

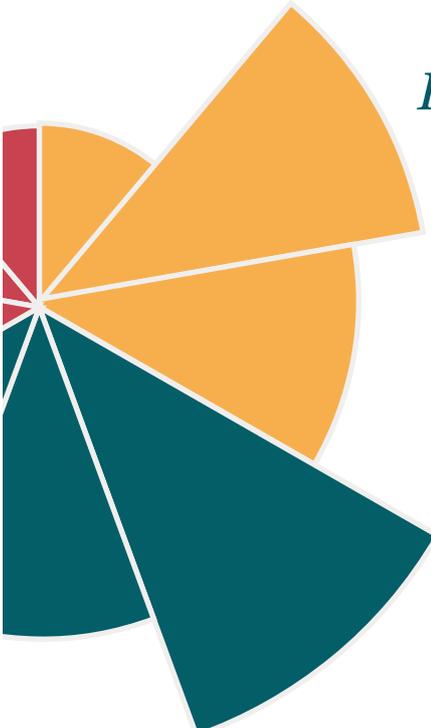


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CITY INITIATIVES *for*
TECHNOLOGY, INNOVATION
and **ENTREPRENEURSHIP**

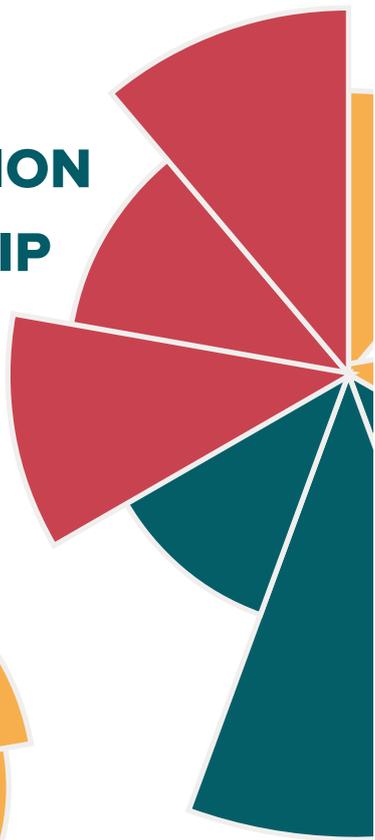
*The Northern
Powerhouse Analysis*

June 2016



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From our Urban Innovation Centre in London, we provide world-class facilities and expertise to support the development of new products and services, as well as opportunities to collaborate with others, test ideas and develop business models.

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CITY INITIATIVES *for* TECHNOLOGY, INNOVATION *and* ENTREPRENEURSHIP

The Northern Powerhouse analysis

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FOREWORD

*Professor Greg Clark CBE
Fellow of the Future Cities Catapult
and Global Advisor*

The Northern Powerhouse city regions combine a population larger than Greater London, a jobs base that is larger than New York City, and more world top 200 universities than Grand Paris. Moreover, they have recognised strengths in advanced manufacturing, materials science, energy, health, digital and creative industries, and strong underpinning sectors in professional services, finance, aviation, logistics and freight.

For over a century in the 1800s and 1900s this great region was the innovation district of the world, patenting and commercialising many of the inventions that came to be the hallmarks of the industrial revolution. Discovery and mercantilism lie deep in its DNA. No wonder that in the 'post-industrial' 21st century, just as the modern industries that are shaped by our new technologies evolve and expand, we look once again to the North of England and its great city regions to be the hot-beds of modern prosperity.

The *CITIE Northern Powerhouse Analysis* brings together essential ingredients that are the drivers of our new times; new technologies, connected city regions, competitive business climates, and

the conditions for creative enterprise. Through the comparative and diagnostic assessment it reveals both the hard and soft factors needed to help promote innovative enterprise, and benchmarks the Northern Powerhouse against leading global cities.

Through deep-dives into city regions' key strengths, it showcases the North's expanding innovation ecosystem and points to recommendations that amplify existing best practice and generate value through greater collaboration across the Northern Powerhouse.

In CITIE's review of leading regional practice, common opportunities and challenges, and set of 16 actionable recommendations, city leaders in England's Northern Powerhouse (and beyond) will find a useful resource from which to build strategies, make investments, and foster the conditions, behaviours, and opportunities needed for thriving enterprise and invention.

In this new digital and metropolitan century the world will be led by places that can combine not only technology and scientific capability, but also the ability to foster the climate in which discovery, enterprise, and trade can leverage quality of place, freedom of thought, and the habits of collaboration needed to encourage uniquely relevant businesses and inspiring entrepreneurs.

EXECUTIVE SUMMARY

*Through devolution, government city policy is undergoing one of its most significant shifts in a generation, making it timely to bring the original CITIE framework to the UK with this report, **CITIE: The Northern Powerhouse analysis.***

This analysis explores the performance of the Northern Powerhouse's six largest city regions of Greater Manchester Combined Authority, Hull City Region, Liverpool City Region Combined Authority, North East Combined Authority, Sheffield City Region Combined Authority and the West Yorkshire Combined Authority.

Whilst still more a political construct than an economic unit, the Northern Powerhouse does share a number of similarities across its city regions. City regions in the North are rich with excellent knowledge assets, house many top universities and numerous high tech and creative clusters, display rapidly growing digital GVA (Gross Value Added) and, in a several cases, higher than average proportion of high-growth firms. However, the region is not without its challenges. Northern cities face hurdles in relation to productivity which trails the national average by 11 per cent, their ability to retain top talent post graduation, small business survival, and like all UK cities, are coping with significant budgetary constraints amongst an increasingly demanding populous. The region also lags the other regions in the attraction of international investment.

Innovation and entrepreneurship have never been more crucial qualities in helping secure the long-term sustainable prosperity of the Northern Powerhouse – in creating grass roots local employment opportunities, in providing a fertile innovation ground

that attracts big international business, for acting as a idea generation pool to help local government solve some of its most complex urban challenges.

Through central government's devolution agenda, city regions will soon have the powers to better respond to these opportunities and challenges, based on local needs and ambitions. The commitment to an integrated transport system for the North can operate as a catalyst; improving free movement of labour and encouraging the cross-fertilisation of ideas. But it is only if these major infrastructure investments and these increases in local budgetary controls are made in parallel with smart policy tweaks that are mindful of the start-up and innovation ecosystem, will we realise an important multiplier effect that can set northern city regions on a path towards reaping the innovation dividend and enduring prosperity.

“Transport is only one part of delivering the economic growth picture, there's a lot that can be tackled at the Northern level, including innovation, skills, and education.”

David Brown

Chief Executive, Transport for the North

Section 1: An introduction to the Northern Powerhouse and CITIE

This section of the report explains the framework in the context of devolution. The CITIE framework is a diagnostic tool that captures over 35 individual data points per city region. This is supplemented with qualitative data from interviews, to generate a snapshot of an areas relative strength and weakness for stimulating innovation and entrepreneurship. These capabilities are organised into nine distinct roles the city can play – for example, as a Customer of innovation within their procurement practices, or as a Host of innovation, using their physical spaces. The framework helps city governments to recognise where they are excelling and where they could benefit from adopting best practices from other global cities.

Section 2: Northern Powerhouse performance and recommendations

Within the Northern Powerhouse analysis, the team worked closely with multidisciplinary practitioners, to go beyond the analysis of the current perspective, to set out 16 definitive and actionable recommendations to the city regions to support them in accelerating innovation and entrepreneurship, and raise their game in this global competition.

The 6 key recommendations highlighted below, speak to where the city regions in the Northern Powerhouse, are collectively performing below average, and have the opportunity to collaborate in the development of solutions and make a step change in performance.

The following page gives a comprehensive list of the recommendations.



DATAVORE
Establish Offices of Data Analytics



REGULATOR
Undertake collective analysis of emerging business models



STRATEGIST
Formalise CDO and/or CIO roles in Combined Authorities



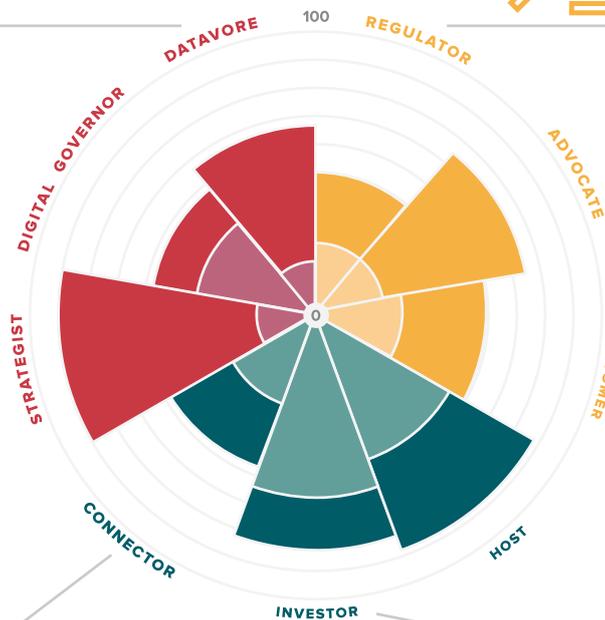
CUSTOMER
Design a Northern Powerhouse challenge prize series



CONNECTOR
Establish city-wide IoT platforms to stimulate digital infrastructure innovation



INVESTOR
Equip young people with digital skills and cultivate a culture of entrepreneurialism



Maximum and minimum CITIE profile of the Northern Powerhouse city regions and highlighted recommendations

16 RECOMMENDATIONS TO THE NORTHERN POWERHOUSE CITY REGIONS

RECOMMENDATION 1: **Undertake collective analysis of emerging business models**

RECOMMENDATION 2: **Conduct a regulatory review to harmonise across boundaries**

RECOMMENDATION 3: **Increase international exposure of the Northern Powerhouse**

RECOMMENDATION 4: **Expand international transport linkages to enable global business connections**

RECOMMENDATION 5: **Design a Northern Powerhouse challenge prize series**

RECOMMENDATION 6: **Strengthen links between the city regions and entrepreneurs**

RECOMMENDATION 7: **Establish career pathways to encourage graduates to stay**

RECOMMENDATION 8: **Equip young people with digital skills and cultivate a culture of entrepreneurialism**

RECOMMENDATION 9: **Support Venture Capital trade missions to connect start-ups**

RECOMMENDATION 10: **Establish city-wide IoT platforms to stimulate digital infrastructure innovation**

RECOMMENDATION 11: **Increase transportation options with bike-sharing and citizen engagement**

RECOMMENDATION 12: **Formalise CDO and/or CIO roles in Combined Authorities**

RECOMMENDATION 13: **Jointly produce adaptable digital products for city regions**

RECOMMENDATION 14: **Use digital technologies to engage citizens in decision making and problem solving**

RECOMMENDATION 15: **Establish Offices of Data Analytics**

RECOMMENDATION 16: **Make all city procurement contracts 'Open by Default'**

Section 3: Analysis of the city regions

This section provides the geographic lens, setting out for each city region, their individual performance against the CITIE framework, key strengths, promising practices, and priority areas for improvement.

CITIE: The Northern Powerhouse Analysis shows a region rapidly developing its own unique approaches to catalysing innovation and entrepreneurship. High performing city regions are taking advantage of the devolution and city deals agenda to redefine their

own stories, and create their own distinct pathways to success.

There are world-class examples in different domains, for example, Manchester's success as a Strategist, North East's strong all rounder profile, with a particular highlight in Investor, Liverpool's strength in Customer, West Yorkshire's in Datavore and Sheffield's role as an Advocate, for example.

We have summarised some of these factors across high-performing cities below.

WE HAVE DISTILLED SOME OF THE NOTICEABLE CHARACTERISTICS DRIVING HIGHER PERFORMANCE ACROSS THE CITY REGIONS INTO THREE AREAS:

1. A clear mandate to lead on innovation

The critical mass of Combined Authorities is generating increased leadership capacity and acumen towards innovation and entrepreneurship. Increasingly, these cities are taking on the mantle to become innovation leaders, and supporting a cultural shift in mindsets as they craft their own destinies.

2. Demonstrable willingness to collaborate

The solutions to city challenges, both internal and external don't reside solely in city hall. The leading city regions engage their

ecosystem as a valuable resource for ideas, working with entrepreneurs, universities, and their regional and global peers, to share, learn, and jointly develop solutions.

3. Active curation of the marketplace

Leading cities actively curate the marketplace and promote innovation growth by providing start-ups and innovators with the platform, workspace, data, and financial support to develop commercially viable products and services.

Within each city region, the report pulls out two potential areas for improvement and refers to relevant global best practice from which city regions can draw inspiration.

This actionable insight, which, for limited financial investment, can yield significant positive improvement in their ability to attract and retain the most sought-after entrepreneurial talent.

The Northern Powerhouse region as a whole has best practice to rival that of the 40 global leading cities from the 2015 CITIE analysis. The six cities are

on a par with many European cities, and whilst they trail a number of their North American counterparts, they are often not far behind, and could emulate their performance with a concerted push to prioritise innovation and entrepreneurship.

By cities actioning policy tweaks and amplifying existing initiatives on an individual basis, and by recognising where important opportunities exist for collaboration across the region, Northern Cities can lead the UK and the world in their innovation capability.

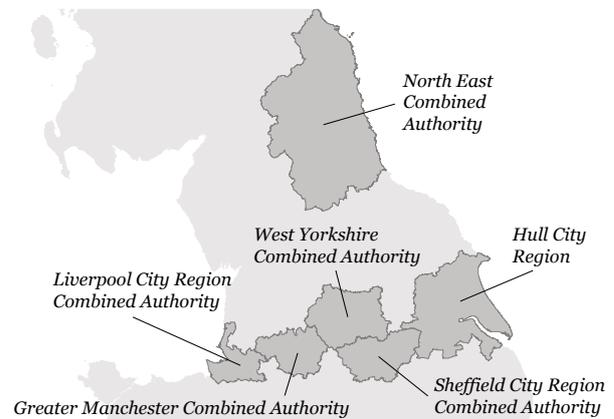
Section one: AN INTRODUCTION TO THE NORTHERN POWERHOUSE AND CITIE

The term ‘Northern Powerhouse’ has risen in political prominence since the arrival of the Coalition government of 2010. In a speech in June 2014, Chancellor George Osborne argued that Northern cities could be stronger by acting collectively, and that to do so they would require modern transport connections; support for their science and university research; backing for their creative clusters; and greater local power and control. The term has been met with varying levels of acceptance locally, and describes a region whose cities have distinct strengths and weakness, but also share much in common.

The Northern Powerhouse covers an economic area with a GVA of £289 billion,¹ and stretches over the North East, North West and Yorkshire & the Humber regions in northern England. For the purposes of this report, the boundaries of the Northern Powerhouse are defined to the six city regions of Hull City Region, Liverpool City Region Combined Authority, Greater Manchester Combined Authority, North East Combined Authority, Sheffield City Region Combined Authority, and West Yorkshire Combined Authority.²

Collectively, these city regions are home to 23 universities as well as a diversity of clusters specialising in areas such as advanced manufacturing, e-commerce, software, health-tech, media, digital gaming, and Internet of Things (IoT). The proportion of high-growth firms in Liverpool, Greater Manchester, West Yorkshire is higher than the national average.³ Greater Manchester boasts the second highest number of digital sector jobs in the country and digital Gross Value Add (GVA) growth.⁴ The North East and West Yorkshire have demonstrated much stronger job creation rates, 4.8 per cent and 4.0 per cent respectively, than the national average of 1.9 per cent.⁵

Figure 1: City regions assessed



However, the city regions also face significant and entrenched challenges. Deep cuts to local budgets have left local authorities constrained as demand for public services and complexity of need has continued to rise. Workforce skill levels are below the national average, and contribute to the region’s persistent productivity gap, which trails the UK rate by 11.1 per cent.⁶ Despite the higher proportion of high-growth firms in some areas, start-up and business survival rates across most of the Northern Powerhouse are lower than the national average.⁷ A recent study also concludes that as many as 52 per cent of Science, Technology, Engineering, and Maths (STEM) graduates from the top eight Northern universities leave the region to seek careers elsewhere.⁸

Through the UK government’s devolution agenda, city regions will soon have the powers to directly respond to these opportunities and challenges, and shape their destinies based on local needs and ambitions. As the current legislative framework imposes few restrictions for the kinds of powers that can be devolved, local leaders will have even more flexibility in how they support smart, sustainable, fair, and prosperous city regions.

DEVOLUTION IN THE UK:

The UK government is undertaking the most radical programme of devolution within England in a generation. Since 2010, 28 cities have negotiated bespoke City Deals, which decentralise specific policy programmes and funding streams. Cities were granted more freedom over powers they could seek from central government with the introduction of the Localism Act 2011 and the Cities and Local Government Devolution Act 2016. The resulting Devolution Deals, secured by eight city regions to date, are now transferring significant powers and budgets over entire policy areas to local authorities, including transport and economic regeneration. While not required to form Combined Authorities (CA) to exercise new powers, the CA is seen as an 'optimum form of governance' for devolution.⁹ Greater Manchester was the first form a CA in 2011, and the city regions of Sheffield, Liverpool, North East, West Yorkshire and Liverpool were established in 2014.

The opportunity therefore exists for the Northern Powerhouse to define a significant part of its own future development, moving beyond the false comparison of the 'London model', and instead blending local strengths with best practices from all over the world.

Whichever path city regions choose to a more prosperous future, ensuring the right conditions

are in place for entrepreneurship and innovation to flourish will help them get there. City Initiatives for Technology, Innovation and Entrepreneurship (CITIE), exists to provide city policymakers with a resource to support the development of policy initiatives to catalyse innovation and entrepreneurship in cities. It therefore serves as a timely resource for city regions in the Northern Powerhouse.

WHY DOES INNOVATION AND ENTREPRENEURSHIP MATTER TO CITIES?

- Growth is disproportionately driven by young, high-growth companies.¹⁰ Between 2010 and 2013 high-growth companies in the UK accounted for just 1 per cent of all job creating firms, but 18 per cent of the jobs created.¹¹
- Digital technologies have been shown to unlock faster economic growth, by 2.3 per cent in real terms.¹²
- 36 per cent of UK jobs are at risk of automation, innovative companies are creating the skills and ideas that cities will need to compete in an increasingly digital global economy.¹³
- Leading cities are increasingly engaging with outside ideas and innovators to improve services, develop new skills, and jointly create solutions to complex problems.
- Jobs in the digital economy are increasing at 10 times the rate of non-digital sectors in the North, and productivity for the digital economy at 4 times the rate of non-digital sectors.¹⁴

In addition to providing recommendations to city regions, this report also highlights where greater collaboration among city regions in the Northern Powerhouse could provide value, by expanding the marketplace for innovation and investment, building an evidence base for what works in the North, and sharing of best practice. There remains, however, a significant need to better understand how the Northern Powerhouse economy functions as a single unit and where genuine opportunities for coordination exist.

“Would a perfect Northern Powerhouse be a jigsaw of unique skills and really well thought-out city regions, rather than six places attempting to do the same thing?”

David Dunn
CEO, Sunderland Software City

What is CITIE?

City Initiatives for Technology, Innovation and Entrepreneurship (CITIE) is the product of a partnership between Nesta, Accenture and the Future Cities Catapult.

CITIE provides city policymakers with a resource to support the development of policy initiatives to catalyse innovation and entrepreneurship in cities.

CITIE comprises three main components (see Figure 2):

1. A framework for understanding how policy in nine key areas at the city level can be used to support innovation and entrepreneurship (see Figure 3).
2. A diagnostic tool that allows cities to understand how they perform against this framework relative to over 40 global cities.

3. A range of examples and case studies that shine a light on best practice from around the world.

CITIE is designed to be used by policymakers in cities. To the greatest extent possible, it focuses on those policy levers that city governments have at their disposal, although this inevitably varies from place to place.

Explore the framework, diagnostic tool and case studies from the previous cities that were assessed at: www.citie.org

For further detail on the research methodology, see Appendices 1-3.

Figure 2: CITIE resources



CITIE FRAMEWORK

An assessment of 40 global cities against a framework of policy levers city governments can use to support innovation and entrepreneurship



DIAGNOSTIC TOOL

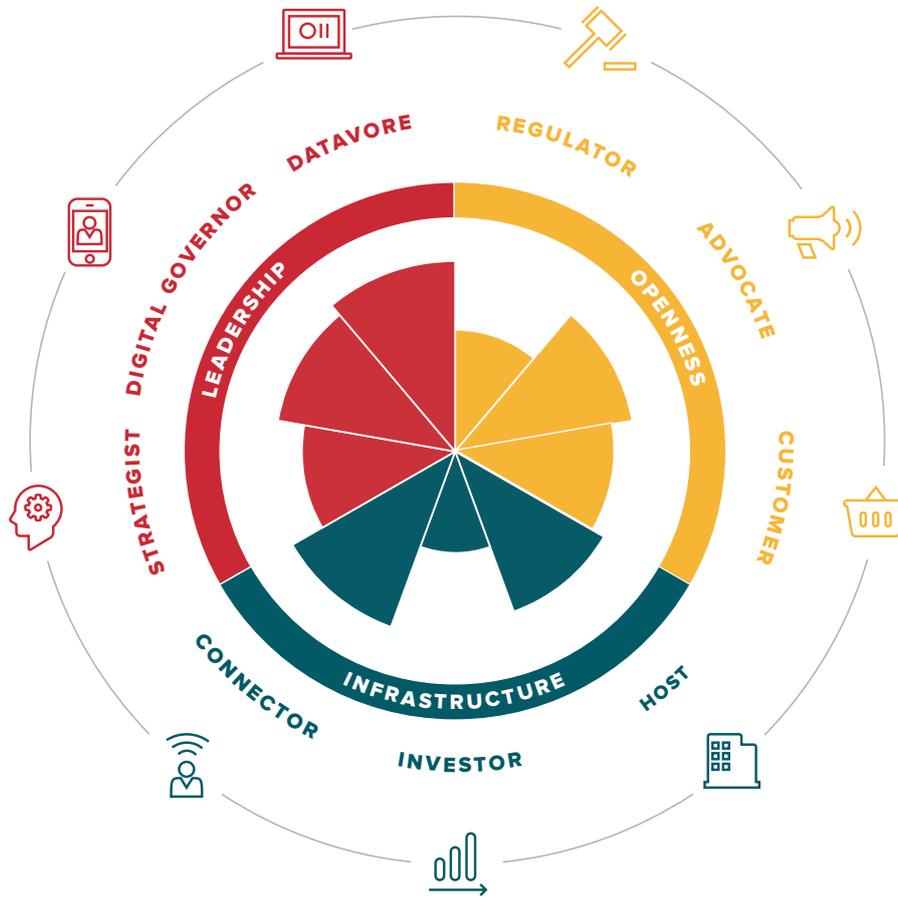
An online tool to allow city governments to explore their performance and assess how they compare with their peers



CASE STUDIES

A series of case studies for cities to learn about global best practice

Figure 3: The CITIE Framework



OPENNESS	INFRASTRUCTURE	LEADERSHIP
<p>How open is the city to new ideas and businesses?</p>	<p>How does the city optimise its infrastructure for high-growth new businesses?</p>	<p>How does the city build innovation into its own activities?</p>
<p>REGULATOR How does the city regulate business models in a way that allows for disruptive entry?</p>	<p>HOST How does the city use space to create opportunities for high-growth companies?</p>	<p>STRATEGIST Has the city set a clear direction and built the internal capability required to support innovation?</p>
<p>ADVOCATE How does the city promote itself as an innovative hub and its new business community to the outside world?</p>	<p>INVESTOR How does the city invest in the skills and businesses required for innovation?</p>	<p>DIGITAL GOVERNOR How does the city use digital channels to foster high-quality, low-friction engagement with citizens?</p>
<p>CUSTOMER Is procurement accessible to small businesses, and does it actively seek out innovation?</p>	<p>CONNECTOR How does the city facilitate physical and digital connectivity?</p>	<p>DATAVORE How does the city use data to optimise services and provide the raw material for innovation?</p>

Section two: **NORTHERN POWERHOUSE PERFORMANCE AND RECOMMENDATIONS**

2.1 PERFORMANCE AGAINST THE CITIE FRAMEWORK

The CITIE Framework shows a Northern Powerhouse whose city regions have distinct best-practices and specialisations, as well as similar overall strengths and weakness.

The average scores of the six city regions measured against the CITIE Framework result in moderate performance, where collectively they rank with average consistency across all metrics (see Figure 4). Overall, performance is well rounded in nature and stronger results are evident in the Investor, Host and Advocate roles.

Compared to international peers from the previous CITIE analysis, Northern Powerhouse's performance is on par with that of European cities,⁷ but trails North American counterparts in nearly each of CITIE's nine policy roles (see Figures 6 and 7).

When we combine leading performance from the six city regions (see Figure 5), however, the results show a profile rivalling that of global leaders from the CITIE 2015 analysis. This demonstrates a strong argument

for collaboration and amplification of existing best practice in the region, to both improve individual performance and that of the Northern Powerhouse.

“ We cannot survive in isolation from each other in an incredibly competitive global race. Complementarity and collaboration is very important for our individual and mutual growth. ”

Ged Fitzgerald

Chief Executive Officer, Liverpool City Council

The following section analyses the region's performance in more detail, by each CITIE role, and sets out 16 overarching recommendations, drawing on leading practice in the Northern Powerhouse and globally

Figure 4: Average CITIE profile of the Northern Powerhouse city regions

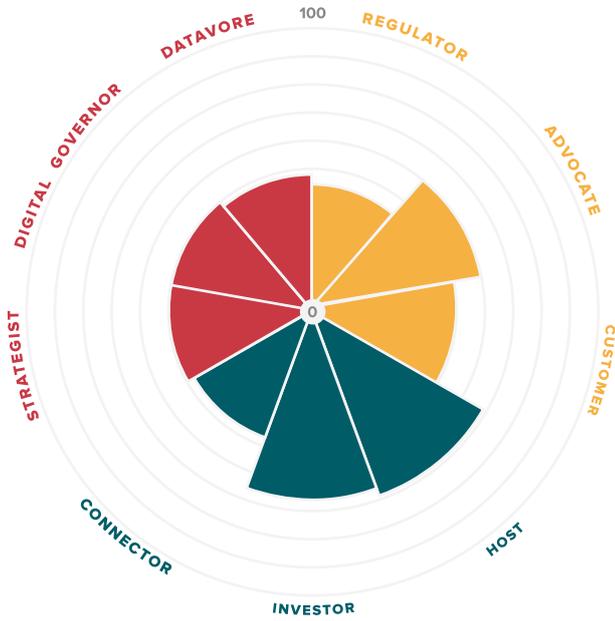


Figure 5: Maximum and minimum CITIE profile of the Northern Powerhouse city regions

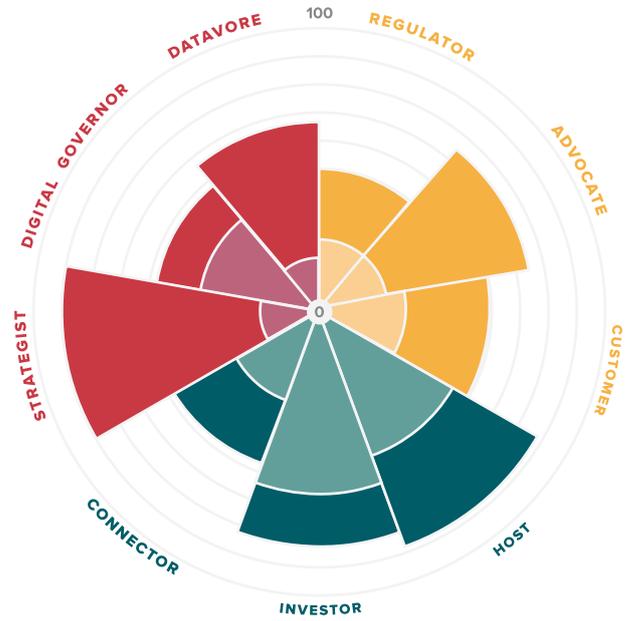


Figure 6: Northern Powerhouse vs. European cities*

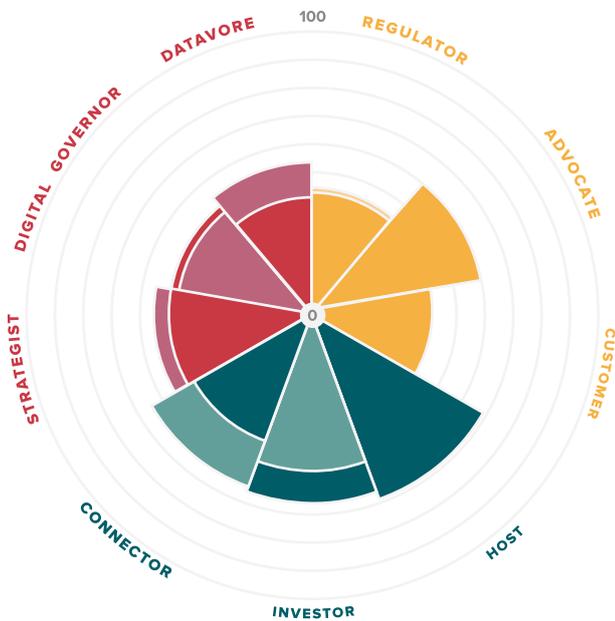
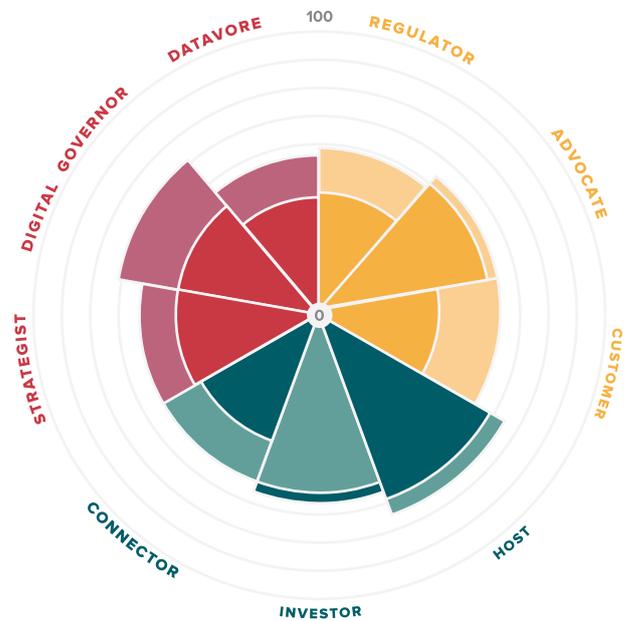


Figure 7: Northern Powerhouse vs. North American cities**



* The European peer group comprises Amsterdam, Barcelona, Berlin, Brussels, Cardiff City Region, Copenhagen, Geneva, Helsinki, Hull City Region, Liverpool City Region Combined Authority, London, Greater Manchester Combined Authority, Moscow, North East Combined Authority, Paris, Prague, Sheffield City Region Combined Authority, Tallinn, West Yorkshire Combined Authority, Vienna and Zürich.

** The North American peer group comprises Boston, Chicago, Los Angeles, New York City, San Francisco, Seattle, Toronto and Vancouver

Key: The average performance of the Northern Powerhouse city regions is represented by the darker shades, and European and North American cities by the lighter shades

2.2 ANALYSIS AND RECOMMENDATIONS



CITY AS REGULATOR

How does the city regulate business models in a way that allows for disruptive entry?

Thanks to enabling national legislation,^{15, 16} and lessons drawn from other UK and international experience, cities in the Northern Powerhouse have benefitted from greater regulatory clarity and precedent in responding to disruptive business models, such as ride-sharing and short-term letting platforms. For example, most local authorities have been able to easily absorb Uber's operations by issuing private hire licences.

Overall, the Northern Powerhouse city regions demonstrate a level of openness to disruptive business models comparable to that of the European peers, but a more proactive approach, built on foresight management, wider engagement, and a streamlined regulatory environment, would strengthen performance.

RECOMMENDATION 1: Undertake collective analysis of emerging business models

City regions, through Combined Authorities or LEPs, would conduct periodic reviews of emerging business models and future technologies (e.g. Mobility as a Service, autonomous vehicles, FinTech, Blockchain, etc.) to understand where regulatory barriers and gaps might limit adoption and

innovation or create unfair advantage in established markets. Going a step further, the process should bring together traditional market players, new entrants and citizens to jointly work out solutions, and create regions where these solutions can be tested and refined.

RECOMMENDATION 2: Conduct a regulatory review to harmonise across boundaries

As Combined Authorities evolve and take on more responsibility, a city region regulatory review would help identify conflicting or overlapping policies and rules. Where advantageous, Combined Authorities would also consider harmonisation of certain

regulation to create a more predictable climate for business and innovation. People live and work across political boundaries, therefore, for instance, a consistent approach to ride-sharing within a city region would be beneficial.



CITY AS ADVOCATE

How does the city promote itself as an innovative hub and its new business community to the outside world?

Northern Powerhouse city regions perform similar to both European and North American peers (see Figures 6 and 7) in advocating for SMEs, start-ups and scale-ups.

Local economic development organisations offer programmes, services, and advice tailored to SMEs and start-ups, and aggregate the business support available in convenient virtual one-stop-shops. City regions also perform consistently well on supporting new businesses to establish themselves locally (so-called ‘soft landing’ support), with most providing a combination of free office space, introductions to local networks, and assistance after initial ‘landing’ to attract and support new investment. As more regional organisations such as North Invest and Tech North establish themselves, the potential to collaborate in the delivery of some of these services and provide pan-regional offerings to entrepreneurs should not be overlooked.

Furthermore, city regions in this analysis are home to vibrant tech clusters and talent, boast world-class collaborative R&D facilities, and benefit from some of the lowest overhead costs for businesses in the UK. However, marketing these strengths clearly and widely to entrepreneurs and investors, both in the UK and globally, remains a key gap.

“There’s a growing amount of evidence that suggests very strongly that there already exists a “tech north.” The challenge is much more about communicating what’s already happening across the North and less about having to set aspirations or fundamentally engineer tech clusters.”

Herb Kim
Interim Director, Tech North

RECOMMENDATION 3: Increase international exposure of the Northern Powerhouse

A strong regional brand and marketing strategy for the Northern Powerhouse and/or individual city regions is crucial to attracting more inward investment and connecting local business to global market opportunities. An internationally recognised conference that puts innovators and entrepreneurs centre-stage, building on examples such as Sheffield’s MADE festival, Liverpool’s International Festival of Business or the Northern Powerhouse

International Conference and Exhibition, would showcase regional talent and the advantages of doing business in the North.

A third pan-regional body party, such as North Invest or Tech North, would take on a coordinating role to support the development of a Northern Powerhouse brand and marketing strategy, which city regions could complement with sector specific specialist branding.

RECOMMENDATION 4: Expand international transport linkages to enable global business connections

Transport for the North and projects such as Liverpool2, a new port that will enable direct connections to key global markets, are reversing years of underinvestment in northern transport and trade infrastructure. Given the close link

between transport, productivity and trade, Northern Powerhouse city regions should continue to collectively advocate for greater trade infrastructure investments that will help close the North’s productivity gap.



CITY AS CUSTOMER

Is procurement accessible to new businesses, and does it actively seek out innovation?

Northern Powerhouse city regions underperform their North American counterparts in ensuring public procurement is accessible to SMEs and actively draws through innovative ideas, yet a number of city regions demonstrate elements of best practice.

Manchester City Council's SME friendly procurement policy requires no prequalification for contracts under £100,000,¹⁷ and Liverpool City Council's targets to increase SME purchasing contracts by 5 per cent per year are models that others have the power to implement at little or no cost. The Sheffield Smart Lab run by Sheffield City Council in partnership with Amey and Ferrovial (see Section 3.5) is also demonstrating the value that challenge-based approaches can achieve for the public sector, while simultaneously creating a supportive marketplace for start-ups.

“ We’re the owner of challenges and we’re the buyer of solutions - that is a very powerful position ”

John Mothersole
CEO, Sheffield City Council

With many Combined Authorities in the Northern Powerhouse still in the early stages of formation, there is an opportunity to develop SME and start-up friendly procurement policies that build on the lessons of other Northern cities and those around the world. A common approach to procurement and challenge led-solutions across city regions would help maximise cross-regional support and market creation for SMEs and entrepreneurs.

RECOMMENDATION 5: Design a Northern Powerhouse challenge prize series

Through challenge-led procurement – competitions based on finding solutions to city or public sector challenges, rather than strict contract specification that presume the best answer – cities can both support fledgling entrepreneurs and address key policy issues. By taking ownership over individual strands (e.g. health, productivity etc.) city regions

could collaborate on a series of pan-Northern challenge prizes that would create a larger, more attractive market for innovators, while also reducing the associated risk and cost for individual cities. Such a partnership would also support a ‘build once, use many times’ approach across the region.



CITY AS HOST

How does the city use space to create opportunities for high-growth companies?

Cities in the Northern Powerhouse are proving increasingly good hosts to entrepreneur and start-up communities.

Low cost office space in the Northern cities is among the most affordable in the global CITIE analysis, granting start-ups more 'runway' to experiment, fail, and reiterate compared to those in costlier cities. Strong innovation districts are already present in several places, such as Media City UK in Salford, Greater Manchester, or Sheffield's Advanced Manufacturing Innovation District, while other city regions are investing in expanding their own collaborative, knowledge-intensive quarters.

Over the last few years, many affordable and collaborative co-working office spaces have also

“There is a need for more innovation infrastructure – incubators, science parks – to improve commercialisation.”

Hans Moller
Innovation Director, North East LEP

opened across the Northern Powerhouse. However accelerators and incubator spaces remain in shorter supply in most city regions relative to the number of start-ups and early-stage SMEs in the region. Cities could also be doing more to host entrepreneurs within government and learn directly from local innovators.

RECOMMENDATION 6: Strengthen links between the city regions and entrepreneurs

By establishing a Start-up-in-Residence programme (i.e. inviting one or more start-ups to work alongside local public sector staff for a period of time, as San Francisco has done)¹⁸ or working with local incubators through sponsored competitions, city officials can develop new skills and improve understanding of emerging technologies, while also collaboratively addressing local issues with

entrepreneurs and supporting start-ups to gain exposure.

Going further, the city regions could support the creation of a pan-regional incubator network to increase regional mobility, allowing entrepreneurs to work across different centres, and develop co-working hubs in residential areas.



CITY AS INVESTOR

How does the city invest in the skills and businesses required for innovation?

Access to highly-skilled labour is a key concern for many UK businesses, including those in the Northern Powerhouse. In Leeds, 60 per cent of digital businesses indicate 'limited talent supply' as a challenge, yet the same firms also cite the local graduate pool as a key benefit.¹⁹ This paradoxical perspective holds true for other city regions of the Northern Powerhouse.²⁰

A number of innovative investments to support tech and IT skill development are underway in the North: Sheffield City Council partners with local universities and businesses to deliver the Computer Science

Ambassadors programme, which provides young people with skills in new digital technologies; Leeds City Council offers free 'Hour of Code' programming lessons for adults; Newcastle and Sunderland City Councils also collaborate with a local tech employer network, Dynamo, to support an apprentice hub designed to address the local IT skills gap (see Section 3.4). Such schemes give the Northern Powerhouse an edge over North American and European peers.

The limited number of Venture Capital firms, however, is another key challenge for start-ups in the North. As a result, many must look for capital outside the region, which is both costly and creates additional risk.

RECOMMENDATION 7: Establish career pathways to encourage graduates to stay

Through match-making programmes and tailored career services, cities can create greater visibility of local employers and careers. Programmes such as Sheffield's RISE internship scheme (see Section 3.5), help graduates connect to opportunities with

local SMEs.²¹ This could be complemented by a marketing strategy emphasising the improved quality of life, lower cost of living, housing and doing business in the Northern Powerhouse.

RECOMMENDATION 8: Equip young people with digital skills and cultivate a culture of entrepreneurialism

Provision of digitally-focussed apprenticeships would contribute to narrowing the local skills gap. In addition, youth enterprise competitions or small grants for younger entrepreneurs, such as Hull's Youth Enterprise Bank scheme (see Section

3.2), could also energise business-minded youth. Engaging big business in developing digital skills for the region would also help create a stronger culture of entrepreneurialism.

RECOMMENDATION 9: Support Venture Capital trade missions to connect start-ups

Access to finance is a major reason why city regions in the Northern Powerhouse have below average start-up and survival rates of new business.²² Welsh ICE, a Cardiff based incubator runs monthly trade missions to London for entrepreneurs to obtain funding and develop their networks. City regions could develop similar trade missions to help their

start-ups access funding, as well as bring Venture Capital firms to their cities to increase visibility of local entrepreneurial ecosystems and encourage them to set up regional offices. City regions would also seek greater representation on UKTI export missions.



CITY AS CONNECTOR

How does the city facilitate physical and digital connectivity?

The Northern Powerhouse's performance as a digital connector falls below that of both North American and European peers. Access to super-fast broadband through fibre-optic cable is inconsistent within city regions, with central areas often lacking good connectivity.

While most cities are investing in expanding public Wi-Fi networks on the street, public transport and in public buildings, coverage is still patchy and several cities impose usage limits that fall short of global best practice.

In terms of physical connectivity, cities are investing in more efficient and convenient travel, but overall public transport provision lags behind many international peers. Through devolution, however, city regions are gaining control over local transportation planning and budgets and have begun designing or rolling-out integrated, smart-ticketing systems. Most cities and city regions have also developed comprehensive strategies for increasing cycling through infrastructure improvements and public awareness campaigns.

RECOMMENDATION 10: Establish city-wide IoT platforms to stimulate digital infrastructure innovation

With more digital infrastructure investments on the horizon through recently negotiated Growth Plans, city regions should be considering city-wide common IoT platforms as a stimulus for wider

digital infrastructure innovation. This could be complemented by gigabit connections, include fibre to the home, and preparing the ground for 5G.

RECOMMENDATION 11: Increase transportation options with bike-sharing and citizen engagement

Good transport and infrastructure helps to circulate new ideas and is a key enabler of growth of the digital economy.²³ City regions in the Northern Powerhouse are investing in high quality cycling infrastructure to improve quick and efficient movement of people, with the goal of converting 10 per cent of trips or more to cycling journeys in

the near future.²⁴ Cities can further promote cycling ridership by partnering with business to introduce or improve bike-sharing schemes (as Liverpool is now doing, by launching a sponsorship campaign for its popular Citybike network)²⁵ as well as by hosting citizen hack events to identify and overcome barriers to cycling.



CITY AS STRATEGIST

Has the city set a clear direction and built the internal capacity required to support innovation?

The Northern Powerhouse city regions are demonstrating promising leadership acumen and capacity with regard to innovation and entrepreneurship, but are still positioned slightly behind European peers and still trail North American cities significantly (see Figures 6 and 7).

While strong and enthusiastic leaders are supporting forward-thinking initiatives in cities and city regions across the Northern Powerhouse, Leeds City Council is the only one with a dedicated Chief Digital Officer (CDO).²⁶ Unlike Chief Innovation Officers or other similar roles, the emerging role of CDO is more outwardly focused, with responsibility for joining up digital skills, expertise, and resources across sectors to deliver innovation outcomes city-wide. At a time of decreased public sector funding and the vast expansion of digital tools, this makes the CDO an especially important role.

“We need to think about things differently – what do citizens want? What does the city need? – and then get the tech sector to deliver.”

Simon Ho

Senior Innovation Officer, Transport for Greater Manchester

The Northern Powerhouse’s lower performance as Strategist is also explained by the lack of robust, public-facing, and up-to-date digital or smart city strategies, at the council or city region level. Some interviewees underscored the difficulty of developing overarching strategies in particular at the city region level, given the highly fragmented nature of local organisations and differing levels of capacity among councils, as well as the rapidly changing pace of technology. Going forward, it will be incumbent on Combined Authorities to address these complex challenges.

RECOMMENDATION 12: Formalise CDO and/or CIO roles in Combined Authorities

As the Combined Authorities take shape and formalise devolution and city deals, they should look to formalise Chief Innovation Officer and/or Chief Digital Officer roles, ensuring that high

level focus on the use of digital and innovative technologies to reshape how services are designed and delivered, and how the city region engages with the entrepreneurial community.

RECOMMENDATION 13: Jointly produce adaptable digital products for city regions

Technology delivers value through scale. Data delivers value through being shared. Too often, the fragmented nature of UK public services limits the benefits both can bring. A comprehensive approach to digital product strategy should therefore be considered for entire city regions to enable the latest digital tools to deliver their full potential. A digital product strategy at the city region level would

provide an overarching plan and principles, and benefit from shared resources and capacity. Key actors across combined authorities at a pan-region level should come together to prototype minimum viable products in response to a challenge they are currently facing, and share the IP from the resulting product.



CITY AS DIGITAL GOVERNOR

How does the city use digital channels to foster high-quality, low-friction engagement with citizens?

Cities in the Northern Powerhouse perform better as Digital Governors than Strategists, thanks to good online service provision delivered by local councils.

Across the city regions, similar digital transactions allow local residents and businesses to easily pay council taxes and business rates and report maintenance or service issues, lowering the administrative burden on both the city and service users.

As Combined Authorities evolve and others take shape, there exists an opportunity to rationalise and digitise even more services.

Despite demonstrating growing competency in online services, there is little evidence of wide-spread digital citizen engagement to shape policy making and improve the business of local government in the Northern Powerhouse.

Most city regions also have limited capacity to collect and analyse real-time data, though this is an area of growing focus and investment. For example, Leeds City Council has developed a city dashboard that updates users on parking availability, city notices and weather on one easy-to-read page, while Newcastle City Council is finalising a smart traffic light system.

RECOMMENDATION 14: Use digital technologies to engage citizens in decision making and problem solving

Leading cities are leveraging wide-spread digital communication technologies to involve and empower citizens on local issues. City regions should look to examples like Paris' 'Madame Mayor I have an Idea', a participatory budgeting scheme (supported by a simple online platform) that allocates €500 million to projects proposed by local residents, to develop bespoke citizen engagement initiatives.

Furthermore, Combined Authorities are gaining powers over new service delivery areas such as health and social care, and the expansion of IoT capabilities, presenting an opportunity to re-design services around the citizen, and shift their relationship with, and perception by citizens. Working across the city regions could further support a 'build once, use many times' mentality to service redesign.



CITY AS DATAVORE

How does the city use data to optimise services and provide the raw material for innovation?

The Northern Powerhouse boasts some very strong data initiatives. The Leeds Data Mill, an open data portal owned and managed by the city council (see Section 3.6), and Greater Manchester’s GM-Connect data sharing programme (see Section 3.1) have set a high bar, while Newcastle and Sheffield are not far behind. Yet despite areas of excellent practice, the region as a whole still underperforms both its North American and European peers.

Importantly, Leeds, Manchester, Sheffield and Newcastle have demonstrated both a willingness to publish open data covering a range of sectors, as well as initiatives in partnering with businesses and the public that has led to new products and valuable insights. Liverpool and Hull, too, are taking steps toward greater transparency, but publish comparatively less open data.

Overall however, few places in the Northern Powerhouse or the UK are capable of joining up information across public organisations to drive better policy-making. Such capabilities will be crucial to achieving public service reform, boosting local growth and demonstrating impact back to central government, especially in the context of devolution.

RECOMMENDATION 15: Establish Offices of Data Analytics

Following Greater Manchester’s lead, city regions should put in place Offices of Data Analytics (ODAs). The ODAs would integrate data across councils (and the Northern Powerhouse), accelerate collaboration on data-sharing regulations and standards, develop a platform for citizens and businesses to share, buy and sell data with the city, and work with central government to devolve datasets held at a central level (e.g. business growth

data, blue badge data). Inspired by New York’s successful Mayor’s Office of Data Analytics (MODA). The MODA method enables cities to source data from multiple public and private sector bodies to reform public services and boost economic growth and innovation. New York’s MODA sits in the Mayor’s office and is staffed by nine team members, tasked with developing actionable insights on data held by 40 city organisations.

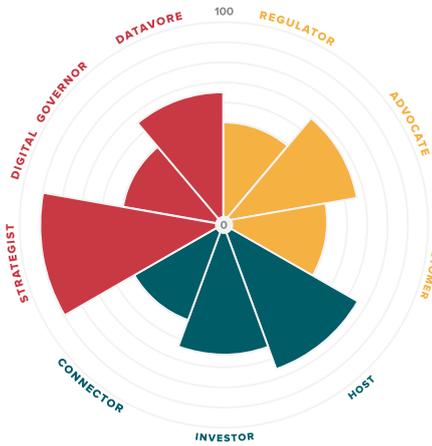
RECOMMENDATION 16: Make all city procurement contracts ‘Open by Default’

Introducing open design principles and standards, e.g. open APIs, service-level agreements that require regular updates, data quality criteria, etc., to all new public procurement contracts or partnerships would allow cities to more easily generate, combine, compare and analyse data

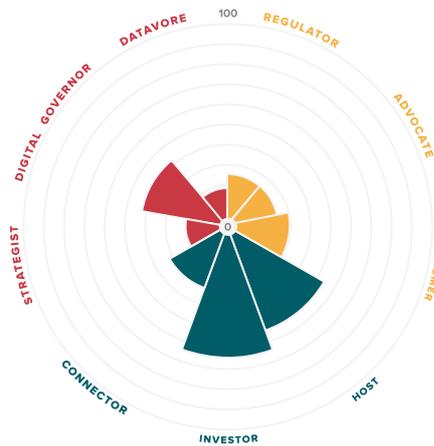
from multiple sources, leading to better decision making. Cities should promote greater trust among businesses and residents to engage with open data through policies that emphasise transparency, clarity and ease of access.

Section three: ANALYSIS OF THE CITY REGIONS

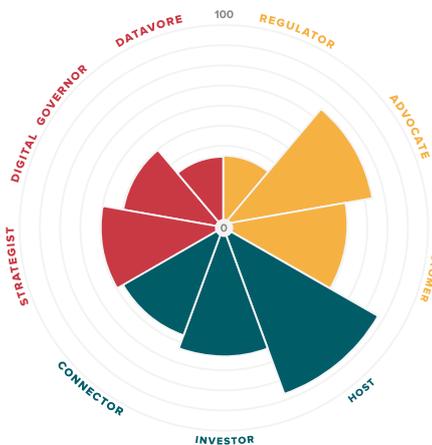
Greater Manchester Combined Authority



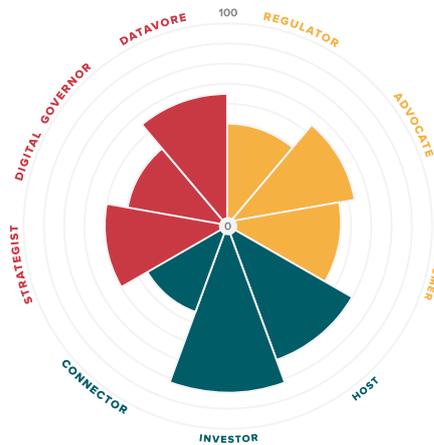
Hull City Region



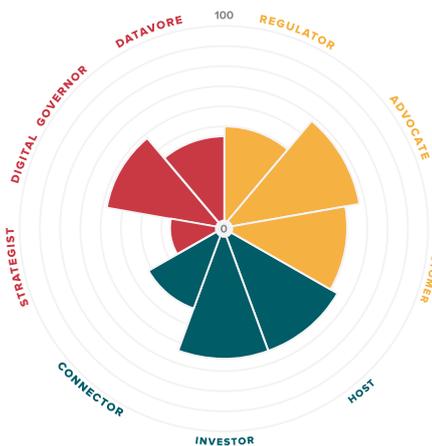
Liverpool City Region Combined Authority



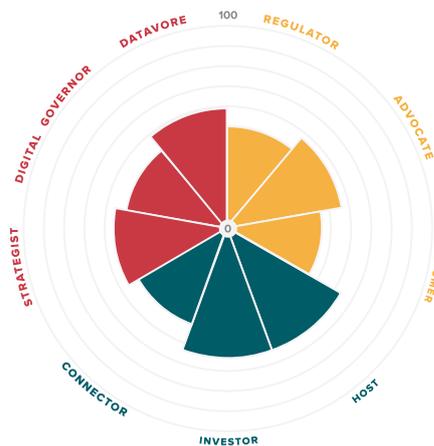
North East Combined Authority



Sheffield City Region Combined Authority



West Yorkshire Combined Authority



3.1 GREATER MANCHESTER COMBINED AUTHORITY

Entrepreneurs and start-ups in Greater Manchester are thriving in an increasingly sophisticated and supportive innovation ecosystem. Between 2010 and 2014, the city region experienced the greatest increase in digital sector jobs and the highest digital GVA growth, outside of London.²⁷

More incubator spaces and accelerator programmes are available in Greater Manchester than in any other city region in the Northern Powerhouse, making it one of the strongest **Host** cities. In the last year alone, leading accelerators including Entrepreneurial Spark and Ignite have been attracted to the region by its growing community of innovators.

A key node in the region's innovation ecosystem is Media City UK in Salford, the city region's digital and creative nerve centre. A mixed-used development with space for living, entertainment and business, Media City UK houses corporate giants, including the BBC and dock10, alongside start-ups inside the Greenhouse, a digital SME hub and co-working space. Nearby, the Landing offers more opportunity for collaboration and experimentation through its unique testing centres for games and interactive technologies, whilst the Sharp Project focusses on digital content and creative entrepreneurs.

“Technology can do anything, there's already good tech that's available. The key challenge is actually uptake and use.”

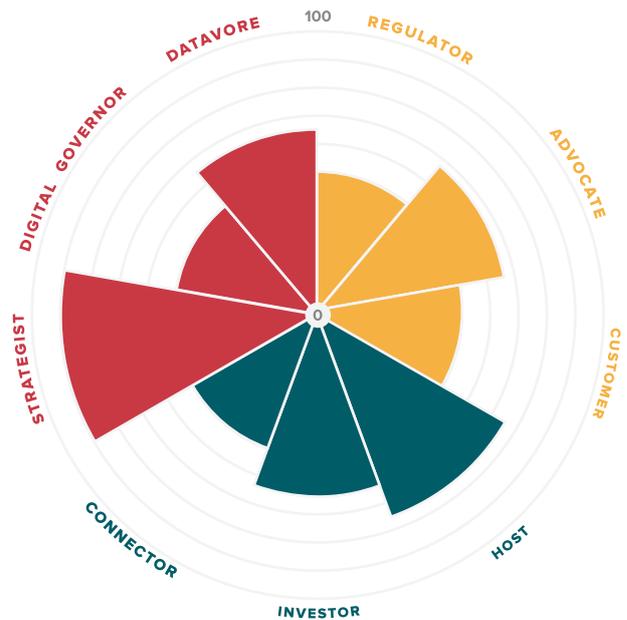
Simon Ho

Senior Innovation Officer, Transport for Greater Manchester

Cutting-edge digital and smart city initiatives are also rooting Greater Manchester as a leading **Datavore** and **Strategist**.

The upcoming launch of a regional data sharing and interoperability strategy, GM-Connect, will allow public agencies to easily access data held by others in the city region. When fully implemented, GM-Connect will provide authorities with better

Figure 8: Greater Manchester Combined Authority's CITIE profile



understanding of needs and drivers of demand, allowing for more efficient use of resources and improved service outcomes, as well as a tool to evaluate the impact of public service reform. Through a citizen-facing portal, GM-Connect will also empower residents to easily manage their own information and opt-out of data sharing if they wish.

With new technologies and mobility providers rapidly disrupting traditional modes of transportation, Greater Manchester has also embraced an open-source approach for exploring the future of Mobility as a Service (MaaS). Through TravelSpirit, the regional MaaS open-source platform, Transport for Greater Manchester is partnering with a number of public and private sector organisations (including Digital GM, the city region's network of digital innovators) to freely share knowledge and prevent the risk of vendor lock-in, which limits responsiveness to technological innovations and societal changes.

Overall, Greater Manchester's strong performance can be attributed to a long history of cooperation among its ten local councils, particularly in the area of economic development.²⁸ This cooperation has shaped the city region into a highly capable **Advocate** for the local economy.

Priority focus areas	
 <h3>INVESTOR</h3> <p>The GMCA and Manchester City Council have a number of grants and loans for businesses, but none specifically designed for start-ups or early-stage SMEs. A portion of these funds could be re-apportioned for start-ups and early-stage SMEs. Around 46 per cent of businesses cite limited access to finance as a key challenge.²⁹</p> <p>International best practice</p> <p>A new Vancouver Entrepreneur Fund raises private investment to support emerging start-ups, giving the city’s tech sector a boost as it competes for talent and investment. The Vancouver Foundation also funds the Greenest City Fund with \$2 million to support ideas generated by the community.</p>	 <h3>DIGITAL GOVERNOR</h3> <p>The city region lacks a platform for digital citizen engagement that allows for meaningful participation in key policy discussions.</p> <p>With more powers being handed from Whitehall to the GMCA than anywhere else, the city region should ensure that citizens have the opportunity to have a real say in Greater Manchester’s rapidly evolving future.</p> <p>International best practice</p> <p>Active Citizen is Moscow’s citizen engagement app that asks Muscovites their opinion on city issues, such as transport, healthcare and education on a weekly basis. Participation is incentivised through a points system, where citizens receive points when they vote in a poll or e-referendum. Points can then be exchanged for city services like rent-a-bike, parking spaces or theatre tickets.</p>

When compared to the other cities analysed against the CITIE framework, the Greater Manchester Combined Authority’s performance most closely to that of compares to Boston (see Figure 9) and Tel Aviv (see Figure 10).

Figure 9: Boston CITIE profile

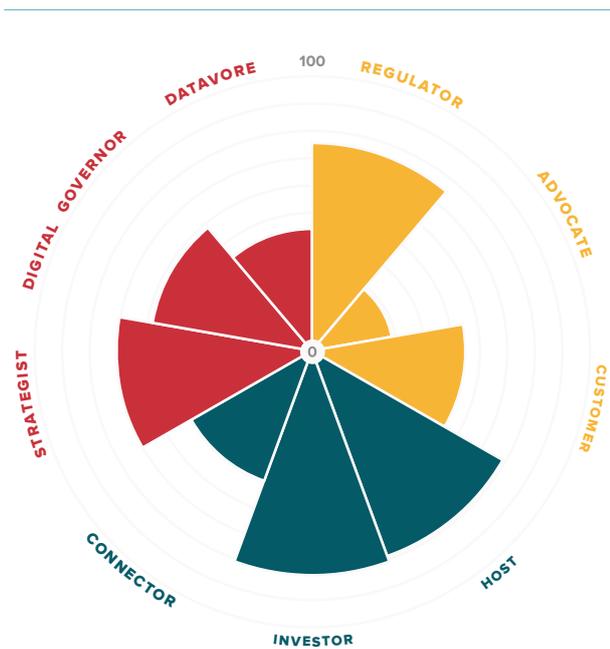
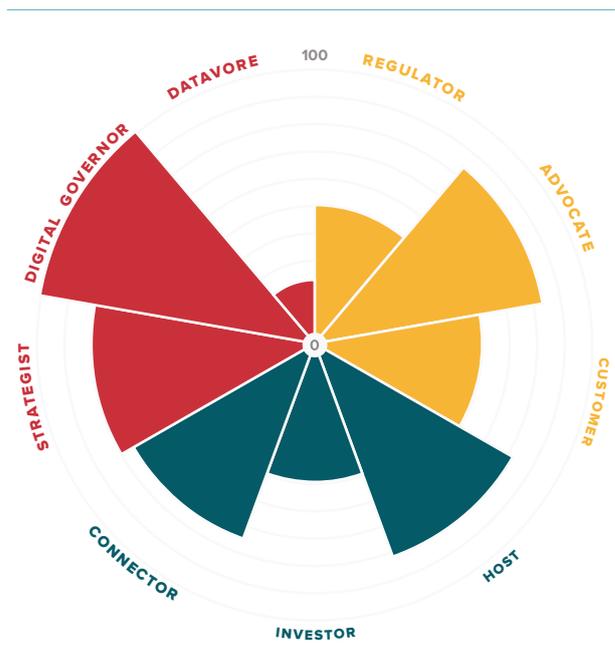


Figure 10: Tel Aviv CITIE profile



3.2 HULL CITY REGION

As the smallest city region by population in this analysis, Hull faces considerable competition from other parts of the Northern Powerhouse and the rest of the UK for talent, ideas and capital. Unlike other Northern Powerhouse city regions in this report, it has yet to benefit from negotiating devolved powers or merging with other local councils to form a Combined Authority.

However, despite its scale and close proximity to larger cities, it has managed to achieve double digit growth of 24 per cent in the number of digital businesses between 2010 and 2014.³⁰

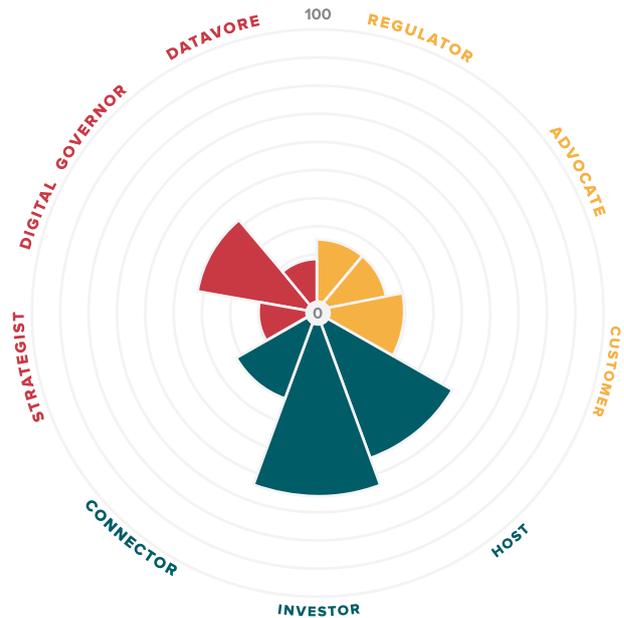
Hull demonstrates strength as a **Host** to start-ups and SMEs, particularly through its new Centre for Digital Innovation (C4Di), launched in 2015, which serves as the focal point for the city region's tech sector.³¹ C4Di houses established firms and start-ups and provides co-working space, incubation programmes and seed funding. With a clear vision and investment from the city region and the Humber LEP, C4Di could become the core of an innovation district that would sharpen the region's strengths in e-commerce and data management and analytics, as well as attract more capital and investment to Hull.

“ We’ve got the UK’s best connected city – a third of all the fibre to the premises in the UK is in Hull – businesses based here have a connection speed that enables them to do business much faster and scale much quicker. ”

John Connolley
Co-founder, C4Di

Hull has also demonstrated strength as an **Investor**, particularly in younger talent. While the City Council contributes substantial financial support

Figure 11: Hull City Region's CITIE profile



through the Acorn fund (up to £25,000 for start-ups) to entrepreneurs of any age,³² it also delivers comprehensive support to those under 21 through the John Cracknell Youth Enterprise Bank. Through the scheme, young entrepreneurs in the Hull City Region are eligible for grants of up to £1,000, have access to a hot-desking facility and meeting space, and receive business mentoring. The scheme has already seen 350 young entrepreneurs through the programme and has achieved an impressive 74 per cent business survival rate.³³

In the coming year the Hull City Region will also have occasion to become a stronger **Advocate** for local talent, as the city transforms into the UK's City of Culture. Over the course of 2017, Hull will be putting on a range of arts and culture events, with a strong focus on digital gaming, content creation and the wider creative sector. The festival will grant Hull's digital sector sustained exposure, and the city council and Humber LEP should ensure that start-ups and SMEs are a core part of the festival programme to take advantage of this international exposure.

Priority focus areas	
<p> STRATEGIST</p> <p>Hull should use its status as the 2017 UK City of Culture to catalyse support for a dedicated innovation team and build a shared vision for the Hull City Region as a digital innovation leader. Without an innovation champion or strategy, there is a lack of clear direction.</p> <p>International best practice Chicago's Innovation Delivery Team is one of several city teams funded by Bloomberg Philanthropies, working on initiatives to improve city services. In 2011, Chicago appointed a Chief Technology Officer, and The City of Chicago Technology Plan sets out an inspiring vision of change for the city.</p>	<p> DATAVORE</p> <p>Hull's Humber LEP should take the co-ordinating role across the four councils it currently covers, and commit to building up a combined open data repository.</p> <p>Currently the city only publishes spending data. By collaborating with entrepreneurs and neighbouring councils, it could deliver new insights to improve public service delivery.</p> <p>International best practice London's Datastore is a free open-data sharing portal that anyone can access. It currently hosts 657 datasets on topics such as Arts & Culture, Sport, Transparency and Young People. The London City Data Strategy launched in 2016 sets out London's vision to develop this further into an Open Data Marketplace where people can buy and sell data.</p>

When compared to the other cities analysed against the CITIE framework, Hull City Region's performance most closely to that of compares to Brussels (see Figure 12) and São Paulo (see Figure 13).

Figure 12: Brussels CITIE profile

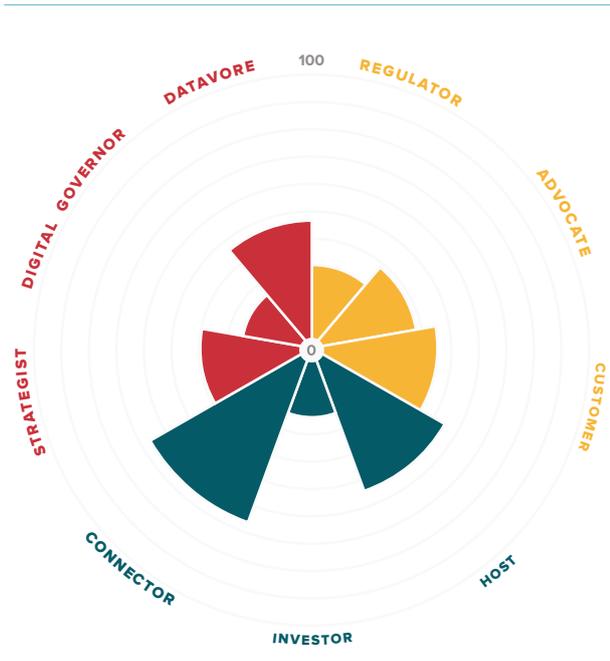
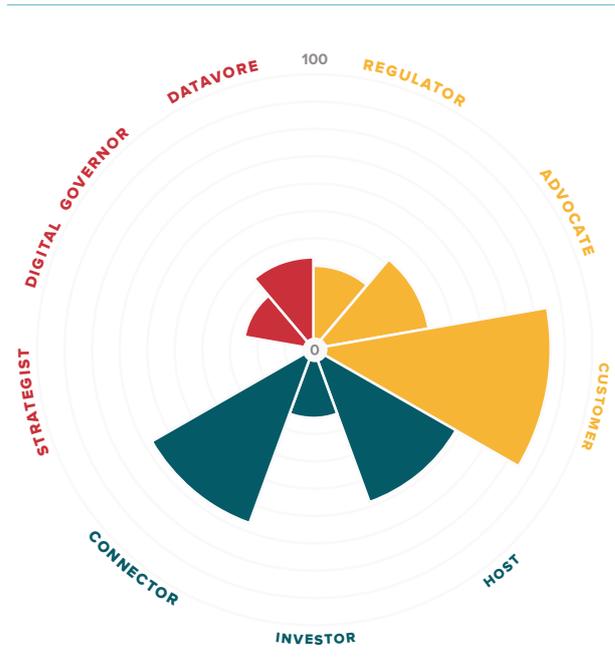


Figure 13: São Paulo CITIE profile



3.3 LIVERPOOL CITY REGION COMBINED AUTHORITY

Liverpool's digital and physical spaces dedicated to networking, matchmaking and collaboration establish the city region as the top Host to start-ups and early stage SMEs.

On the digital side, Liverpool's Kin Network provides an online platform through which digital and creative practitioners in the city region can uniquely showcase their skill-set, connect via an open directory, share resources, and post job opportunities. Liverpool Vision, the city's economic development agency, also supports the Baltic Creative CIC (Community Interest Company), a space in the city's Baltic Triangle innovation district, which offers managed workspaces, event space, and workshops at affordable rates. As a CIC, Baltic Creative is also able to reinvest surpluses back into meeting the needs of its entrepreneurial community, creating a virtuous growth cycle.

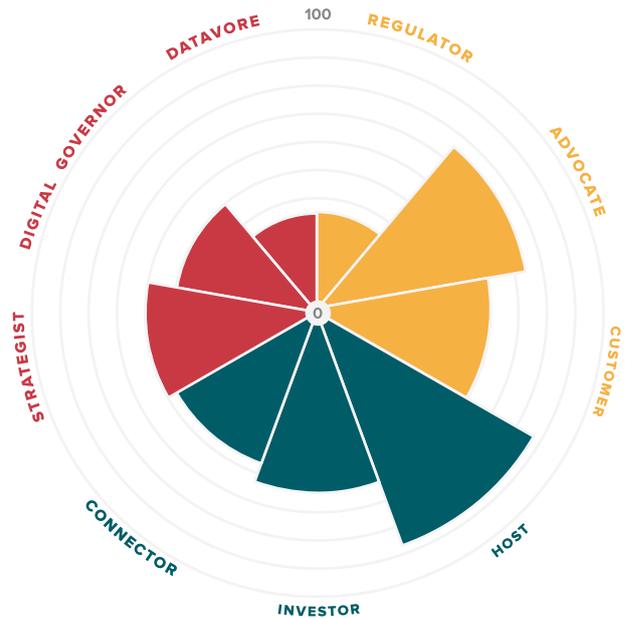
Liverpool's commitment to entrepreneurs is further demonstrated through the city's 'It's Liverpool' brand and marketing strategy, which showcases local start-up talent, a vibrant support network and other reasons why investing or locating in Liverpool is good for innovators. Explicitly branding the city as a creative hub for entrepreneurs to the outside world (an effective but under-developed approach in the North) boosts the city region's performance as an **Advocate**.

“A key priority for Liverpool is connecting our digital and big data assets to fast growing industries. We're pushing the creation of data analytics capability to align with companies and start-ups in the city region's vibrant digital cluster.”

Jonathan Hague

Chair, Liverpool City Region LEP Innovation Board.

Figure 14: Liverpool City Region Combined Authority's CITIE profile



The city region also stands out as a good **Customer** to SMEs. The city's procurement policy includes targets to increase SME bids by 10 per cent, and the share of contracts won by SMEs by 5 per cent, on an annual basis. At the same time the LEP's Enterprise Strategy³⁴ aims to involve 500 more SMEs in local supply chains by 2020 and promises 'extensive support' to help small business access and prepare to bid on public sector tenders.

Finally, the Liverpool City Region LEP is investing in assets that will augment the region's role as a **Digital Governor** and capacity to develop smart technology and infrastructure. The recently launched high-tech incubator, Sensor City, in the city's Enterprise Zone and in collaboration with two local universities, is an example of a crucial resource that will contribute to growing the city's existing specialism in IoT and connected devices. The launch of the LEP-backed incubator additionally highlights the strong relationships between two of Liverpool's key knowledge assets – University of Liverpool and Liverpool John Moores University – and the city region.

Priority focus areas	
 <p>REGULATOR</p> <p>Though regulatory harmonisation will not always be appropriate, the Combined Authority should investigate where more alignment is necessary to support innovation. For instance, while surrounding councils have welcomed Uber, Liverpool City Council has delayed private hire licenses. This sends conflicting signals and creates uncertainty in the local market that discourages innovators.</p> <p>International best practice</p> <p>In 2014, Seattle approved updated regulations to allow Uber, Lyft and other smartphone app-based transport services to operate legally. The result of more than a year’s debate between the city, taxi companies and ride-share services, the regulation allows a new industry to thrive while maintaining high levels of public safety.</p>	 <p>DATAVORE</p> <p>Liverpool City Council publishes less open data than other central areas in the Northern Powerhouse. The data is also disseminated through several channels instead of a single platform. The emergence of the Combined Authority presents an opportunity for the Liverpool City Region to open up more data on a single platform, supported by unified data quality and openness standards, and further engage with Liverpool’s community of innovators to tackle local issues.</p> <p>International best practice</p> <p>Via the Seoul Innovation Bureau, Seoul is promoting a Sharing City where citizens can use social media and an online platform to engage with the development of their public services. With a Chief Information Officer in place since 1999, Seoul has taken the lead in establishing a sophisticated e-governance information system infrastructure.</p>

When compared to the other cities analysed against the CITIE framework, Liverpool City Region Combined Authority’s performance most closely to that of compares to Moscow (see Figure 15) and Dubai (see Figure 16).

Figure 15: Moscow CITIE profile

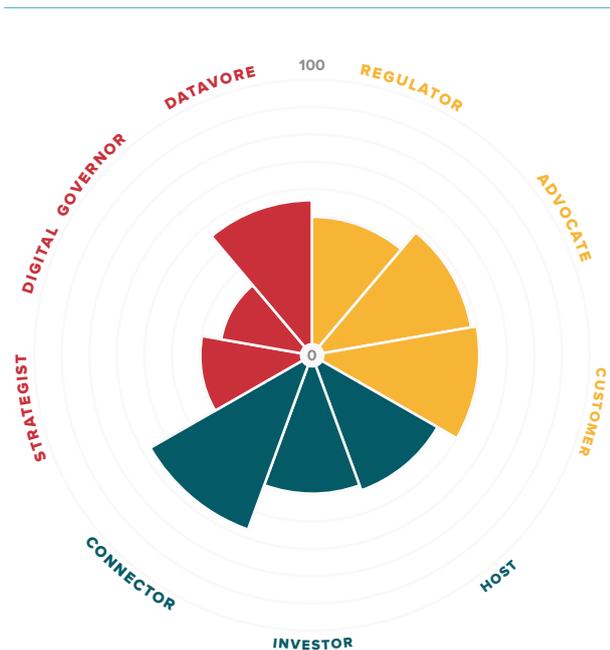
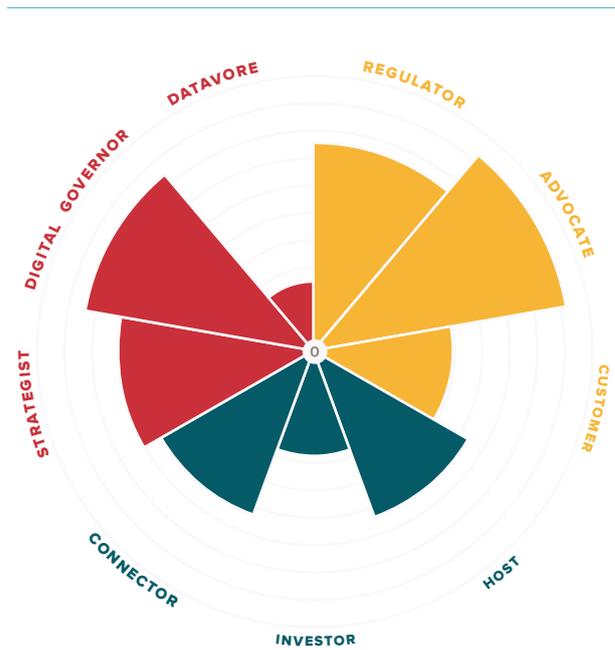


Figure 16: Dubai CITIE profile



3.4 NORTH EAST COMBINED AUTHORITY

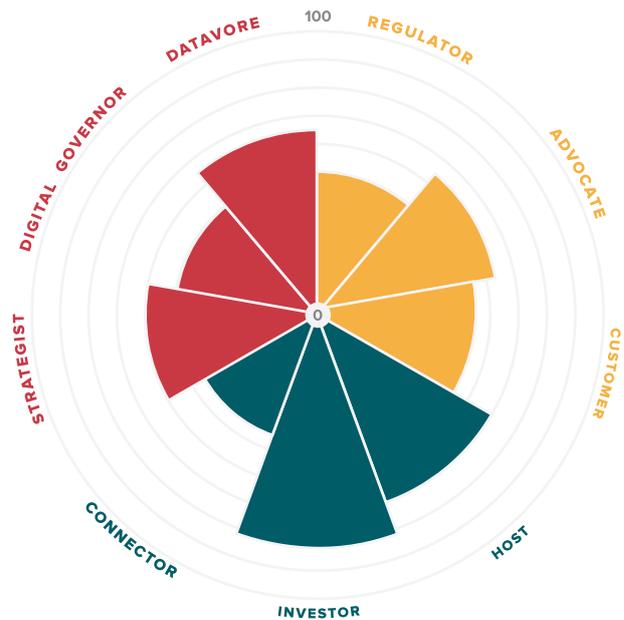
Thanks to a leading skill-building initiative and dedicated funding for start-ups, the North East emerges as one of the strongest Investors in the CITIE analysis.

In early 2015, the city region launched two IT Apprentice Hubs, led by a local tech employer network, Dynamo, and with the support of Newcastle and Sunderland City Councils. The Hub, which aims to close the IT skills gap in the city region and is a first of its kind in the UK, is delivered over an intensive 15-week 'Rising Stars' training, and culminates in a year-long apprenticeship for successful participants.³⁵ In addition, through the North East LEP's JEREMIE investment fund, ambitious start-ups and SMEs have a local source of substantial funding – £17 million for the newest round of investment – to grow and innovate.³⁶

Entrepreneurs in the North East are equally supported through numerous co-working spaces as well as several high quality accelerator programmes and incubation spaces. Ignite, an angel-led fund with global operations dedicated to encouraging tech start-ups, has its roots in Newcastle. Newcastle City Council also supports the Cloud Innovation Centre at Newcastle University, where businesses can improve technical capacity and accelerate growth. Nearby, Sunderland Software City and Durham County's North East Technology Park provide sector-specific supports, training and access to Catapult Centres. Despite these assets, interviewees still noted the need for more accelerator and incubator spaces to meet the rising entrepreneurial demand in the region.

With funding negotiated through its devolution agreement, the city region is also investing in its capacity as a **Datavore** via the recently opened Smart Data Centre. The centre will serve as a collaborative space where partners from the private, public and academic sectors will tackle societal and industry challenges through big data. The Centre will be located in Newcastle's emerging Innovation District, Science Central, a 24 acre mixed-use development with sustainability and scientific advancement at its core.

Figure 17: North East Combined Authority's CITIE profile



“Data is never smart. It’s how you extract and use the data, how you capture it, which makes it smart.”

Hans Moller

Director of Innovation, North East LEP

Finally, the North East is demonstrating significant promise in the **Customer** role, as the LEP prepares to launch its Grand Challenge initiative later this year. A public procurement based competition, the Grand Challenge is designed to promote the region's smart specialisation agenda and competitiveness in key sectors.³⁷

Priority focus areas	
<p> ADVOCATE</p> <p>The city region is taking significant steps to transform itself, but should be communicating its leadership in these areas more effectively.</p> <p>The North East’s rapid tech growth, smart city investments, emerging innovation district, and other exciting initiatives should be broadcast loudly to support the flow of talent and investment into the region.</p> <p>International best practice Innovate Los Angeles (in LA) is a not-for-profit organisation set up to promote and accelerate the innovation economy and spur job creation. Comprised of tech and venture capital leaders, entrepreneurs and universities, Innovate Los Angeles promotes the county as a global innovation and entrepreneurial hub, with Los Angeles Innovation Week celebrating the burgeoning sector.</p>	<p> CONNECTOR</p> <p>The North East has among the lowest cycling levels in the UK, despite most journeys being less than five miles.³⁸ Future plans emphasise capital investments for segregated and well- connected routes, but the North East should also engage entrepreneurs and citizens through a programme like Cycle Hack – a 48 hour challenge to identify barriers to cycling and prototype solutions – to find how less costly, innovative interventions could further increase ridership.</p> <p>International best practice Copenhagen has implemented a state-of-the-art bike share system with electric bikes and GPS navigation integrated on to the handlebars. Users can book a bike online, lock it and return to their bike without needing to return it to a docking station. Whilst coverage is currently limited with only 25 stations, the city is looking to expand the scheme.</p>

When compared to the other cities analysed against the CITIE framework, the North East Combined Authority’s performance most closely to that of compares to Oslo (see Figure 18) and Seattle (see Figure 19).

Figure 18: Oslo CITIE profile

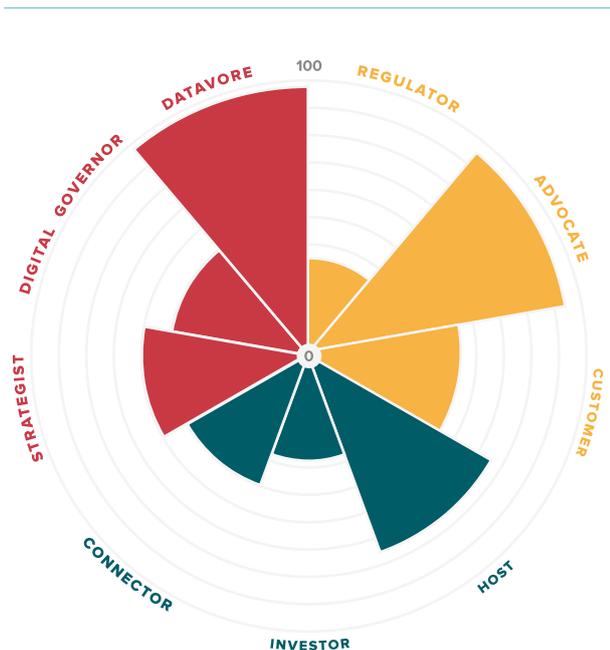
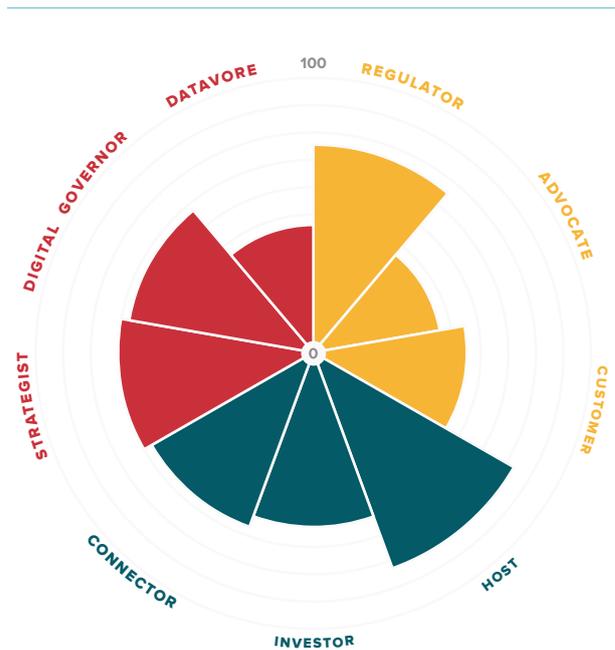


Figure 19: Seattle CITIE profile



3.5 SHEFFIELD CITY REGION COMBINED AUTHORITY

Sheffield City Council's best-practice approach to supporting start-ups and new ideas through the Sheffield Smart Lab positions the city as a leading Customer in the CITIE Northern Powerhouse analysis.

Launched in 2015 (in partnership with Amey and Ferrovial Services), the Lab invited innovators from around the world to submit proposals for tackling one of two local challenges, urban revitalisation or independent ageing. Finalists were then provided with 12 weeks of incubation and acceleration support, intensive mentoring, office space and exposure to potential funders. Later this year, winners will publicly demonstrate their products, including apps that help manage dementia, provide self-guided tours through Sheffield, and encourage people to visit and repopulate underused areas of Sheffield.

“ We have no presumption that [council] has all the answers – the ecosystem has lots of different players, none of those are omniscient or omnipotent. ”

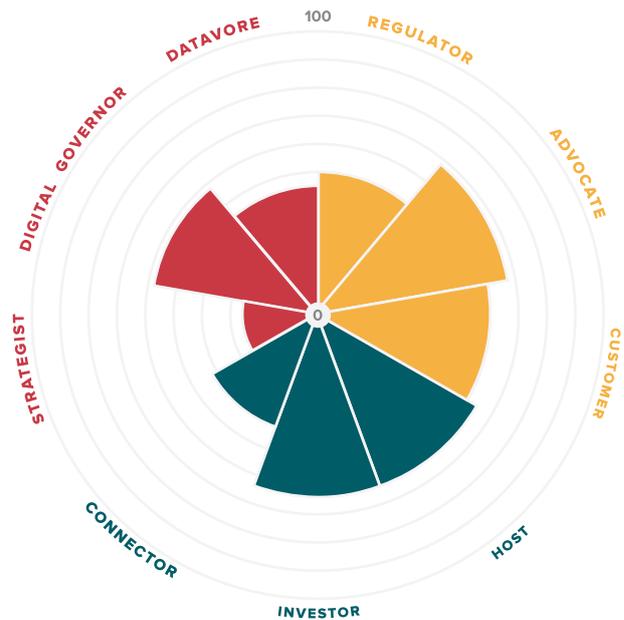
Mark Tuckett

Head of Policy and Improvement, Sheffield City Council

The Lab process has demonstrated its value as a platform for generating new ideas, partnerships and behaviours in the city, and plans for a second phase of Lab challenges are now being explored. These efforts are bringing the city region closer to its goal of adding 6,000 new startups by 2024.

Other initiatives are equally shaping Sheffield into a stronger **Advocate** for the entrepreneur and SME community. For the past five years, Sheffield has hosted the popular MADE entrepreneur festival, which in January 2016 was ranked 4th in the world by Entrepreneur.com.³⁹ The festival brings together small business owners, start-ups, designers and other makers across the city region to explore and inspire a local culture of entrepreneurialism. Entrepreneurs

Figure 20: Sheffield City Region Combined Authority's CITIE profile



in the region will have even more support in the near future, through the LEP's New Business Centre of Excellence, which is setting up to offer bespoke start-up and small business mentoring, incubation, acceleration, and training.

Sheffield also shows strength as a skills **Investor**. Since 2013, a city region initiative supported by the Growth Hub and local universities has helped to link talented graduates to internships with local SMEs, through the RISE programme. Sheffield City Council also supports the Computer Science Ambassadors programme, which currently provides 32 pupils in Year 9 to 11 with working skills in new digital technologies.

“ The real goal is to change culture, so that entrepreneurship is a normal option to consider in the city. ”

John Mothersole

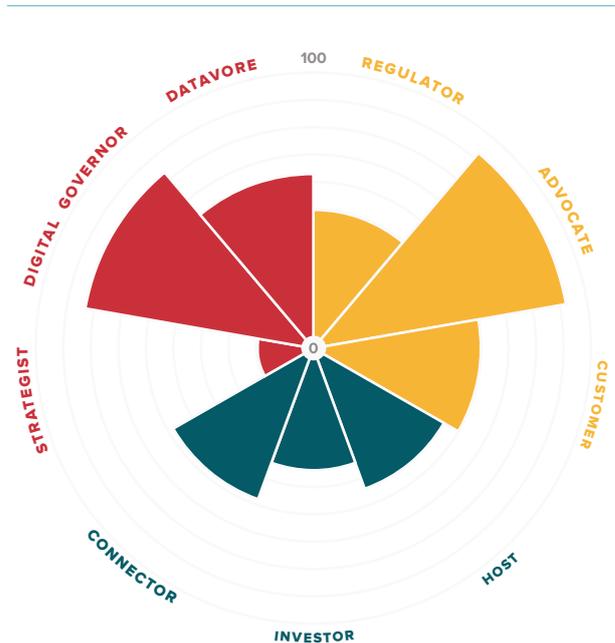
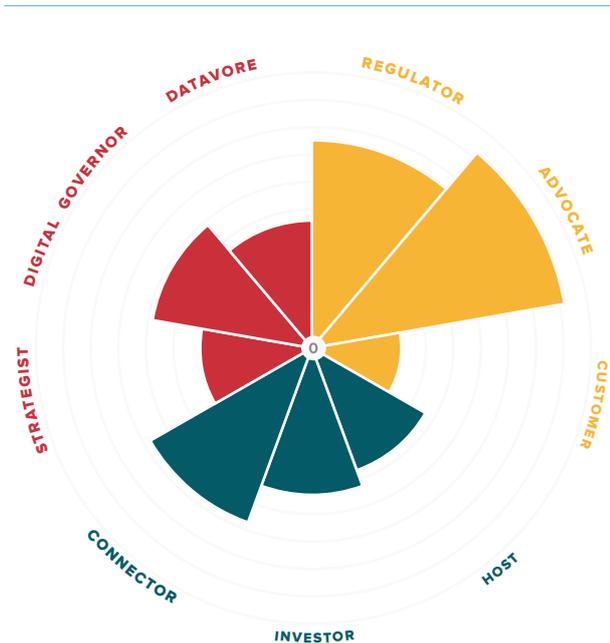
CEO, Sheffield City Council

Priority focus areas	
 <h3>STRATEGIST</h3> <p>Sheffield City Council is in the early stages of developing a Smart City Framework, which it is undertaking through a collaborative partnership with public, industry and non-profit leaders.</p> <p>The city has the will and leadership but lacks a degree of capacity and an over-arching strategy. Best practice from around the globe highlights the need for a well-resourced team and a highly-placed champion to turn transformative smart city ideas into reality.</p> <p>International best practice</p> <p>In March 2014, Amsterdam created the role of Chief Technology Officer. The role is responsible for breaking down silos across the city government, setting overall strategic direction, providing a consistent face to external stakeholders and helping to navigate a complex political landscape. Three factors are critical to its success; Importance of the right leadership structure, the city as a platform for innovation, and community-centred thinking.</p>	 <h3>CONNECTOR</h3> <p>Sheffield's city centre lacks free Wi-Fi in public places, on the street or in public buildings, including libraries. The city region also has one of the slowest broadband speeds in the CITIE Northern Powerhouse analysis.</p> <p>Greater access to free and faster Wi-Fi in the city centre and the city region would increase productivity and also help tackle issues around digital exclusion for lower income households.</p> <p>International best practice</p> <p>The city of Tallinn, Estonia, has been offering free public Wi-Fi to residents and visitors since 2005. Free, unrestricted Wi-Fi is available in about 30 locations, including airports, rail stations, buses, public buildings, parks, beaches, and in major tourist zones. Estonia was one of the first countries to establish access to the internet as a human right.</p>

When compared to the other cities analysed against the CITIE framework, the Sheffield City Regions Combined Authority's performance most closely to Melbourne (see Figure 21) and Los Angeles (see Figure 22).

Figure 21: Melbourne CITIE profile

Figure 22: Los Angeles CITIE profile



3.6 WEST YORKSHIRE COMBINED AUTHORITY

The opening of the Leeds Data Mill, a sophisticated open data portal owned and managed by Leeds council, in 2014 and the Open Data Institute in 2013 have firmly established the city region as an innovator and leader in the Datavore role.

More than 280 datasets are available through the Leeds Data Mill, covering a range of sectors, including air quality, transport, and housing. Through engagement with citizens, the private sector and community organisations, the Data Mill is also generating insights for the public sector and business. For example, live transport data has been used to address ageing and mobility challenges through analogue clocks in GP surgeries that display wait times for buses, with the aim of increasing public transport use among seniors. Businesses have also used historical footfall data combined with web-analytics to develop targeted marketing campaigns and predict shopping traffic with high accuracy.

Underpinning these and other efforts are Leeds City Council's open design principles, which promote common standards for data and open APIs generated by anyone in the city region. The principles are helping to improve interoperability and position the city as an open platform, where many components and players can be easily engaged in problem-solving.

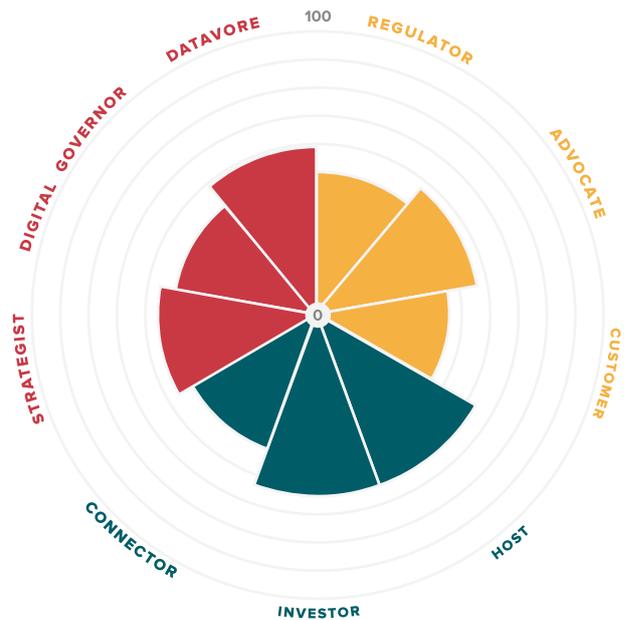
West Yorkshire is also shaping itself into a strong **Advocate** for the local entrepreneurial community. The city region's LEP has developed a unique

“There’s a market place being created around the city where lots of people are developing public sector interventions to local problems and, hopefully, solutions that can be scaled and applied to other places as well.”

Dylan Roberts

Chief Digital Officer, Leeds City Council

Figure 23: West Yorkshire Combined Authority's CITIE profile



programmatic focus on small business, as evidenced by its 'Start and Grow' programme, which includes intensive guidance, business plan development support, and funding application assistance for new start-ups. The LEP also provides grants of up to £50,000 to local SMEs (or those planning to relocate to the city region), making it easier for business to access funding without needing to apply for loans. Furthermore, in Bradford, the local council runs the Bradford Kickstart program, which aims to launch 1,000 small business within ten years through various business services and supports.

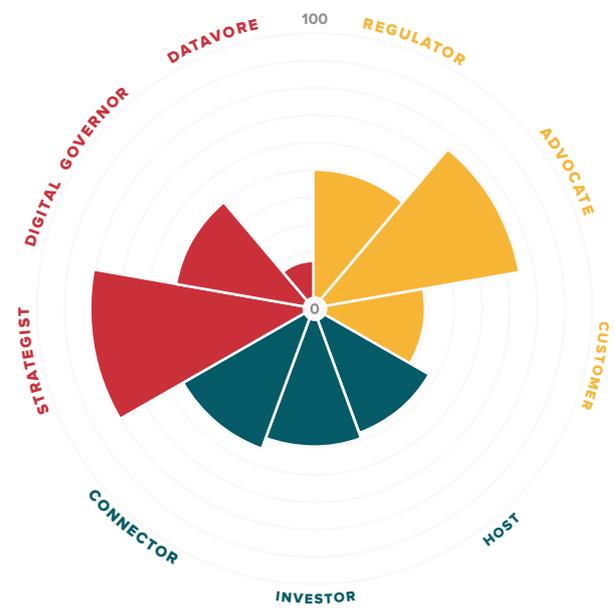
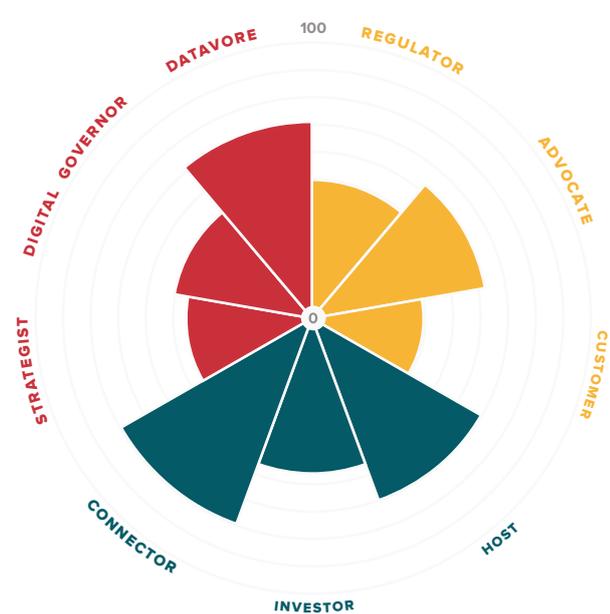
West Yorkshire is also making progress on becoming a better digital **Connector**. Leeds and surrounding councils are rolling out free Wi-Fi in more than 100 public buildings and are working with aql (telecommunications service provider) to expand the network of free Wi-Fi to bring access to poorly connected and lower-income neighbourhoods. Furthermore, the city region LEP is supporting a partnership between Leeds and Bradford councils to implement free Wi-Fi on strategic public transport between the cities. This now includes more than 20 trains and buses, with a reach of more than 600,000 unique users.⁴⁰

Priority focus areas	
<p> CUSTOMER</p> <p>The West Yorkshire Combined Authority could use its convening position to establish clear targets and strategies for increasing access to procurement and purchasing from local SMEs.</p> <p>While there is a focus on small business in the region, it lacks clear policies to promote greater access to public tendering opportunities for SMEs.</p> <p>International best practice</p> <p>When tendering for public sector contracts, companies in São Paulo only need to display their tax compliance at the time of bidding to pre-qualify for the contract. Furthermore, SMEs are given preferential treatment as long as their bid price is no more than 10 per cent higher than non-SME bidders.</p>	<p> HOST</p> <p>The expanding community of entrepreneurs and innovators in the city region should be supported by a match-making platform similar to Liverpool's Kin network, to increase connections and exchange of ideas across the city region's rich innovation ecosystem.</p> <p>International best practice</p> <p>Tel Aviv's ILVenture is an open platform for start-ups, investors, accelerators and others in the city interested in innovation. It allows users to post jobs, services and programmes, and search for investors and potential hires.</p>

When compared to the other cities analysed against the CITIE framework, West Yorkshire Combined Authority's performance most closely to that of compares to Copenhagen (see Figure 24) and Hong Kong (see Figure 25).

Figure 24: Copenhagen CITIE profile

Figure 25: Hong Kong CITIE profile



APPENDIX 1

The **CITIE** framework

The CITIE framework provides a resource for city policymakers who want to develop policy to support innovation and entrepreneurship.

It was developed by combining extensive consultation with city government leaders, policy experts, venture capitalists and entrepreneurs with detailed research into the state of the art in policy from cities around the world.

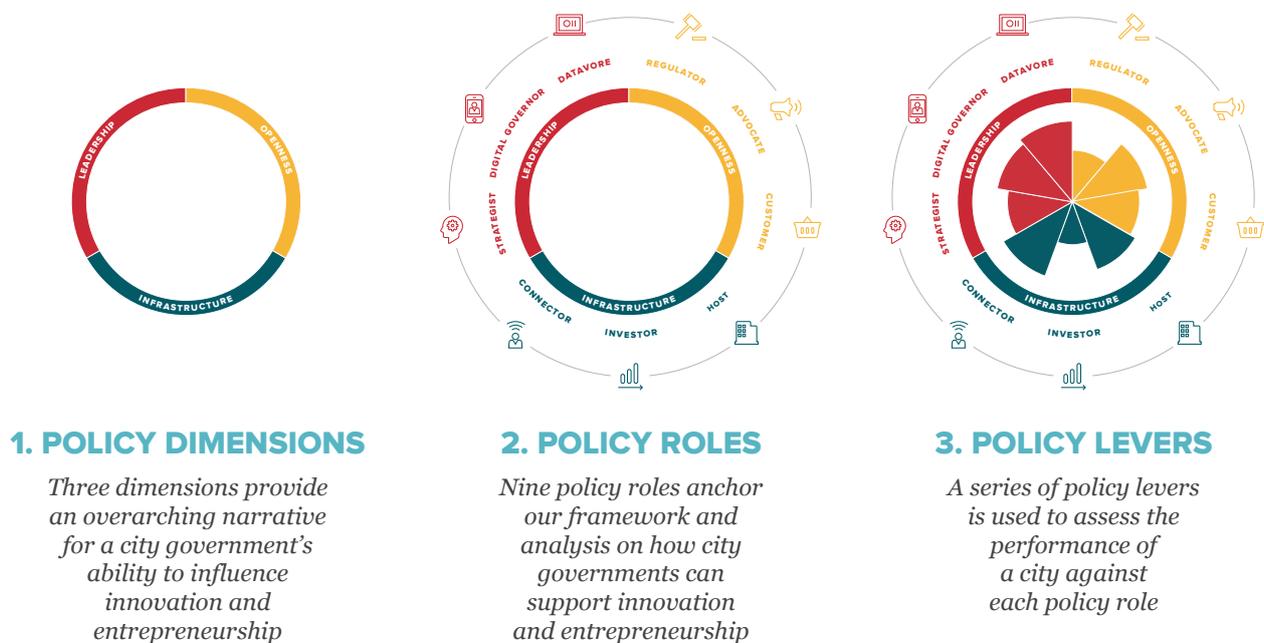
It comprises nine roles that cities need to perform well if they want to provide the optimal conditions for innovation and entrepreneurship. These roles are set out in Figure 2.

We've tested how well over 40 leading city governments perform each of these roles by measuring a series of policy levers. These levers were chosen to represent best practice from around the world. In many cases, they are measures that can be quick to implement, allowing policymakers opportunities for prompt action.

Taken collectively, these three levels of analysis comprise the CITIE framework. Figure 26 shows how they build on top of each other.

We assessed how well the Northern Powerhouse city regions played each of these nine roles by measuring across the range of policy levers, allowing us to compare their performances to our dataset of over 40 cities that were analysed between 2015-16.

Figure 24: Constructing the CITIE framework



APPENDIX 2

*A note on the **CITIE** methodology*

The six city regions analysed in this report are based on the Centre for Cities Northern Powerhouse factsheet published in June 2015. These six city regions are defined as the Greater Manchester Combined Authority, Hull City Region, Liverpool City Region Combined Authority, North East Combined Authority, Sheffield City Region Combined Authority and the West Yorkshire Combined Authority.

While our research and analysis takes into account activity across each city region, for consistency and comparability with previous CITIE analysis, we applied the CITIE diagnostic tool only to central councils within each region (i.e. Bradford, Hull, Leeds, Liverpool, Manchester, Newcastle, Sheffield, and Sunderland).

In addition, to reflect each region's different stage in the devolution process, we looked at how regional

bodies, LEPs and Combined Authorities, contribute to local performance across CITIE's nine policy roles. Therefore, the CITIE profiles that have been developed for this report capture policies and activity within the six city council boundaries as well as any additional supports for entrepreneurship and innovation delivered by LEPs and Combined Authorities.

Explaining the CITIE profile

A city region government's performance is represented by its CITIE profile, and performance against each of the nine policy roles. There is no single pathway to success. The CITIE profile captures the relative strengths and weaknesses of a city region government's policy environment to support innovation and entrepreneurship, and provides a tool to understand priority areas for development, highlighting best practice from around the world.

APPENDIX 3

Summary of the policy levers we looked for in city governments

We looked for city governments who:

REGULATOR	1. Enforce existing regulations proportionately	2. Review and update regulations to take account of new business models	3. Engage the full spectrum of stakeholders to craft balanced regulation		
ADVOCATE	1. Ensure a new business focus within the trade and investment function	2. Provide set-up support for new businesses	3. Promotion of the city as a hub of business creation	4. Sponsor events relevant to high-growth sectors	5. Helping early-stage ventures access global networks
CUSTOMER	1. Ensure the visibility of procurement opportunities through a single portal	2. Ensure that pre-qualifying requirements are achievable by new businesses	3. Define targets for spend on new businesses	4. Use problem-based procurement methods	5. Use open innovation methods to engage the ecosystem
HOST	1. Support access to co-working spaces	2. Support incubator and accelerator schemes	3. Enable access to affordable and flexible office space	4. Nurture Innovation Districts	5. Play the role of matchmaker within the ecosystem
INVESTOR	1. Support provision of coding and technical skills	2. Support schemes that help young people access the tech sector	3. Help businesses understand types of financing options	4. Provide funding	
CONNECTOR	1. Support access to high-speed internet	2. Provide free, public Wi-Fi	3. Ensure the high quality and extent of cycling infrastructures	4. Ensure frictionless and integrated public transport	
STRATEGIST	1. Publish a vision of how to support innovation and entrepreneurship	2. Have a public set of KPIs that measure the success of the city's vision	3. Have an innovation function within the city hall	4. Have senior leadership with responsibility for innovation and entrepreneurship	
DIGITAL GOVERNOR	1. Ensure 'digital by default' city services	2. Enable citizens to report city problems on the go	3. Enable citizens to engage in policy decision making		
DATAVORE	1. Use data analytics to optimise city services	2. Publish open data	3. Publish live data with appropriate APIs		

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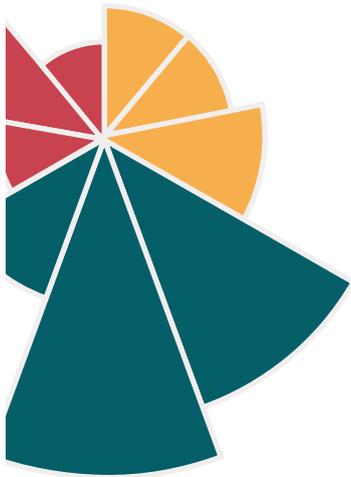
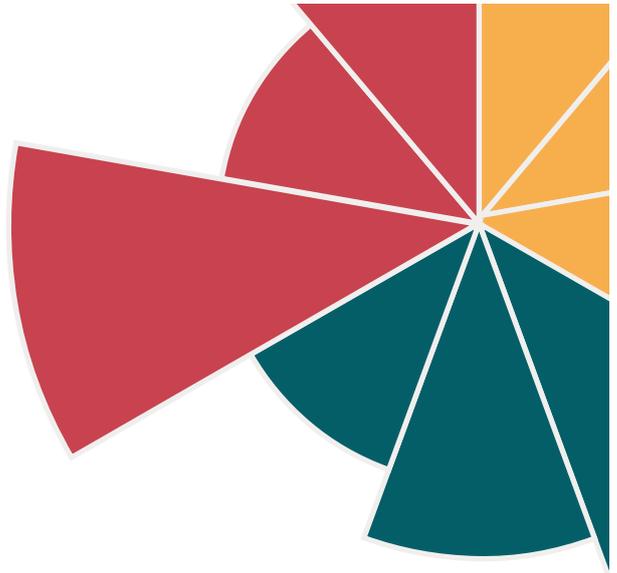
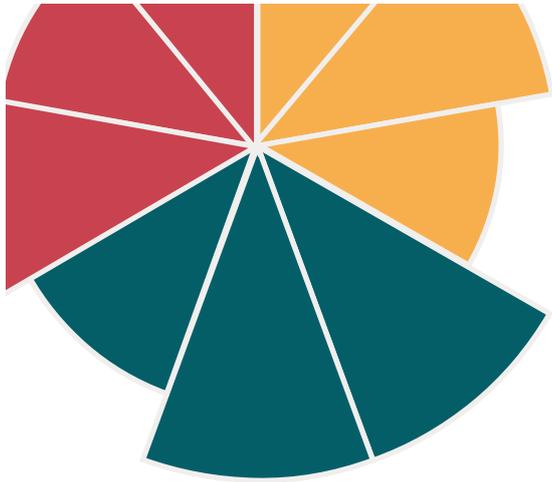
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The views and opinions in this report should not be viewed as professional advice with respect to your organisation.

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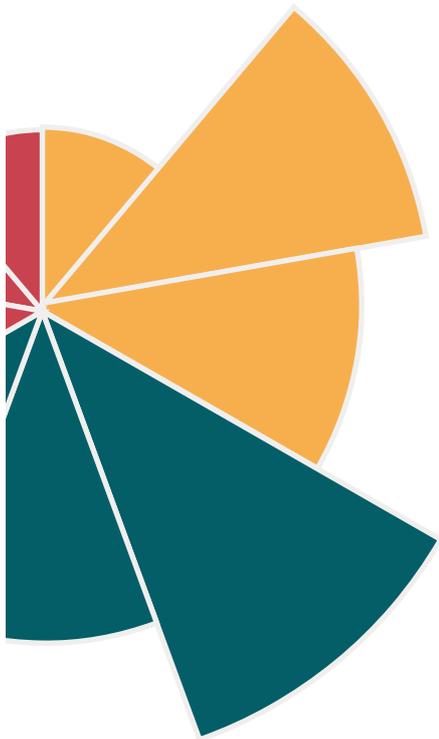
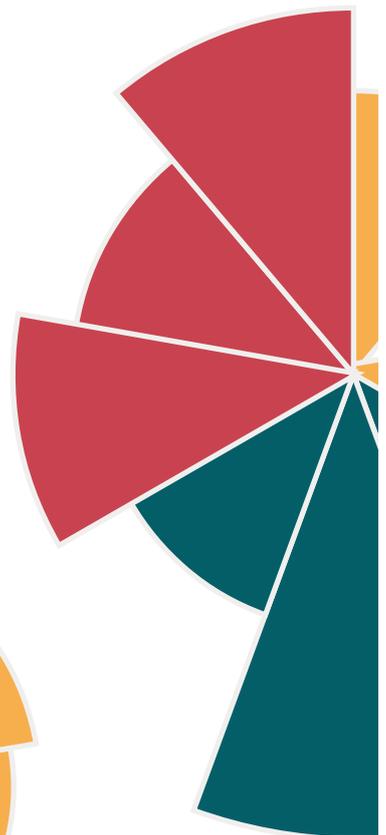
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