances are opening up new opportunities to face social problems; user driven digital tools and services have been implemented to foster the inclusion of an ageing demographic, and support the innovation in health sectors. Age-friendly technology is being developed to tackle issues such as loneliness and independent living: in Liverpool, Red Ninja is an example of a company designing technology for these purposes<sup>20</sup>. In 2016, they developed a project aimed at enhancing the experience of patients through cognitive technology in collaboration with the Alder Hey Children's Hospital<sup>21</sup>. Another exemplary project is a regional NHS scheme that is providing people with disabilities access to assistive technology and advice. North West Assistive Technology is organised by a team of consultants, therapists and engineers who are working to improve living conditions throughout the region<sup>22</sup>.

### Technology and Future Work

Considering the rise of intelligent technology in the region, there is the associated risk of unemployment. Today, automation is perceived as threatening jobs and reshaping the employment market<sup>23</sup>. We see, for example, the reduction of branches as banks become 'smart', allowing users to do everything they need from their phones, discarding face-to-face assistance<sup>24</sup>. Similarly, online shopping is becoming essential as e-commerce takes over the market of specialised goods and traditional retail from physical stores<sup>25</sup>. "Every commercial sector will be affected by robotic automation in the next several years"<sup>26</sup>, with the advent of technologies such as virtual reality, shops will become more interactive<sup>27</sup>, affecting the low-skilled jobs market. All this suggests space for employment in more high skilled, technical positions but also opens up "opportunities for new non-routine jobs" where research and innovation can take centre stage<sup>28</sup>. The fast pace of automation will require some readjustment to "lessen the resulting shocks" and "necessitates a revolution in education"<sup>29</sup>. As jobs 'for life' are likely to become an outdated concept, notions of lifelong learning are supported.



**Advancements in technology must be acknowledged as a key driver for growth and prosperity."**

## Provocations and Interventions

### Lack of Cohesive Support for the Creative Industries

In terms of production in the creative sector, Greater Manchester and Liverpool are certainly developing faster than other areas. As for other sub-regions, it seems there is a lack of opportunity for innovation. Some cases present reasonable explanations: Cumbria, for instance, although a large territory, is a rural county, with some of their economic priorities being infrastructure, environmental sustainability, and tourism<sup>30</sup>. Cheshire has a strong focus on science and innovation, and whilst acknowledging the Creative Industries "as an area of future growth"<sup>31</sup> there is little in their LEP strategy to support this. The creative cluster of Warrington and Wigan present specialisation in digital marketing technology, and Chester in mobile and games<sup>32</sup>. Cheshire East council has programs in place for the promotion of digital and creative skills, but aside from this it seems that there the Creative Industries are lacking local enterprise and business support.

20 Red Ninja, n.d.  
 21 Alder Hey Children's NHS Foundation Trust, 2016.  
 22 North West Assistive Technology, 2017.  
 23 Shewan, 2017.  
 24 Jones, 2016.  
 25 Graham, 2016.  
 26 Shewan, 2017.  
 27 Radowitz, 2016.  
 28 Harari, 2017.  
 29 Ibid.  
 30 Cumbria LEP, 2014.  
 31 Cheshire and Warrington LEP, 2014.  
 32 Mateos-Garcia and Bakshi, 2016.

### A.I. and Robots Replacing Social Interaction

In the current landscape, there is a plethora of industrial robots being upgraded or repurposed to either be part of the construction sector or the product package, storage and delivery enterprises. Simultaneously, we are witnessing the birth of empathetic robots or robots that can act as consumer companionship tools to enhance the quality of the human life<sup>33</sup>. However, this raises other issues. If robot companions become essential household products, could they substitute human social interaction? Is the North West prepared for a future with so many technological demands and employment conflicts?

### Embrace New Technology Despite the Risks

While robotics may create uncertainty for low skilled employment, advancements in technology have the potential to be a key driver for growth and prosperity and should be acknowledged as such, for employees as well as businesses. “Computer-controlled equipment is unlikely to substitute for labour in creative domains” and complements most creative professions, “making creative skills more productive”<sup>34</sup>. Currently, the UK is making steps to render the Creative Industries more profitable and the North West has the opportunity to embrace new technology<sup>35</sup> in this respect.

This would require interventions into the current scheme of business and restructuring in the form of promoting collaborations among the city centres of the North West. At the moment, there is a need to address the industrial rivalry within the region. In Lancashire, employment in the creative industries is “concentrated in IT, software and computer services” while more media based roles, such as TV and radio, “are less well represented than the national average, potentially because of the competitive position of Greater Manchester”<sup>36</sup>. This competitive nature could be overturned through a collaborative approach and setting of common goals.

Currently, there is a lack of collaboration between the cities and regions in the North West. Areas across the region should be encouraged to connect and collectively share knowledge and expertise. Examples of where the North West is succeeding can be found in the Leadership & Policy section.

### Develop Adequate Training for New Technologies

As technology advances, new conditions to focus human attention arise. A strong belief among business consultants, educators and policy advisors dictates that importance should be focused on people being increasingly prepared to work in close collaboration with machines<sup>37</sup>. Digital and technological advancements can provide a vast range of useful tools to support people’s inclusion and wellbeing; however, to maximise their impact on future economies, an interdisciplinary approach to the development of user-centred technologies that integrates participatory and co-design processes should be adopted. There is a need to understand and explore the nature and implications of technological advances on people. In order to adapt successfully it is vital that the North West develops adequate training for these technologies so it can recruit from its own workforce, implementing fluid and flexible approaches for upskilling digital competences, aimed at people of all ages and from any area – urban or rural.

The higher and further education institutes of the North West are strong providers of courses that supply training in creative and digital skills. However, recruitment opportunities are lacking in some sub-regions which can motivate graduates to look for employment in the largest regional cities or London, causing a graduate drain from smaller university cities. As suggested by a 2016 Nesta analysis of the Northern Powerhouse, “it is important to establish career pathways to encourage graduates to stay”, by creating “greater visibility of local employers and careers”<sup>38</sup>.

33 Collins, Prescott and Mitchinson, 2015.

34 Bakhshi, Frey, and Osborne, 2015.

35 Lancashire Enterprise Partnership, 2015a, p.8.

36 Lancashire Enterprise Partnership, 2015b, p.4.

37 Tse, Esposito and Goh, 2017.

38 Nesta, Accenture and Catapult, 2016, p.20.

## Recognising Value in Digital Innovation

Technological innovation in everyday items aims to improve our life in a number of ways. This has been the ambition of companies across the Creative Industries that are developing new products and services. Digital inclusion and the design of user-driven technology to empower and support people to self-manage their health conditions should be key strategic goals for an effective and sustainable health and social care system. Products and services that, among others, observe people's health, schedule repetitive tasks and strive towards applying principles and procedures that are more environmentally friendly.

Despite the impact automation could have on low-skilled employment, it could, ultimately, be beneficial to the welfare of society through the reduction of working hours<sup>39</sup>. In Sweden, many companies have seen the health benefits of reducing the daily work rate to six hours<sup>40</sup>, A.I. and robotics could be a way of bringing this to reality. With machines doing a good part of the job, less hours at the same salary income could be a possibility for jobs of the future. Thus, this use of technology may propose new economic models, but we must consider the potential impact on people's health and wellbeing. Do we really want or need a future without rewarding forms of work?

## Key Recommendations

Creatives have the potential to act as a catalyst for valuable collaborations between industry and cultural institutions, to both stimulate innovation and introduce new audiences to the most recent advancements in technology. The use of established cultural institutions would help the transfer of new technologies into common usage.

The North West has many technology-based SMEs as well as big industry players: global innovation will have a direct impact on these regional industries. Through the creation of well networked hubs of communication and education, existing and new generations of workers would be able to develop their skill sets and knowledge using contemporary tech applications with creative, artificial intelligence, or robotic systems.

Designers could play a valuable role in easing the concerns over the automisation of low-skilled jobs. Effectively designed processes are needed to ensure that new ways of working alongside automation are accessible not only to highly skilled workers, but to everyone.

Design processes, such as co-design or participatory design, can be used to implement people-centred and accessible technologies that foster social inclusion. Such approaches will meet people's needs and enhance the quality of life across all age groups in the North West.

<sup>39</sup> Frayne, 2016.  
<sup>40</sup> Mathahu, 2016.

# — SKILLS AND EDUCATION

## 3

There is evidence that compared with exemplar countries such as Denmark, Germany, Netherlands, Norway, and Singapore, the UK population lacks basic and technical skills<sup>1</sup>. Ensuring that everyone has the right skills needed for a modern economy is key to boosting productivity, which currently is at lower levels in the UK compared with these other advanced economies<sup>2</sup>. In this section, we set out to discuss what these ‘basic skills’ should include if the North West is to grow and prosper.



Intergenerational learning at a MakeStuff event hosted by MadLab, Manchester 2016.

**With vital skills residing in the older workforce, there will be significant impact on industry.”**

1 BEIS, 2017c.  
2 Ibid.

## STEM Skills

Like many policy documents, the Industrial Strategy<sup>3</sup> aligns science and technology as the key source for innovation and highlights the need for STEM skills as a priority area. With the number of jobs in science, technology and engineering “expected to rise at double the rate of other occupations between now and 2023”<sup>4</sup>, the concern over the lack of young people progressing to further and higher education to study STEM subjects is justified.

The need for STEM related skills within the region’s extensive array of media, engineering, automotive and pharmaceutical sectors is unsurprising. In Greater Manchester programmers and software developers consistently come out as the most in-demand<sup>5</sup>, whilst in Cumbria technological change and continued fragmentation of the production chain within advanced manufacturing is increasing the need “for a flexible workforce with strong specialist skill in niche areas”<sup>6</sup>. Despite these needs, there is worryingly little uptake of digital and STEM subjects amongst post 16 year olds and the uptake of further education courses in digital subjects “saw its number plummeting” by 77% from 2011/12 to 2014/15<sup>7</sup>.

Alongside STEM skills, the Engineering Construction Industry Training Board (ECITB) suggests that upskilling of craft skills is also vitally needed<sup>8</sup>. Bentley (based in Cheshire), who generate “significant revenue” to the UK economy (£1.1 billion of GVA), considers “craftsmanship as fundamental” to its position in a global market<sup>9</sup>. With 3 out of 4 production line staff using innovative applications of traditional craft skills, the skilled labour required for this highly bespoke production will not be met through the STEM agenda alone.

## Ageing Workforce

LEPs in the North West suggest that the skills gap is being further strained due to ageing workforces across the region<sup>10,11</sup>. The over 50s currently make up 37% of the population in the North West (36% in the UK’s population)<sup>12</sup>. The Cheshire and Warrington LEP states that: “We have a highly skilled resident workforce, though much of these skills reside in older workers. Skill levels in younger age groups are lower than in other areas and we face problems attracting and retaining graduates”<sup>13</sup>.

Overall across the North West, employment of the over 50s has grown by 22% in the last ten years, with almost 1 million people in 2015<sup>14</sup>; with Cumbria seeing the biggest increase, at a sub-regional level<sup>15</sup>. This age group brings a valuable contribution to the UK’s economy, estimated to be worth £440 billion nationally and £41 billion to the North West<sup>16</sup>. By 2020 the UK will be even more reliant on the adult workforce, with the “need to fill 13.5 million vacancies but yet only 7.0 million young people leaving school/college”<sup>17</sup>.

At a regional level, with vital skills residing in the older workforce, there will be significant impact on industry and “replacement demand from an ageing population is the highest driver of future labour demands (230,000 jobs by 2025)”<sup>18</sup>. As the population ages, “addressing the barriers to work that the over 50’s face, including skills gaps, will be vital”<sup>19</sup>. In the North West Digital Sector only 1.6% of workers are aged 50-60, compared to the overall working age population (2.5%); this trend is below the UK’s average (2.1%)<sup>20</sup>. Those numbers suggest that the skills gap, in particular in the digital sector, is preventing over 50s workers from accessing a whole range of opportunities in this growing sector.

3 BEIS, 2017.c

4 Ibid., p.97.

5 New economy, 2016, p.29.

6 Cumbria LEP, 2014.

7 New economy, 2016, p.52.

8 ECITB, n.d.

9 KPMG, 2016, p.25.

10 Cheshire and Warrington LEP, 2014.

11 Liverpool City Region LEP, 2016.

12 New Economy, 2017.

13 Cheshire and Warrington LEP, 2014, p.7.

14 Ibid.

15 Ibid.

16 Ibid.

17 Ibid., p.12.

18 Cheshire and Warrington LEP, 2014, p.20.

19 New Economy, 2017, p.3.

20 Ibid., p.24.

Furthermore, health is another factor that impacts on the ability to retain older workers. “Almost half of people aged between 50 and the SPA (State Pensionable Age) have at least one long-term health condition”<sup>21</sup> and this is limiting their ability to work longer. However, “evidence shows that older people are more likely to remain in the work force if they are in good quality employment that is characterised by low physical and mental stress”<sup>22</sup>. Technology, advancement in the digitalisation of the work, and in the self-management of health conditions could bring new opportunities – beside challenges – and “play a transformative role in overcoming specific barriers faced by older people if they are able to access it”<sup>23</sup>.

### Digital Skills for All

There is currently a digital divide where up to 12.6 million of the UK’s adult population lack basic digital skills and an estimated 5.8 million people have never used the internet at all<sup>24</sup>. According to the Digital Skills Crisis report, this gap is costing the UK economy an estimated £63 billion a year in lost additional GDP<sup>25</sup>.

In its White Paper, the Industrial Strategy Commission states that: “ensuring there is an effective, efficient, and financially viable health and social care system, in the context of an ageing demography, is a key strategic goal for the UK”<sup>26</sup>. It also stresses the need to ensure digital inclusion of all age groups<sup>27</sup>. Some older people are struggling to approach the digital world, mostly for lack of basic digital skills and experience of the internet, low to no awareness of the opportunities that being online can offer, a misperception in general of the Internet (‘not for me’), and an anxiety of doing something wrong while using technology, accompanied by inadequate design of devices<sup>28</sup>. This is relevant given the ageing workforce phenomenon (see previous section) and considering that overall, the percentage of the population aged 65+ is increasing and is “projected to jump to nearly a quarter of the population by 2045”<sup>29</sup>. By 2036, 14 per cent of the total population of Greater Manchester will be 75+, an increase of 75 per cent from 2011<sup>30</sup>.

### Mix of Rural and Cities

It is vital that any interventions designed for meeting the growing skills gap in the North West are appropriate for the mix of industrial specialisms (current and emerging) within this urban/rural make-up. Any approach to skills training must be fully inclusive and aimed at maximising and sharing the knowledge currently retained in an ageing workforce, in order to support growth for a future economy.

A particular issue in the area of Cumbria is accessibility to skills training in “local (often rural) areas”<sup>31</sup>. Similarly, but more relevant to urban areas of the North West such as Liverpool, it is acknowledged that “spatially concentrated deprivation makes it difficult for some residents to engage with education and training at appropriate levels and quality”<sup>32</sup>.

### Creative Skills are Vital to Growth

The creative economy plays a central role in the UK’s cultural life and “the importance of creative skills have been widely recognised”<sup>33</sup>. The UK’s Creative Industries grow at twice the rate of the overall economy<sup>34</sup> and contribute significantly to it<sup>35</sup>, with design as the fastest growing area<sup>36</sup>. Within the North West region specifically there exists, what Nesta defines as, a “creative conurbation”<sup>37</sup>: a special form of creative cluster that encompasses Manchester, Chester, Liverpool, Warrington and Wigan, and Crewe.

21 Government Office for Science, 2016, p.36.

22 Ibid., p.36.

23 Ibid., p.36.

24 Science and Technology Committee, 2016.

25 Ibid., p.7.

26 Industrial Strategy Commission, 2017, p.5.

27 Science and Technology Committee, 2016.

28 West, 2015, p.22.

29 Haque et al., 2017.

30 Greater Manchester LEP, 2017.

31 Cumbria LEP, 2014.

32 Liverpool City Region LEP, 2016, p.49.

33 Siepel et al., 2016, p.5.

34 Bazalgette, 2017.

35 Bristol + Bath X Design, 2016.

36 Design Council, 2017a.

37 Mateos-Garcia and Bakhshi, 2016, p.6.

Yet, concurrent to “increased interest in STEM skills has been a challenging policy environment for arts education”<sup>38</sup>. Nesta emphasises a need to “reassess the role of creative and arts education alongside technical and science disciplines”<sup>39</sup>. The STEAM movement, first championed in the US<sup>40</sup>, calls for the arts to be included into the STEM agenda yet “arts skills are rarely acknowledged as contributors to economic outcomes such as growth, productivity or innovation”<sup>41</sup>. Research by Nesta, in ‘The Fusion Effect’, evidences that combining arts with technical skills has a positive impact within the Creative Industries and is able to “generate superior firm performance”<sup>42</sup> in ‘non-creative’ sectors. This supports “the view that creative activity in the wider creative economy – not just in the Creative Industries – should be the main focus for policy makers”<sup>43</sup>.

## Provocations and Interventions

### Digital Inclusion

The ageing workforce and, in general, the ageing of the overall population, imposes a need to reflect on which skills are required to empower people and support them in living healthy independent lives. Taking into consideration that the future demographic will be older, with a quarter of the population predicted to be 65+ in 30 years time, ‘basic skills’ must extend beyond core subject areas to ensure digital inclusion for all age groups. A linear interpretation of age and stages of life is becoming obsolete and so is the idea of a rigid approach to learning and to work. An ageing workforce will need improved skills in order to stay active and engaged at work, being able to cope with digitalisation in the workplace and beyond.

Providing learning opportunities for all age groups will be a key shift in a society where stages of life are becoming more flexible and interrelated. Design processes can be used to co-generate solutions for engagement with older people and tackle complex issues. They can define different ways of understanding the need for digital and why the reception of technology is slow. In particular for older people, the adoption of technology and the interaction with digital tools is often perceived as a burden, causing anxiety and frustration. Digital inclusion for all age groups can transform the way we approach elderly isolation and condition. The Here and Now/Digital Buddies project in Chester<sup>44</sup> and Tech and Tea initiative in Salford<sup>45</sup> are examples of projects through which basic digital skills are provided to older people, such as using email, video calls and online shopping. Both are also focused on reducing social isolation and improving wellbeing.

### A Fused Approach



**Creativity should not be seen as a soft skill, instead it should be viewed as a core approach to learning and work.”**

As lobbying to include the ‘Arts’ in the STEM agenda gains momentum, we propose taking the STEAM debate a step further and advocate for a more fused approach to learning, that will meet the demands of industry today and in the future. The term STEAM, can be misinterpreted in its addition of the arts and risks reinforcing a pigeon hole approach that reproduces segregation through subject silos. Creativity should not be seen as a soft skill, instead it should be viewed as a core approach to learning and work. New educational models are needed with transferable creative skills at the core of the learning process. There should be no binary between STEAM subjects: the arts provide underlying tools that fuse with all subjects.

38 Siepel et al., 2016, p.5.

39 Nesta, 2017, p.11.

40 The Independent, 2016.

41 Siepel et al., 2016, p.14.

42 Ibid., p.14.

43 Ibid., p.14.

44 Griffiths, 2017.

45 Inspiring Communities Together, 2015.

In this regard, there needs to be support for artists to integrate with STEM education. STEMnet, for example, is an effective nationwide initiative that links experienced workers from STEM backgrounds with education (formal and informal) but it relies on this support being voluntary. In the main this is sustainable as the majority of Ambassadors are supported by employers in STEM fields. In order to strengthen and fully fuse arts and creativity across the board, initiatives such as this need systems in place that allow self-employed artists to also give their time.

Furthermore, the current educational system of segregated subjects not only results in the accumulation of skills that are not maximised for a modern economy, but through it, pupil wellbeing is being eroded which in turn “kills the incentive to want to study”<sup>46</sup>. As reported in the Education and Health Committees report on the role of education on children and young people’s mental health<sup>47</sup>, the current educational model is detrimental to pupils. Not only is it impacting negatively on their future educational choices, but also on their health and wellbeing.

### Fluid Institutions

Niche, alternative, and different scale organisations that are more flexible, emergent, and structurally fluid can influence the way institutional and industrial structures work. Education is institutionalised in its current methods and approaches and should be encouraged beyond these formal settings. Fluid institutions that are well networked have less barriers allow knowledge to be more easily accessed by businesses, education, and community alike. These networked and culturally mediated phenomena tend to gravitate around “influential nodes” such as makerspaces<sup>48</sup>. Alternative bodies such as these would benefit from inclusion under the institutional banner and included with the more traditionally recognised bricks and mortar spaces.

Interdisciplinary curricula combined with fluid and flexible ways of teaching should be promoted. The processes behind software development and music composition, for example, both entail creativity as well as technical skills as a necessary condition for innovation. Ultimately, cross-sector collaboration leads to the reformulation of problems and the finding of new added-value solutions<sup>49</sup>.

### Alternative Learning Spaces

Able to include all age groups, cultural institutions not only act as magnets, attracting people and businesses to a cluster, they continually play a vital role as spaces for informal learning. The power of intergenerational/family learning approaches within public institutions poses an opportunity for supporting the digital skills gap. As “barriers to retraining...can be considerable”<sup>50</sup> the informal, accessible approach to learning offered by cultural institutions can encourage people to retrain and upskill. Through engaging communities, fostering intergenerational learning, and the offering of volunteering opportunities, there is much value to be derived from supporting institutions as alternative spaces for learning.

### Business Outreach

Businesses would benefit from extra support to engage with and develop ongoing relationships with the wider public. The creative sector, designers, artists, and the tech community can help businesses to reach out and engage communities, providing powerful intergenerational learning. Some LEPs propose working with businesses to “develop on-going relationships with young people”<sup>51</sup> via further and higher education but do not discuss community or cultural routes. There is also a strong focus on apprenticeships, but community-based outreach work could do much more to support and raise awareness of digital and STEM subjects, opening up abstract concepts through more accessible means with creativity at its core. Designers could play a key role in supporting companies to reach out and engage through innovative approaches which in turn could lead to innovative development.

<sup>46</sup> Education and Health Committees, 2017, p.14. [Summary of unpublished evidence (CMH 237)].

<sup>47</sup> Ibid., p.16.

<sup>48</sup> Perrotta, Bailey, and Garside, 2017.

<sup>49</sup> KPMG, 2016.

<sup>50</sup> BEIS, 2017c.

<sup>51</sup> Cheshire & Warrington LEP, 2014, p.21.

## Key Recommendations

In order to ensure that the right skills are developed for a potential post-discipline future, a cross sector approach, one that values existing skills alongside the new, could be vital. In a fast-changing economy, creatives have the potential to intervene and find new ways to assess, and disseminate, those skills that are vital for growth and productivity.

Designers and creatives have the potential to influence future education policy and change perceptions of creativity as a skill. Through the mixing of digital and analogue approaches, the reciprocity of technologies to produce impactful and persuasive interventions could be recognised. In turn there is potential to ensure that policy makers value the contribution of creative skills to the wider economy and make it a focus of education.

Creative and flexible approaches to learning will support work readiness in the young whilst supporting the continued participation of the ageing workforce. Opportunities for intergenerational learning will be valuable to the development of future skill requirements; with notions of skill sharing and vertical cross-generational learning having additional multiple benefits to education and the broadening of skills within the community. Designers are well placed to implement this.

Design can foster new creative approaches that could tackle complicated issues such as the slow adoption of technology and the digital skills gap, particularly among the ageing workforce. Tailored, flexible strategies to give people the skills needed for coping with the digitalisation of jobs, and living healthier, independent lives should be key goals for future economies.

# — ENTREPRENEURSHIP AND VALUE CREATION 4



For a growing number of digital jobs, you need to be in the North-West<sup>1</sup>.

This section looks to highlight entrepreneurship in North West England, and how to cultivate value creation in order to maximise economic, cultural, and political success. The primary focus of this section is to address how design and creativity can answer regional challenges; transforming entrepreneurship and value creation obstacles into prosperous outcomes. Questions which need addressing are: how can North West England add value to an entrepreneur? And how can an entrepreneur add value to North West England?

On a global scale, an entrepreneur can be described as an individual who “takes an idea, develops a business around it, manages the business, and assumes the risk for its success”<sup>2</sup>. Key characteristics of a *successful* entrepreneur are; “focus, advantage, creativity, ego, team, and social”<sup>3</sup>. These entrepreneurial traits can offer further understanding of how to add value to the entrepreneur and the North West of England.

Value can be applied to areas such as economy, culture, and politics. It is important to consider all areas when attempting to create value. *Economic value* involves measuring the sustainability, growth, and spread of a corporations’ offerings. To expand, when the return on invested capital is greater than the cost of capital this would equal a positive spread<sup>4</sup>. *Cultural value* refers to the beliefs of a person or social group in which they have an emotional investment, as supported by Kruchten a “collective programming, which is learned, not inherited”<sup>5</sup>. Lastly, *political value* can be highlighted as qualifying value for the political sphere and requires the “constitutive features of politics as a human activity”<sup>6</sup>.



Manchester Airport – connecting the world to the North.

- 1 Bounds, 2017b, p.3.
- 2 Truex, 2017, p.1.
- 3 Westwood, 2017, p.1.
- 4 Percipient Partners, 2016.
- 5 Kruchten, 2002.
- 6 Sleat, 2016, p.1.

Value creation in the North West varies massively by sub-region. Cheshire East achieved high productivity in 2015 generating 17 per cent higher GVA per hour than the UK average, showing higher than average labour productivity in manufacturing<sup>7</sup>. However, in 2015 there were thirty-seven sub-regions in the North West where labour productivity was 15 per cent or more below the UK average, with Blackpool displaying one of the lowest productivity levels in the country<sup>8</sup>. Furthermore, the counties of Cumbria and Lancashire were positioned as having the lowest labour productivity levels in relation to GVA per hours worked, at least 13 per cent below the UK average<sup>9</sup>. Regional disparities were reported in relation to start-ups, for 2014 “the highest birth rate is in London (14.6%), followed by the North West (11.1%)”<sup>10</sup>. 2015 saw London possessing the “highest business birth rate at 18.6%, followed by the East Midlands (14.4%) and North West and West Midlands (14.1%)”<sup>11</sup>. On the other hand, in 2016 it was reported that “London had the highest business birth rate (17.5%), followed by the East (15.8%) and West Midlands (15.5%)”<sup>12</sup>.

### Creative and Digital Industries Overview

The North West is home to 21,733 businesses involved in the Creative and Digital Industries. 42.4 per cent of these are located in the Greater Manchester Area<sup>13</sup>, and are the fastest growing industries in terms of employment<sup>14</sup>. Overall, these businesses are SMEs with the majority employing fewer than 10 people<sup>15</sup>. These sectors are set to create 80,000 new creative and digital jobs in the North of England in the next 3 years<sup>16</sup>.

### Digital Industries

Between 2011 and 2015, the number of digital tech jobs across the UK grew by 17 per cent. Over 1.64 million people in the UK are employed in the digital tech sector, or 6 per cent of the population. The GVA of the digital tech worker is more than twice that of non-digital tech workers<sup>17</sup>, and jobs are created at a faster pace than the rest of the economy (2.8 times faster)<sup>18</sup>.

The table below compares Liverpool and Manchester with London, examining factors that could influence the creation of digital businesses in the different areas.

Table adapted from Tech Nation report<sup>19</sup>

	Liverpool	Manchester	London
Office Rent Average (£ per sq./ft.)	£17.50	£34.00	£87.50
Average House Price (to nearest 000)	£144,000	£186,000	£583,000
Average Advertised Digital Salary (to nearest 000)	£45,000	£47,000	£62,000
Digital Growth Optimism*	79%	85%	78%
Quality of Life*	83%	75%	59%
Talent Supply*	24%	27%	45%
Infrastructure*	40%	53%	57%
Growth Challenge – limited supply of highly skilled workers	57%	69%	58%

(\*local digital sector workers rate as ‘good’)

7 KPMG, 2016, p.22.

8 ONS, 2017, p.2.

9 ONS, 2015, p.6.

10 Ibid., p.5.

11 ONS, 2016, p.5.

12 ONS, 2017, p.6.

13 New Economy, 2016, p.16.

14 Ibid., p.19.

15 Ibid., p.16.

16 Baltic Creative, 2017, p.7.

17 Tech City UK, 2017.

18 Tech City in partnership with Nesta, 2016, p.10.

19 Tech City UK, 2017.

The largest business growth challenge facing the digital industries is felt across all regions of the UK – a lack of highly skilled digital workers<sup>20</sup>. Liverpool and Manchester differ, however, in that respondents cite limited investment opportunities (or limited access to finance) as an important barrier to growth. Respondents in London, on the other hand, cite “limited supply of appropriate property on competitive terms”<sup>21</sup>, as their second biggest barrier to growth. The table clearly shows that the North West offers advantages over London. Digital entrepreneurs can find cheaper staff and more affordable rents, while digital employees report a much higher quality of life.



**The North West is home to 21,733 businesses involved in the Creative and Digital Industries.”**

### Creative Industries

Once considered a separate sector, the Creative Industries are increasingly using digital tools and providing digital services. Currently 45 per cent of marketing, PR, and design firms are now considered ‘digital tech’ businesses<sup>22</sup>.

For the purposes of this section it is important to look at the Creative Industry as a separate sector because it performs differently to digital industries and offers different insights. While the contribution of digital entrepreneurs to the UK’s economy is considered self-evident, creative firms are often given second-billing. As the Design Council’s Designing Future Economy report points out, designers fuse several types of knowledge such as data with visualisation and problem-solving, to offer a unique skills-base essential for the innovators of tomorrow.<sup>23</sup> The report goes on to calculate that people who use design skills are 47 per cent more productive than the average UK worker and deliver almost £10 more per hour in GVA<sup>24</sup>. Whilst impressive, these figures still fail to keep pace with the digital sector. The GVA per person in the Digital Industries in the UK is £73,900 which is significantly higher than that of the traditionally considered Creative Industries, which trail behind nationally at £42,600<sup>25</sup>.

### Government Policy can get it right: The Baltic Creative Case Study

In 2009, Liverpool City Council acquired a suite of derelict buildings in the Baltic Triangle area and joined forces with ACME (the arts, creativity and music arm of the City Council), Liverpool Vision (the investment arm of the City Council, today’s Invest Liverpool) and the now-defunct Northwest Regional Development Agency to set up Baltic Creative CIC with a voluntary board made up entirely of leaders from the private sector. They mandated Baltic Creative CIC with providing affordable spaces for artists, entrepreneurs and small businesses in an area of the city that needed regenerating. Today, Baltic Creative CIC occupies 4 locations, housing 153 creative and digital companies comprising 500 individuals, with a waiting list of over 100 small businesses and entrepreneurs. With 72 per cent of its tenants actively collaborating with one another, it acts as an ideas hub and networking community, not simply a landlord. Baltic Creative CIC will expand by another 50 per cent in the next 3 years<sup>26</sup>. As a CIC, Baltic Creative is only allowed to reinvest their budgetary surpluses in their properties, the sector, or their tenants, thus putting money back into the community. What started as a local-government regeneration scheme has turned into a thriving economic community with an annual GVA of £8.35m<sup>27</sup>.

<sup>20</sup> New Economy, 2016, p.5.

<sup>21</sup> Tech City, 2017, p.83.

<sup>22</sup> Tech City in partnership with Nesta, 2016, p.17.

<sup>23</sup> Design Council, 2017a.

<sup>24</sup> Ibid., p.8.

<sup>25</sup> New Economy, 2016, pp.3–4.

<sup>26</sup> Baltic Creative, 2017, p.3.

<sup>27</sup> Ibid., p.15.

## Provocations and Interventions

### LEP Representation and Support

Across England there is quite a wide variance in the makeup of LEP boards. This is driven by the unique motivations of each board to best reflect the local economic priorities and political circumstances. There is criticism that some LEP boards have an over-representation of elite local government figures, which can lead to an “under-representation of business”<sup>28</sup>. The LEP boards that make up the North West have a good spread of interest within public and private sectors, what they are lacking, however, is a fair representation of SMEs on the boards. Despite them making up 65 per cent<sup>29</sup> of all employment in the North West, only the Greater Manchester LEP has a dedicated representative for these businesses. Conversely all the regional LEP boards have representatives from big business<sup>30</sup>.

### Finance and Investment

Entrepreneurs need to understand that angel investors and venture capital are just one of the options to raise money for a business. Repeatedly, creative, and digital entrepreneurs in the North West cite “access to finance as their single biggest barrier to growth”<sup>31</sup>. There are several new initiatives such as Manchester’s Co Angel Invest, launched in 2014, funded and supported by the Greater Manchester Combined Authority. Entrepreneurs, however, still have little access to information about the different ways of funding their businesses; including government-backed sources of funding, national and international competitions, peer-to-peer lending, and the traditional bank loan.

To unlock the full entrepreneurial potential of the North West, we should encourage LEPs to provide detailed, up-to-date online information and in-person Q&A sessions for entrepreneurs seeking finance to start or grow their business. Moreover, an area for further investigation would be deciphering whether the birth rate decrease of North West start-ups is a positive or negative? With regional variables such as MediaCityUK, Salford now maturing this could be impacting on new businesses birth rates, thus a decrease in these figures could actually denote economic strength.

We would like to see the Government support more initiatives for local business communities to reclaim unoccupied parts of their neighbourhoods in order to create Community Interest Companies like Baltic Creative. CICs stimulate growth and encourage entrepreneurship, as they reinvest back into the community, producing a positive feedback loop building economic and cultural resilience. The fund could also support the re-opening of commercial property which has been vacant for more than ten years, such as empty warehouses, for entrepreneurial activity.

### Introduce an ‘Entrepreneur Rail Pass’

HS2 has no worth unless cost of travel comes down. While intra-regional trade is growing, entrepreneurs still find a large proportion of start-up support in London and the South. Positively, HS2 will aid in decreasing travel-time for start-up businesses from the North West to physically “connect with investors, venture capitalists and mentors in the capital”<sup>32</sup>. But entrepreneurs are faced with prohibitively expensive travel so a discounted pass on HS2 and West Coast Main Line could see an increase in entrepreneurial growth in the region. In the meantime, before HS2 completion in 2033, we could see a deal struck between the UK Government, and, for example, Virgin Rail to support the travelling entrepreneur.

28 Deas et al., 2013, p.722.

29 BEIS, 2017c.

30 Cheshire & Warrington LEP, n.d.; Cumbria LEP, 2014; Greater Manchester LEP n.d.; Lancashire Enterprise Partnership, n.d.; Liverpool City Region LEP, n.d.b.

31 Tech City UK, 2017.

32 Department for Transport, 2017, p.3.

33 Nesta, 2016, p.39.

34 The Women’s Organisation, 2017.

### A Female Entrepreneur Hot-Spot

Encourage the North West to become a hot-spot for female entrepreneurs through limiting gender differences seen in entrepreneurship in the UK: “men are significantly more likely than women to think that local start up opportunities exist, and to consider that they have the skills, knowledge and experience to start a business”<sup>33</sup>. Members of the Transformation North West cohort would like to develop projects that could assist in shifting societal perceptions around these issues: for example, via a collaboration with the organisers of the present Suffragette Walks in Manchester, or working with the Women's Organisation, Liverpool<sup>34</sup>.

### It's Okay for Businesses to Fail

According to NESTA, “half of Europeans agree with the statement that [...] one should not start a business if there is a risk it might fail”<sup>35</sup>. A step towards this has been noted in Mexico City where ‘F\*ck Up Nights’ have been initiated, involving entrepreneurs publicly describing their company failures. Additionally, in 2016 the Belgium start-up association commenced ‘Funerals’ and ‘Closing Clubs,’ for declining firms<sup>36</sup>. Support could be given to public and private funders and community associations to host their own ‘F\*ck Up Nights’ or ‘Closing Clubs,’ in order to shift the negative associations attached to entrepreneurs and start-ups.



**We should secure the notion that failure is normal.”**

### Redefine a Cultural Asset

The question ‘what do we see as a North West cultural asset?’ should be addressed. Outside the more traditionally viewed heritage spaces, it can be suggested that a contemporary cultural asset could be found within temporal, live events. A local example of this is BlueDot festival, set at Jodrell Bank, Cheshire. Here live music fuses with live science experiments, as well as promoting expert conversations and local artworks<sup>37</sup>. In order to promote new entrepreneurial thinking in the region LEPs and other public facing organisations should team up with public and private funders, to run ‘sandboxes’ finding ingenious new business ideas that answer the question ‘what is a North West cultural asset?’ This could provide new entrepreneurs with links to training and potential funding avenues, as well as acting as a test bed for their ideas.

### Entrepreneur Programmes and Collaborations

As supported by UK Government’s White Paper, “we have an obligation to help our older citizens lead independent, fulfilled lives, continuing to contribute to society”<sup>38</sup>. We suggest harnessing the power of innovation and creativity through the creation of collaborations between the ageing population and youthful start-ups; facilitating inter-generational knowledge exchanges. In addition to this, we recommend the implementation of Entrepreneur Programmes for 6 year olds across the region. With aims to maximise skills learning in educational environments, such as linking prosperous entrepreneurs with schools and imitating the charity works of “Founders4school”<sup>39</sup>. We suggest implementing programs that imitate “Citrus Saturday”, an international programme established by University College London. This programme promotes the young people to learn primary entrepreneur skills, through managing a lemonade stand<sup>40</sup>.

35 Nesta, 2016, p.40.

36 Nesta, 2016, p.41.

37 BlueDot, 2017.

38 BEIS, 2017c, p.52.

39 Nesta, 2016, p.42.

40 Ibid., p.42.

## Key Recommendations

The North West possesses numerous creative clusters; sub-regional hubs for promoting creativity within business. These hubs can act as ‘test-beds’ to industries trialling new products and services, providing valuable insights and possible new uses. There should be more cross-industry collaboration to find new ways for creating value for products and services.

Creatives can support Community Interest Companies in understanding opportunities posed by the North West Investment Fund. Such as, sponsoring designers to generate the sustainable re-purposing of commercial properties left vacant; providing new spaces for entrepreneurs and SMEs to network and collaborate.

Creatives can support opening-up conversations between entrepreneurs and funders, improving access to information. Through increasing understanding of innovative processes, funders could be encouraged to lend to start-ups that may be seen as risky, or producing products or services that are currently unknown. As discussed in this section, failure should not be a barrier to further funding but a chance to learn. This may require changes in policy to allow banks to take on some of this risk.

Design has the potential to aid in attracting and retaining start-up firms in the North West, through building a landscape for altering perceptions of cultural assets, promoting knowledge exchange, and supporting intergenerational collaboration. This shift could allow for emergent and ingenious entrepreneurial thinking in the region, creating additional value for the North West.



Altrincham Market & Market House, Cheshire – value creation in the North West. A thriving hub for food, design, and lifestyle entrepreneurs and their enthusiasts.

# — LEADERSHIP AND POLICY

## 5



Leadership is a process of social influence, which maximizes the efforts of others, towards the achievement of a goal<sup>1</sup>.



Charlotte Hug conducts the Lucerne Festival Academy.  
Creative leadership guiding a harmonious outcome.

The role of a good conductor is to unify their performers, set the tempo, and modify how musicians play, to get the most out of the music. She is the public face of a collaboration between herself, the musicians, and the 'quiet' leaders behind the scenes; the composer, director and other stakeholders. Just as a good conductor is nothing without her orchestra, the leaders of the North West sub-regions cannot be effective if they are not working harmoniously with one-another, ensuring all stakeholder interests are represented.

<sup>1</sup> Kruse, 2017.

Economic and social development in the North West relies on strong leadership from the public, private and charity sectors. There is a need for leadership to be discussed within a creative context to ensure its relevance to this document. Leadership is enhanced by utilising creative skills: the ability to manage disparate stakeholders to create an innovative future vision and manage co-operation in the context of uncertainty<sup>2</sup>. This section will showcase examples of leadership in the North West, looking across the region to highlight strengths, weaknesses, and opportunities to drive growth through effective leadership. These local examples will demonstrate that collaborative leadership is recommended to set a clear vision for the region to create strong and positive changes. This section proposes that the North West should present a united front, both nationally and internationally, to safeguard future growth and prosperity in the region; drawing on leadership styles and best practices from across our diverse landscape. This will ensure that all the voices of the North West, from global cities to national parks, are fairly represented and supported to develop resilient leadership networks across the region.

The sub-regions across the North West have an unusual mix of leadership structures. Two of England's seven Combined Authorities headed by City Region Mayors; two directly-elected city mayors in Liverpool and Salford; as well as five of the UK's 39 LEPs, made up of local business and council stakeholders that support leadership and policy in the sub-regions. All of these groups are run with degrees of collaboration from the region's 40 local councils; each with their own priorities and political agendas. As this section will demonstrate, there are some excellent examples of positive leadership in the region. However, many of the region's leaders are white and male, which does not reflect the diversity of this area. To begin to address these issues of representation, more can be done to ensure the inclusion of women and Black, Asian and Minority Ethnic (BAME) groups. This is explored further in the Local Enterprise Partnership section.

### Combined Authorities of Manchester and Liverpool

During the period leading up to the creation of Combined Authorities in 2011, Greater Manchester was seen as a test bed for ideas of devolution. The local authorities pioneered a cross-boundary form of working in order to drive innovation in the area, and “to prepare its economy and communities for the challenges ahead”<sup>3</sup>. A key finding by Nesta in 2010 was that sub-regional leadership groups worked collaboratively across administrative boundaries, while empowering local businesses to become better involved in the decision-making process in their local area.<sup>4</sup> This led to Greater Manchester presenting a united front, ensuring solutions have been agreed upon by all parties before approaching government and businesses at a national level. This collaborative form of working has taken Manchester “from being locked into a post-industrial decline, to the young, thriving metropolis it is today”<sup>5</sup>.

Liverpool, by comparison, has for decades suffered from “leaders [that] have failed to demonstrate the necessary political skills to form coalitions that are stable enough to promote economic regeneration”<sup>6</sup>. This has left the city struggling to cope with the changes brought about by the post-industrial age<sup>7</sup>. Urban policy expert Dr. Nicola Hedlam states “The core city of Liverpool is frequently referred to as ‘a basket case’ in terms of governance and leadership and compared unfavourably with the coherent image of harmonious (and boosterist) partnership presented by its neighbouring conurbation of (Greater) Manchester”<sup>8</sup>. There was a period following Liverpool being awarded European Capital of Culture in 2008, where the city saw a “culture-led regeneration” with a “unique combination of political circumstance, cultural leadership and public and private investment”<sup>9</sup> coming together to create a more prosperous city. This is demonstrated through projects discussed in previous sections. For Liverpool, cultural leaders putting pressure on the political class has had a stronger influence than the more top down approach demonstrated by Greater Manchester, but there is a danger of the local government undoing this work by rushing through poorly planned infrastructure projects.<sup>10</sup>

<sup>2</sup> Stough, 2010.

<sup>3</sup> Nesta, 2010, p.2.

<sup>4</sup> Ibid.

<sup>5</sup> Harris, 2017.

<sup>6</sup> Stimson et al. 2005, p.44.

<sup>7</sup> Anderton, 2017.

<sup>8</sup> Hedlam, 2014.

<sup>9</sup> Cox and Brien, 2012.

<sup>10</sup> Wainwright, 2017.

## Elected Mayors

The Manchester and Liverpool Combined Authorities both have directly-elected Metro Mayors, with the “powers and responsibilities to make strategic decisions across whole city regions”<sup>11</sup>. As these roles are newly established, there is yet to be much research into how effective they are. However, both mayors have put forward policy announcements and both are “attempting to go far beyond the limited range of formal powers at their disposal while reluctantly acknowledging that they are constrained by both their combined authorities and national government”<sup>12</sup>. The geographical closeness of the two cities has resulted in regional and ‘pan-northern’ collaboration, as well as a desire to put forward a united front when approaching the national government<sup>13</sup>, which can be seen in the development of the Transport for the North initiative<sup>14, 15</sup>.

Liverpool City and Salford both have directly-elected ‘city’ mayors who are, in effect, the council leaders for the local authorities. Salford’s Mayor, Paul Dennett, believes the state should be more interventionist and is pushing his brand of sensible socialism<sup>16</sup>. He wants to find “ways to keep and continue to attract the area’s flourishing creative community, keeping rents down for those ‘who’ve really suffered from gentrification over the years, constantly being displaced”<sup>17</sup>. In partnership with Salford University and other stakeholders, the council has launched a commission on fairer renting and is looking at providing subsidised workspaces in council-owned property<sup>18</sup>. The policies being put forward by this leadership reflect two of the industrial strategy’s five foundations of productivity: making the UK the best place to start and grow a business, and building prosperous communities<sup>19</sup>.

## Northern Powerhouse

The North West is a key part of the Northern Powerhouse agenda, which the Industrial Strategy is committed to continue building<sup>20</sup>. The focus is “on encouraging cities and counties to work together”<sup>21</sup> to create a driving force for the area. As a leadership body, the Northern Powerhouse Partnership has the potential to unite the North of England with one voice. However, as central government is ultimately in control of investment there is a focus on competitive economics, with the larger cities in the area more likely to be favoured<sup>22</sup>. This means smaller cities and towns missing out, despite representing “almost a third of the north of England’s economy, and since 2010 they have grown just as fast as the region’s core cities”<sup>23</sup>. Ensuring the success of areas outside of the urban metropolises should be written in to the Northern Powerhouse agenda, to ensure the project is not at the detriment of the rest of the region.



**Smaller cities, towns and rural communities need to feel the benefits of devolution or expect disengagement.”**

## Local Enterprise Partnerships

LEP boards are set up by local business and council leaders to provide collaborative leadership and vision for an area. However, examining their social makeup it is clear the LEPs could do more to be better representative of the people that make up the region. Across the North West only 25 per cent of board members are female and, as Figure 2 demonstrates, some LEPs suffer from a bigger gender imbalance than others. Studies have shown that female leaders, especially those of SMEs, are more likely to adopt a ‘transformational’ leadership style<sup>24</sup>. This approach is known for being supportive and encouraging, with high expectations, that promotes an outward facing approach<sup>25</sup>.

11 Centre for Cities, 2016.

12 Blakeley and Evans, 2017.

13 Ibid.

14 Ibid.

15 See <http://transportforthenorth.com>

16 Wynne Jones, 2017.

17 Williams, 2017.

18 Ibid.

19 BEIS, 2017c.

20 Ibid., p.216.

21 The Northern Powerhouse Partnership, 2018.

22 Hincks et al. 2017, p.653.

23 Cox, 2016, p.1.

24 Bamiatzi, et al. 2015.

25 Bass, 1985.

This is the type of leadership the North West needs if it is to grow and prosper in the future. The representation of BAME communities is even poorer, with only 3 of the 5 LEPs having board members from BAME backgrounds. This group makes up only 5 per cent<sup>26</sup> of the representatives on LEP boards across the region, when in fact, the last census shows that about 12 per cent<sup>27</sup> of people in the North West are non-White British, with a high proportion of business ownership among BAME groups<sup>28</sup>.

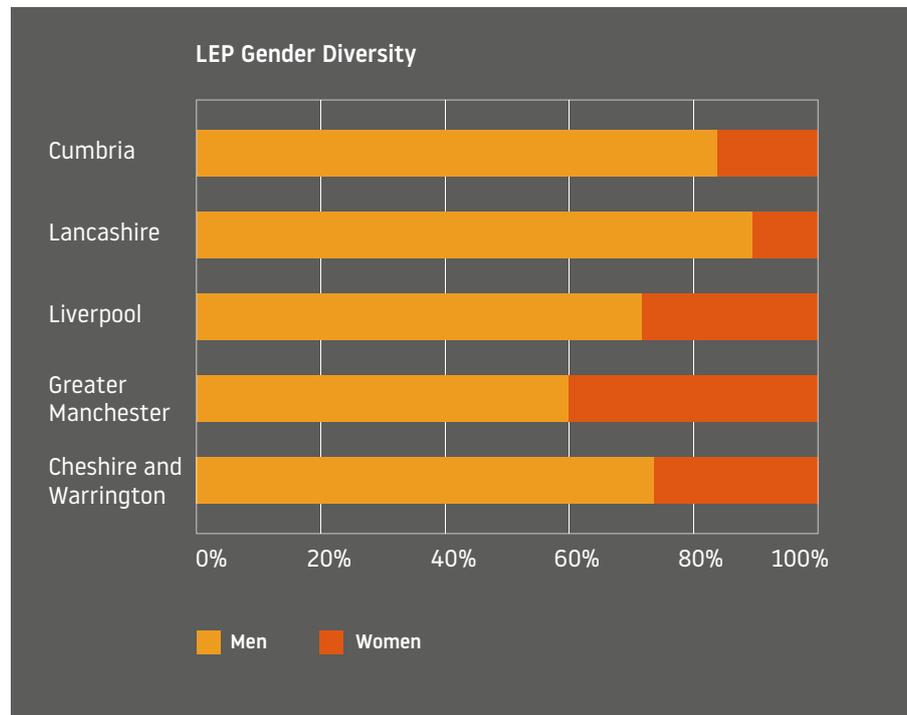


Figure 2 – Chart showing the percentage of women and men making up LEP’s in the region. Created using data gathered through the LEP’s websites<sup>29</sup>.

As discussed in previous sections, creativity is not a growth priority for all the regions’ LEPs. However, it should be supported across the board to ensure a resilient future. Liverpool City Region LEP is currently leading the way with a dedicated sub-board to advise on the Digital and Creative Sector<sup>30</sup>. This board came about through lobbying from local Digital and Creative Sector businesses<sup>31</sup>.

### Leadership Outside the Traditional Structures

Outside of local and regional government structures there are a number of spaces for leadership, the most obvious being within communities and businesses. The North West Business Leadership Team (NWBLT) was created in 1989 as a not-for-profit organisation to “lead, inspire and harness the power of business to help deliver sustainable prosperity”<sup>32</sup>. Their CEO, Emma Degg, believes that a major barrier to productivity is the lack of diverse leadership in business, not only of women but of BAME representation as well<sup>33</sup>. As previously cited this is a problem across all sectors of public leadership, however organisations are being set up across the region to counter this. Northern Power Women, led by Simone Roche, is a collaborative campaign set up to accelerate gender diversity in the North of England. It aims to transform the culture of organisations to increase opportunities for women, showcase role models and best practice for organisations that are helping to drive and lead economic growth<sup>34</sup>.

26 LEP Network, n.d.b.  
 27 The Guardian, 2011.  
 28 Ram and Jones, 2008.  
 29 Cheshire & Warrington LEP, n.d.; Cumbria LEP, 2014; Greater Manchester LEP n.d.; Lancashire Enterprise Partnership, n.d.; Liverpool City Region LEP, n.d.  
 30 Liverpool City Region LEP, n.d.a.  
 31 Discussion with Lee Omar, co-chair of the Digital & Creative Board.  
 32 North West Business Leadership Team, n.d.  
 33 Degg, 2017.  
 34 Northern Powerhouse, 2017.

## Provocations and Interventions

### Collaboration is Key

There is no one-size-fits-all approach to making the different sub-regions of the North West prosperous<sup>35</sup>, we propose that the answer lies in multi-tiered collaborative working as shown by the NWBLT, Metro Mayors and LEPs. We want to see this type of cross-sub-regional collaboration in all parts of the North West. Neighbouring LEPs should work with each other, feeding into local governments, and communication channels should be open for their involvement in the Northern Powerhouse too. This will create a region that can achieve the ‘five pillars of productivity’ laid out in the Industrial Strategy: innovation, good jobs, well-considered infrastructure, a flourishing business environment, and prosperous communities<sup>36</sup>. We also want to see smaller town and community groups, who best know the issues of their locales, given open access to communication channels with these decision making bodies. This could create a network of leadership groups who are all in communication with one another, constantly feeding back and ensuring voices across all sub-regions of the North West are heard.

### Give All Cities an Equal Voice

“Brexit has made clear that Northerners are not prepared to accept an agenda driven by a city elite. In economic terms, too many of the North’s most important assets lie outside our big city hubs and for that reason alone they need a place at the table”<sup>37</sup>. Smaller cities, towns and rural communities need to feel the benefits of devolution or governments should expect disengagement, which can lead to seismic shifts such as Brexit. We want to see elected mayors in every town and city in the North West, with the power and budget to drive through their vision, and a requirement that they work collaboratively with each other to create a vision for the region.

### Better Diversity – Better Productivity



**The North West should put into place structures to support programmes that specifically raise the profile of people from all backgrounds to become leaders.”**

Radical and ambitious action is needed to reduce the race and gender diversity leadership gap in the region. The current status quo is no longer fit for purpose and this is affecting the bottom line of business and means companies are not reaching their full potential. The region has some rising stars, in terms of female leadership and the promotion of it. There is an opportunity to leverage this foundation of good work from organisations such as Northern Power Women and move ahead of the rest of the UK and beyond with ambitious and decisive leadership. For BAME groups, regionally, there are programmes for leadership progression within the NHS<sup>38</sup> and education<sup>39</sup>, but there is a lack of support for leadership outside of these traditional public sector organisations. The barriers to leadership are multi-faceted; “low employment mobility, the perception of the persistence of old boys’ networks and of a low ethnicity ceiling can lead many potential BAME leaders to feel suffocated through a lack of opportunity and to lose morale, motivation and aspiration”<sup>40</sup>. North West LEPs working with the NWBLT and other business groups should put into place structures to support programmes that specifically raise the profile of people from all backgrounds to become leaders. As Emma Degg puts it, “the potential productivity boost will be shared by us all”<sup>41</sup>.

35 Bazalgette, 2017; Mateos-Garcia and Bakhshi, 2016.

36 BEIS, 2017c, p.10.

37 Cox, 2017.

38 NHS, n.d.

39 Diversity Practice, n.d.

40 Co-Creatives, 2014, p.11.

41 Degg, 2017.

*Interventions that we suggest in this area are twofold –*

1. LEPs across the region could subsidise women-only leadership workshops, providing women with the right skills to become confident leaders. These workshops should be run regularly, including during evenings and weekends, and be open to women of all ages.
2. We suggest extending the goal of the 30% Club, of achieving a minimum of 30 per cent women on FTSE-100 boards<sup>42</sup>, to include all medium sized businesses and above, plus representative bodies, including LEPs. This should be combined with a goal to have 20 per cent racially diverse leadership teams by 2030. To stimulate this change businesses, public sector bodies, and universities will be open to bid on the Industrial Strategy Challenge Fund to deliver research and programmes that address issues preventing women and people from BAME backgrounds from achieving leadership positions. These organisations will have to commit to hitting the 20 per cent and 30 per cent targets. If they do not they will have to pay back the funds they received. This programme should be open to any organisation in the North West and organisations should be supported in applying to the programme through targeted training programmes.

### **Metropolitan Cohesion for a Stronger North West**

It is imperative that there is more cohesion between Liverpool and Manchester, whilst also focusing on smaller cities and towns, to enable the region to compete outside the North West. Metro Mayors should pool 5 per cent of their respective budgets for a cross city region fund, that will be used to build partnerships and new leadership networks that benefit both cities, while implementing policies that make it easier for the wider North West region to benefit from this metropolitan cohesion. These new networks and partnerships will deliver innovative projects that deliver economic growth for the whole region with a focus on Industrial Strategy key themes.

## **Key Recommendations**

We believe that design thinking and user-centred design principles should be leveraged when developing leadership policy in the North West region. This could create fit-for-purpose leadership policy that is inclusive, as opposed to the traditional top-down approach which has been shown to not work effectively.

We urge creatives to upskill by spending time examining the emerging areas of growth within the industrial strategy. Reflecting on how they can bring value to emerging areas such as artificial intelligence, quantum computing, robotics, life sciences, satellite and space. This upskilling will enable them to work in emerging growth sectors and assume a leadership role in the new economies.

A need for a new generation of creative leadership within the region has emerged here. Many of our future creative leaders are currently working in micro companies or are freelancers. Creatives should be encouraged to come together and lobby LEPs in the region to create a Creative & Digital Board or “Createch” Board. This board would benefit from representation on the main LEP board and could be based on the Liverpool Creative & Digital Board model.

<sup>42</sup> 30% Club, n.d.

# CONCLUSION

The Industrial Strategy begins its conclusion with a call to action:



**We face a time of unprecedented economic change, powered by new technology. Now is the time for the United Kingdom to ensure we are well prepared to prosper”<sup>1</sup>.**

Throughout this report we have endeavoured to show that the Creative Industries, and creative skills more broadly, should be at the forefront of our country’s strategy to shape the process of change. Creativity should be a central part of forming an economy in which innovation flourishes and all people have the skills to participate. The Creative Industries are increasingly important to the UK economy, but the transformative potential of design and creativity is not confined to this sector alone; it cuts across all sectors of the economy, traversing all of the Industrial Strategy’s five foundations of ‘Ideas’, ‘People’, ‘Infrastructure’, ‘Business Environment’ and ‘Places’.

This report comes at a uniquely challenging time for the UK. As the country prepares to leave the European Union, the need to improve and maintain a strong economic position on the international stage assumes an even greater and more urgent purpose. Now, more than ever, is the time to take bold steps to strengthen and encourage the UK’s Creative Industries at both local and national levels, if we are to drive economic growth across the country.

As the Government’s White Paper points out, “investment tends to follow talent”<sup>2</sup>, but equally, talent follows investment, so it is vital to nurture the existing and growing strengths of the region, if skilled workers, businesses, and entrepreneurs are to be retained in the North West.

The Government’s focus on the economic engine of the Northern Powerhouse is a positive step towards recognising the potential of our region. As the epicentre of the First Industrial Revolution, the region holds the potential to reverse the legacy of industrial and financial decline that followed the outsourcing of many traditional ‘heavy’ industries abroad. There is growing recognition that if the North West (and the UK as a whole) is to become a strong contender in the global marketplace, the region should focus upon and invest in one of its key 21st century assets: the creative talent of its people. In short, The North West now finds itself on the brink of a new Industrial Revolution, one which seeks to place the UK as a world leader in the fields of creativity and innovation. Signs that the North West is already a hotbed of ingenuity are plain to see: it is where graphene was discovered, is home to a successful film industry, a leading aerospace industry, and prestigious research institutions. Creative practices in the region are already achieving new and exciting things: from the creative hubs of MediaCityUK in Salford, and the Baltic Triangle in Liverpool; to successful events such as Vintage by the Sea in Morecambe and organisations like Green Close working in rural Lancashire.

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<sup>1</sup> BEIS, 2017c, p.241.  
<sup>2</sup> Ibid, p.88.

We recommend the following **5 actions** to build upon these successes and to ensure that creativity is a major catalyst for growth in the region, with innovation and inclusivity at its core:

### **1. Ensure Communities are at the Heart of all Growth Plans**

The North West is home to the economic powerhouses of Manchester and Liverpool, but also to small and medium-sized cities, towns and rural areas that are essential to its economy. We recommend employing the creative sector to design processes that unlock the potential existing within the patchwork of unique places that make up the North West, from urban centres to rural communities. Creative hubs and clusters can be utilised to help drive this growth, encouraging cross-fertilisation of ideas and skills. The interconnected nature of the various places of the North West highlights the importance of adequate infrastructure spending in the region. We have argued that this infrastructural improvement should be holistic in nature, through an approach which is sensitive to the complex network connections that it facilitates. Such an approach would involve the adaptive reuse of heritage assets as well as using design processes that ensure people are at the heart of decision making meant to foster economic growth, improve public services, and promote wellbeing throughout the North West. Design processes can help unlock the needs of communities and enable different people, including vulnerable groups, to collaborate on delivering solutions across diverse communities. We have cited Ten Streets Liverpool, and Green Close, Lancashire, as positive examples that could be used in other areas. Where direct community engagement is not possible, we have suggested the use of incentives to influence the choices of developers in a way that would work with each place's specific urban or rural ecology. Importantly, a people-centred approach will ensure that inclusion of vulnerable groups is at the centre of co-design processes.

We intend to use a range of design methods, tailored to fit specific needs and in highly collaborative design processes, to enhance wellbeing, address social challenges and create new opportunities particularly in underserved areas such as post-industrial towns and rural communities. Potential partners include social design agencies, community development organisations, social enterprises, councils and health organisations.

We are looking to undertake projects that examine and explore how different communities can become more productive and resilient. We aim to apply what we have learned to emerging communities through the design of a toolkit to be shared for future use.

### **2. Forge Stronger Links between Technology, Design and People**

Success in the future is likely to be based on survival not of the fittest, but of the most adaptable. The Creative Industries are uniquely positioned to thrive in this environment. The prospect of automation poses challenges, with many predicting large-scale job losses. However, as discussed earlier, creative jobs are at a much lower risk of automation than others<sup>3</sup>, and it is likely that within this future landscape creative skills will become a vital trait for workers across all industries. Design processes and technological advances are opening up new opportunities to face social problems, such as isolation, fostering inclusion and communities' wellbeing, and driving innovation in the health sector. The UK is already one of the world's most innovative countries, ranking fifth in the INSEAD Global Innovation Index 2017. However, this strong position is far from assured, especially given that it slipped from third place in 2016<sup>4</sup>. The Government's plan to stimulate innovation through the new Industrial Strategy Challenge Fund is a positive step, but we recommend earmarking part of the fund to the Creative Industries and ambitious 'blue sky' projects rather than only funding research into applied solutions for known problems.

<sup>3</sup> Bakhshi, Frey, and Osborne, 2015.

<sup>4</sup> Cornell University, INSEAD and WIPO, 2017.

We propose developing products that demonstrate inclusive ways of using augmented reality to promote digital inclusion. For example, the development of prototypes that support and assist currently excluded groups, such as those with visual impairments, in their ability to engage with cultural events, thus impacting upon their wellbeing. Potential partners include ArtLyra Studios, the University of Liverpool, augmented reality companies, charities, and cultural organisations such as FACT.

We aim to develop architectural techniques using AI to enable data-driven design and create prototypes through digital fabrication tools such as 3D printing, laser cutting, CNC machines, and robotics. Potential partners are design and fabrication practices (such as ARUP, AKT II, Skanska, AECOM and others) and schools of architecture.

### 3. Boost Productivity through Digital, Technical and Creative Skills

Radical technological developments are likely in the next thirty years meaning that workers will need to equip themselves with new skills. With the Creative Industries in the North West citing a lack of skilled workers as a major barrier to growth, and, across all industries, too many skills residing in an ageing workforce, many argue that the workforce is unsuitable now, never mind equipped for the future<sup>5</sup>. The demands of the future economy require a fundamental re-conceptualisation of our education models, in which design and creativity are recognised as core tools, transferrable across all subject areas. We recommend eschewing disciplinary silos in favour of interdisciplinary collaboration in which networked and fluid educational institutions link up to businesses and communities. We recommend building a learning system that ensures people of all ages can participate in an economy that is increasingly shaped by innovations in AI and automation. Universities could continue to improve graduate employment programmes by linking further with industry; while businesses could do more to offer training programmes to up-skill their current employees to ensure any skills gaps are mitigated.

We will undertake projects that engage a cross sector of industries to co-create a toolkit for skills analysis. Through exposing embedded creative skill and forms of craft labour within existing workforces, we aim to assist in altering perceptions of traditional skills and impact upon training development models for future work beyond current education policy.

We aim to co-create projects with Creative Industries in the North West Region, applying user-centred approaches to research in the designing of accessible and inclusive products and services for all population groups. These will include ageing generations and vulnerable groups, supporting them to stay active and engaged at work, and to live healthier and more independent lives.

### 4. Support Creative Industries and SMEs to Grow, Expand and Export

While the North West is becoming an increasingly attractive place for entrepreneurs to set up businesses, we recognise that more should be done to support the Creative Industries, especially in regard to access to finance and skilled labour<sup>6</sup>. The institutions that can work together to create an environment in which entrepreneurialism is able to flourish are wide-ranging, and include local councils, LEPs, business leaders, and universities. The success of Liverpool City Council's involvement in the creation of the Baltic Creative CIC could be built upon as a way of increasing investment into the Creative Industries in the North West and in building a resilient ecology of businesses. SMEs already employ an impressive 60% of all workers in the private sector and trends show this is set to rise<sup>7</sup>. It would therefore seem important that SMEs are fairly represented on the boards of LEPs, affording them a greater voice and ability to influence change. LEPs could offer detailed and accessible information on the myriad of financing options available, including angel investors,

<sup>5</sup> Tech City UK, 2017; Baltic Creative, 2017.

<sup>6</sup> Baltic Creative, 2017; Tech City UK, 2017; Nesta, Accenture and Catapult, 2016.

<sup>7</sup> BEIS, 2017b.

peer-to-peer lending, government-backed funds, and the British Business Bank. The British Business Bank, in turn, could actively court micro and small creative industry businesses, which are disproportionately disadvantaged compared to other industries in terms of access to finance<sup>8</sup>. This particularly is the case in the North West. While only 37 per cent of the Creative Industries are based in London, they received over 60 per cent of the UK's equity finance<sup>9</sup>. There is an estimated £3.9bn venture gap in new tech business and £3.33bn of that is outside London and the South East<sup>10</sup>.

Through the use of surveys, interviews and co-design techniques, we intend to engage with creative industry hubs such as incubators and co-working spaces to devise a set of tools that maximise the export potential of creative SMEs across the North West. Potential partners are Baltic Creative in Liverpool, the Department of Industry and Trade, and other interested shared workspaces.

We anticipate undertaking projects that aim to better understand the way in which new, science-led infrastructure impacts on its surrounding urban ecologies by engaging in collaborative projects with scientific research bodies. For example, using visualisation methods, we might create a tool to aid our understanding of how SMEs benefit from investment in scientific research in the North West.

## 5. Build United and Inclusive Leadership Systems

The North West contains a complex mix of leadership systems. These involve networks that include combined authorities, democratically elected mayors, and LEPs, all somewhat dependant and constrained by each other and by Central Government. While these systems have resulted in many successes that can be built upon, it is essential that the region presents a more united front, both nationally and internationally. We recommend a multi-tiered collaborative approach, across geographical boundaries, building on the successes of the combined authorities in the North West; incorporating LEPs and community groups into the processes of local government. To ensure a more cohesive approach between Liverpool and Manchester, we suggest that Metro Mayors should pool 5% of their budgets into a cross-city regional fund. We also recommend that measures are taken to ensure that leadership in the North West better reflects the diversity of its population, including measures to ensure that businesses across the region have a 30% gender and 20% racially diverse leadership team by 2030. We propose that these targets can be achieved through the use of the Industrial Strategy Challenge Fund as a financial incentive to offer funding for programs that target the current barriers to women and BAME groups in business. Through these approaches, we can work towards ensuring that all people across the diverse places of the North West feel that their voices are heard.

We will endeavour to undertake collaborations with SMEs, local governments and social enterprises to increase awareness of the importance of combining analogue and digital technologies. We intend to engage new entrants in the digital community by working with groups such as The Women's Organisation and MadLab, and developing a platform for co-creation across the North West.

We plan to engage with Community Interest Companies (CICs) in the North West, actively exploring how the CIC model holds the potential to foster collaborative, sustainable, socially inclusive ways of living and working in the region. By employing co-design techniques arising from, and responding to, the needs of the community, we will work with CICs to adopt a broad, holistic approach to economic growth; one which seeks to improve local services, business opportunities and living standards in a bespoke manner, placing people at the centre of the process.

<sup>8</sup> Bazalgette, 2017.

<sup>9</sup> Ibid.

<sup>10</sup> Ibid.

## Looking Forward

Creative Industries, and creative skills more generally, are an important vehicle for raising productivity, and future-proofing the economic viability of the North West. The future isn't fixed and we will encounter plenty of 'unknowns'. At the turn of the millennium, neither Facebook nor Skype existed, the iPod was two years away, and smartphones were still in the realm of science fiction.

What will be common in 2050 that we can't foresee today? Will all plastics be biodegradable? Will we have found a cure for cancer, dementia and paralysis? Will national currencies still exist or will cryptocurrencies be the new norm? Will all our energy be carbon neutral? Will most of us work from home or in co-working spaces? How many of us will still work? Will universal basic income be a reality?

We are witnessing the dawn of the 'Fourth Industrial Revolution' in which notions of the real and the digital are increasingly blurred. This revolution will dramatically affect where we work, how much we work, and what kind of work we do. The World Economic Forum estimates that 65 per cent of children starting school this year will be employed in completely new jobs that do not exist<sup>11</sup>. PricewaterhouseCoopers estimates that by 2030 nearly 30 per cent of jobs in the UK will be at a high risk of automation<sup>12</sup>. This prediction may be unnerving to many of us employed today. It is not only the taxi drivers and assembly-line workers whose jobs are already facing automation. Will accountants, engineers and bankers find their jobs are not only different, but redundant? What does work mean? How much do we need to work to earn a living?

We do not know, but what we believe is that the Creative Industries are uniquely positioned to weather these challenges, because they embrace innovation and change. In fact, the World Economic Forum predicts that creativity will be one of the top 3 skills needed to thrive in the Fourth Industrial Revolution<sup>13</sup>.

There are **three key messages** we would like you to take away from this document:

### Invest in the Creative and Digital Industries

Creative workers add above-standard value and can help remediate the UK's persistent productivity problems. With the creative industry at a much lower risk of automation (87 per cent of creative workers in the UK are at low or no risk) the Government should focus its investments in the Creative Industries and arts/creative education<sup>14</sup>. Companies that fuse science, technology, engineering, and maths (STEM) with creative skills grow faster than the average company (17 per cent vs. 8 per cent growth) and are more likely to innovate (32 per cent vs. 13 per cent)<sup>15</sup>. Investing in creative education and the Creative Industries will make the UK economy more robust and resilient to the technological changes awaiting us in the next decades.

### Invest in Design Knowledge Production

Why is design research relevant? Designers offer insights from a different angle to that of scientists, business experts and social scientists. They can reframe problems in innovative ways, opening up new pathways to solutions. Design-led thinking is not simply a niche skill, peripheral to the principal needs of the economy, but is increasingly being seen as a core skill – an essential part of any future worker's toolkit. Those who employ design skills are 47 per cent more productive than the average UK worker, and deliver almost £10 more per hour in GVA<sup>16</sup>. Designers fuse different types of knowledge such as data visualisation and complex problem-solving to offer a unique skill-base essential for the innovators of tomorrow<sup>17</sup>. Design research isn't just about coming up with new ideas and soundbites. It translates to the bottom line: for every £1 business spends on design, an extra £20 in increased revenue and £5 in increased exports is generated<sup>18</sup>. Armed with this knowledge, business leaders can make better informed decisions about where they want to invest (which may be in areas once considered frivolous). Design knowledge production offers unique insights and finds innovative ways of responding to challenges.

<sup>11</sup> World Economic Forum, 2016.

<sup>12</sup> PwC, 2017.

<sup>13</sup> Gray, 2016.

<sup>14</sup> Bazalgette, 2017.

<sup>15</sup> Ibid.

<sup>16</sup> Design Council, 2017a.

<sup>17</sup> Gray, 2016.

<sup>18</sup> AHRC, 2013.

## Invest in the North West Leadership and Skills

For many years, the North has suffered from a lack of funding when compared to London and the South East<sup>19</sup>. The Northern Powerhouse scheme and the Industrial Strategy are welcome remissions. The North West can boast of its industrial prowess – it has the largest manufacturing base of any region in the country, accounting for 13 per cent of the UK's manufacturing GVA<sup>20</sup>. While some may see this as a weakness, as manufacturing is highly susceptible to automation, this is not necessarily so. As discussed in the Technology and People section of this report, Amazon's warehouse in Warrington is a good example where robots are 'working' in collaboration with staff; and Bentley's production line in Cheshire combines automation with highly skilled craftsmanship. These success stories tell us that it is essential we up-skill today's workers and equip our students with 21st century skills to ensure we are harnessing the opportunities that new technologies are generating.

The North West is not only unique in its industrial heritage and 'northern grit', but in its strong sense of community and cooperation. By investing in the local community, we can ensure that local stakeholders shape their environment through the process of co-design, which is proven to work in numerous areas: from the incubation of start-ups to public sector projects supporting ageing populations.

## What can Design Do?

Creatives are uniquely positioned to facilitate exchanges – be it between humans and technology, entrepreneurs and financiers, or governments and voters. It is in the interface between making and implementing that the Creative Industries can add real value to the Industrial Strategy. Using design-led frameworks such as co-design, creatives can catalyse valuable collaborations across diverse sectors to stimulate both innovation and social inclusion. For example, rather than focusing on the disappearance of low-skilled jobs and the rise of automation, creatives can draw on techniques such as user-centred design to develop new ways of working and living alongside AI, making it engaging and accessible. Creatives can help develop flexible approaches to learning, including upskilling and life-long learning, which will be key to raising productivity and harnessing the power of new technologies. Through processes like user-led design and service design, creatives can develop innovative pathways to engaging diverse communities, ensuring that places both retain their individuality and boldly engage with technological developments. Designers are uniquely trained as highly effective communicators, synthesizing complicated information and large-scale developments down to their essence to make them accessible to the widest audience possible. These creative skills will be crucial to tackling a wide range of 21st century challenges such as shifting to clean growth, spearheading new forms of mobility, harnessing the powers of AI and big data, all while satisfying the needs of an ageing population. The North West has a long history of meeting and surpassing the aims set out by the Industrial Strategy – be it forging new paths to global trade or leading the way in technological revolutions – while also remaining one of the most creative places on the planet.

We see this document, not simply as a response to the Government's 2017 Industrial Strategy, but as being deeply situated within the ongoing debates about the importance of design and creativity, and about the spatial rebalancing of the UK's economy. We envisage that this work can act as a catalyst for change and open up fruitful ground for further research. This document will be part of a positive transformation in the North West. The region can become an example for the rest of the UK (and the World) of how the Creative Industries can play a central role in driving growth and innovation in a way that leaves no one behind.

19 IPPR, 2017.

20 Young and Sly, 2010/11.

# GLOSSARY

**Agglomeration** refers to a collection or an assemblage of different places. In the report, an agglomeration is not simply defined by size or concentration but by connectivity, both physical (transport) and digital (digital infrastructure).

**Basic skills** are defined in the report as being beyond core subject areas (English, maths and science): design, health literacy, creative, and digital skills are also included as the basic skills needed in a modern economy. Ageing workforce, progressive automation of jobs, lack of basic digital skills and lack of work readiness from young graduates are forcing us to reconsider what are the primary needs and basic skills that will meet the demands of industry today and in the future.

**Co-design** is often used as an umbrella term to describe a community centred methodology that entails participatory and co-creation design processes. The co-design approach enables a wide range of people to make a creative contribution in the formulation and solution of a problem<sup>1</sup>.

**Community** is a collection of individuals linked by something shared. Whether that be values, a place, identity, politics, practice, or an interest. In a physical location, several communities can coexist and generate networks. In the report, communities are meant as forces central to the growth of the wider economy and the positive change of creative ecologies of an area.

**Creative cluster** is a geographic agglomeration of interconnected businesses in the Creative Industries; located close to one another in a way that allows for collaboration, cooperation, networking, and knowledge spillovers.

**Creative Industries** The Department for Digital, Culture, Media and Sport (DCMS) acknowledges nine sectors that constitute this industry: advertising and marketing; architecture; crafts; design: product, graphic and fashion; film, TV, video, radio, and photography; IT, software, and computer services; publishing; museums, galleries, and libraries; music, performing, and visual arts<sup>2</sup>.

**Creativity** “is the generation of new ideas – either new ways of looking at existing problems, or of seeing new opportunities, perhaps by exploiting emerging technologies or changes in markets”<sup>3</sup>.

**Cultural Asset** includes all factors, physical and ‘symbolic’, that are shared and meaningful within communities (e.g. events, places, traditions). These factors contribute to the vitality of a place and the creative engagement of communities.

**Design** emerges in the report as a strategic tool to tackle major issues and drive social inclusion and economic progression. Design processes operate as facilitators of change and can be deployed to shape and transform concepts and ideas in actions.

**Ecologies** are meant as interactions and relationships between systems. Often understood to be about ‘natural’ systems, ecology can also refer to the complex relationships that exist in, for example, a city: including systems of populations, economy, infrastructure and more<sup>4</sup>, and the various communities within them.

**Education** ‘strikethrough education’ is meant to visually represent, what in the report is proposed as, the replacement of the current educational system with new learning models. The term education as used in the report, refers to traditional educational institutions and disciplinary silos. ~~Education~~ leaves room for a more fused approach to learning, with art and creativity as underlying tools.

**Entrepreneur** from French is literally ‘one who undertakes some tasks’. In the report, it is meant as a motivated, creative, focused, innovative, and risk-taking woman or man that develops an idea into a business.

**Failure** in the common sense, often has a negative connotation. In the report, we consider failure as a natural and constructive stage in the developmental process of an individual or a business. Failure needs to be seen as an opportunity to grow and to learn from; it should not be viewed as a disgrace to be socially ashamed of.

1 Chisholm, n.d.  
2 DCMS, 2016.

3 Cox, 2005, p.2.  
4 Clutter, 2015.

**Fluid institutions** are described as niche, alternative and different scale organisations that are more flexible, emergent, and structurally fluid than traditional institutions; and can influence the way institutional and industrial structures work.

**Fourth Industrial Revolution** is described as a “technological revolution characterised by a fusion of technologies that is blurring the lines between the physical, digital and biological spheres”<sup>5</sup>; creating major social changes and unforeseen opportunities. We must be prepared to keep pace with this rapid change, which will impact everything, from the structure of economies and communities to human identity.

**Health literacy** is defined by the WHO as “the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health”<sup>6</sup>. The concept of health literacy emerges in the report as people’s ability to self-manage their health conditions and live healthier and more independent lives.

**Infrastructure** is referred to as the basic underlying framework of an area, including all the fundamental facilities and systems serving a physical space, including transportation, communication systems, schools, universities, museums, and so on.

**Innovation** “is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations”<sup>7</sup>.

**Interventions** in the report are proposed as opportunities to unlock and increase economic growth; they are intended as responses to economic challenges faced by the North West explored and viewed through the lens of creativity and innovation.

**Leadership** in this report is considered as an outward facing, collaborative process that guides stakeholders towards a common goal, utilising a network of expertise to create the best outcomes for an area, business or group.

**Makerspaces** are spaces where people with common interests can meet, share and collaborate. They are usually community operated with few barriers through which knowledge is more easily accessed by businesses, education, and community groups alike.

**Northern Powerhouse** is a coalition that brings together cities, towns, and rural communities of the north of England and Wales to become a powerful economy and interconnected area<sup>8</sup>.

**Place** is a “space with a meaning”<sup>9</sup>, that is created and validated by the people who live in and use the space, so it is personal by nature. Place and community are intrinsically linked and are actively and mutually shaped by each other. Getting to know local communities and networks (e.g. residents, businesses, academics) gives access to those meanings, to fully comprehend the nature of a place.

**Placemaking** refers to community participation in the improvement of a physical place; using a creative, people-centred and locally driven approach to bettering their area. The Creative Industries can act as bridges between communities, local governments and interested parties, encouraging connection and engagement to foster the placemaking process.

**Provocations** in the report are intended as actions to deliberately elicit a reflection in the audience, opening up discussion and prompting dialogue regarding the role of creative economy in the economic growth of the North West region and the vital contribution it makes to the UK’s economy.

**Sandbox** refers to a collaborative event where innovative ideas can be developed and tried out in a supportive environment, often around a predefined theme<sup>10</sup>. The term originates from software development, where programmers would try out new ideas without risk to the original programming.

**Sub-region** refers to any area within a larger, defined region. In this document the region referred to is the North West, made up of many sub-regions that can overlap.

**Value** is the combined sum of economic, cultural, and political value. It is the financially sustainable growth of a geographic area, integrated with the generation and spreading of a shared “collective programming”<sup>11</sup>, and the fostering of inclusive and supportive policies.

5 Schwab, 2017, p. 40.

6 WHO, n.d.

7 OECD/Eurostat, 2005, p. 46.

8 Northern Powerhouse, n.d.

9 Warren and Jones, 2015, p. 9.

10 Watershed, 2011.

11 Kruchten, 2002.

# ABBREVIATIONS

**GDP: Gross Domestic Product** “measures the total value of all of the goods made, and services provided, during a specific period of time”<sup>12</sup>.

**GVA: Gross Value Added** “measures the contribution to an economy of an individual producer, industry, sector or region. It is used in the calculation of gross domestic product (GDP)”<sup>13</sup>.

**LEPs: Local Enterprise Partnerships** “are local business led partnerships between local authorities and businesses and play a central role in determining local economic priorities and undertaking activities to drive economic growth and the creation of local jobs”<sup>14</sup>.

**SMEs: Small and Medium-sized Enterprises** are defined in the UK as any business with a turnover of less than £25m, gross assets of less than £12.5m, and with fewer than 250 employees<sup>15</sup>.



The rolling hill and dales – one of the North West’s most beautiful natural assets. Wasdale, Lake District

<sup>12</sup> Gov.UK, 2017.

<sup>13</sup> Financial Times, n.d.

<sup>14</sup> LEP Network, n.d.a.

<sup>15</sup> BIS, 2012\*.



BlueDot Festival at Jodrell Bank – fusing science, learning and music.

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## Figure 1: Strengths in the North West Map

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# IMAGE REFERENCES

- p 15 *Liverpool From the Air*. Image credit: Gareth Jones.
- p 17 *Vintage By The Sea*. Image credit: Danny Allison and Deco Publique.
- p 21 *World's most powerful aerospace gearbox starts high power testing*. Image credit: Rolls-Royce PLC.
- p 23 *Employee picking with Amazon Robotics*. Image credit: Amazon.
- p 27 *Intergenerational learning*. Image credit: Craig Newman and Purple Custard.
- p 33 *Manchester Airport Bridge*. Image credit: Marketing Manchester.
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The team in a collaborative writing workshop at Liverpool University, December 2017

