Innovation Caucus

REGIONAL ECONOMIC GROWTH THROUGH INNOVATION POLICY AND BUSINESS ENGAGEMENT:

EVIDENCE FROM THREE UK CITY REGIONS

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About the Innovation Caucus

The Innovation Caucus supports sustainable innovation-led growth by promoting engagement between the social sciences and the innovation ecosystem. Our members are leading academics from across the social science community, who are engaged in different aspects of innovation research. We connect the social sciences, Innovate UK and the Economic and Social Research Council (ESRC), by providing research insights to inform policy and practice. Professor Tim Vorley is the Academic Lead. The initiative is funded and co-developed by the ESRC and Innovate UK, part of UK Research and Innovation (UKRI). The support of the funders is acknowledged. The views expressed in this piece are those of the authors and do not necessarily represent those of the funders.

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EXECUTIVE SUMMARY

This report addresses current innovation policies and business engagement activities across three city regions: Cardiff, Glasgow and Manchester. Interviews were conducted with representatives from business, higher education, and local and national government in order to understand the interaction between these stakeholders in designing and delivering innovation and economic growth policies. While the three city regions have varying economic profiles and governance structures, and do not present a spatially even landscape for innovation, they have a number of characteristics in common and each is moving towards a more inclusive and place-based view of innovation.

Key findings:

The evolution of a city region over time.	A concious strengthening of place-based innovation policy.
Building a regional innovation ecosystem.	Expanding the innovation ecosystem to meet future skill needs.
Broader definitions of innovation to meet regional needs.	The convening and continuity roles higher education.
The need for an 'outward-looking-perspective' through which to inspire and shift mindset.	The re-writing of regional narratives.
Utilising and creating better data for evidence-based investment, policy decisions and evaluation.	The challenges of multi-level governance and policy churn.

1. **The evolution of a city region over time.** The temporal dimension to innovation policy development is recognised by stakeholders from across all three regions. As the longest-established, stakeholders from Greater Manchester City Region note the time and effort put into developing a coherent narrative around innovation policy and in building relationships so that stakeholders are genuinely working towards a shared commitment and purpose.

2. **A conscious strengthening of place-based innovation policy.** Stakeholders in all three regions recognise the importance of place-based innovation policies to support inclusive economic growth. This reflects a conscious shift, partly resulting from the development of the City Deals themselves. While the initial focus of such deals was orientated around infrastructure and physical assets often with an emphasis on the city centre, there is an accepted need to develop a suite of policies which

deliver for the whole of the region. It is recognised that this may require a twin-track approach playing to, and investing in, regional strengths on the one hand and seeking to be inclusive on the other hand. However, there are acknowledged tensions between the city centres and the peripheries in terms of priorities and investment needs.

3. **Building a regional innovation ecosystem.** Each region reports actively seeking to build a regional innovation ecosystem and this is deemed critical to delivering inclusive economic growth. In developing a place-based approach, a form of triple helix is evident in all three regions with partnership working between higher education institutions (HEIs), businesses and policy makers generally cited as well-established and effective. Nonetheless, challenges are also reported, including the difficulty of engaging small and medium-sized enterprises and universities prioritising research over innovation.

4. **Expanding the innovation ecosystem to meet future skills needs.** Participants identified opportunities to further expand the innovation ecosystem, recognising that further education (FE) and schools are under-represented and undervalued in policymaking, but seen as increasingly important for the development of a 'skills pipeline'. The need for closer working between schools and business, and the involvement of parents, to understand the skills needed for the 'jobs of the future' is also reported.

5. **Broader definitions of innovation to meet regional needs**. There is recognition that place-based innovation policy requires broad definitions of innovation in ensuring inclusivity. Alongside science and technology-based product development, which is often the focus of inner-city, innovation districts, participants spoke of the need for innovation in peripheral contexts to reflect the nature of the sectoral bases, the skills profiles and transport costs facing firms and workers in such places. Participants also referenced process innovation amongst SMEs, public sector innovation and innovation in the foundational economy as components of a more integrated and inclusive economy. A nuanced view of the varied economic conditions present within the city-regions is important in building a shared understanding of how each city-region economy knits together, and how differentiated assets may be best utilised. These are emergent considerations in each of the three contexts we explored.

6. **The convening and continuity roles of higher education.** Higher education institutions are seen as having a key convening role, providing 'safe spaces' within which stakeholders come together to explore shared priorities. HEIs are also identified as providing continuity and longer-term planning horizons in seeking to ensure benefits were felt by all. But it is also noted that this entails a broader civic impact agenda to complement the partnering with businesses in innovation districts.

7. **The need for an 'outward-looking perspective' through which to inspire and shift mindsets.** The need to look beyond the boundaries of the region in order to draw inspiration and motivation for innovation is given great salience by participants across all three cities. Comparisons are drawn with international clusters and examples of best practice but also from learning between the three cases. Here again, universities are seen as having a key role to play, not least since they are part of international networks.

8. **The re-writing of regional narratives.** Each region recognises they have a narrative that is evolving and, while valuing and building on inherited legacies, deliberate attempts to develop a positive vision are apparent. Here citizen engagement in informing this narrative is seen as important if views are to evolve.

9. **Utilising and creating better data for evidence-based investment, policy decisions and evaluation**. There is consensus across all three regions that more needs to be done to both produce and use data on the specifics of the region. A key point is that even where the data exist, they are not necessarily being collated and analysed and there may be capacity challenges. Relatedly, regions are looking to gather better data on the particular characteristics of their priority clusters and skills needs. New approaches are being developed, including heat maps showing decision makers 'what is out there' in the region.

10. **The challenges of multi-level governance and policy churn**. UK Government policies are seen as a catalyst for working together at the regional level. However, there are complexities with regard to the multi-level polity and policy variations between UK, England, Scotland and Wales. It is widely acknowledged that collaboration needs trust and transparency, a sharing of each actor's weaknesses as well as strengths, and a collective understanding of why collaboration would be mutually beneficial. Short-termism and policy churn are cited as problems in this context.

The report concludes with a number of implications for policy, practice and future research.

1. INTRODUCTION

The main objective of this report is to provide an **evidence base of current activity across three city regions** which are seen to have made substantial progress as regards innovation policy: **Cardiff, Glasgow and Manchester.** We conducted interviews with stakeholders from higher education institutions, local and national government, businesses and business representatives from across the three city regions to understand the engagement and interaction between these stakeholders in designing and delivering innovation and economic growth policies.

We aim to capture the diversity of geographies and objectives of each city region, presenting an overview of the similarities and differences between them, shining a light on **examples of best practice** and areas of innovative progress in each city region as well as **challenges and tensions** experienced on the ground. We provide insight, specifically, into the **opportunities** and **challenges** presented by the multi-level governance context in each city region, highlighting opportunities to capture and translate data into meaningful intelligence to inform future policy planning and on which to evaluate the impact of extant programmes and initiatives. We conclude the report by discussing implications for policy, practice and future research.

First, we present a comparative overview of each of the three city regions before discussing the key themes arising from the research which we group under the following headings: the current context; activity and developments on the ground, and future priorities.

1.1 Introducing the three city regions

Greater Manchester City Region

Greater Manchester is a metropolitan county in Northwest England, with a population of over 2.8 million people. It encompasses one of the largest metropolitan areas in the United Kingdom and comprises ten boroughs: Manchester, Salford, Bolton, Bury, Oldham, Rochdale, Stockport, Tameside, Trafford, and Wigan. There are five higher education institutions in the region.

The establishment of the Greater Manchester Combined Authority (GMCA) in 2011 brought together the ten local councils and provided a framework for collaboration and decision-making across the region, allowing for a more coordinated and strategic approach to economic development. Informally however, collaborative arrangements have been in place since 1986 across the Greater Manchester districts. Collaboration was further strengthened in 2017 by the creation of a directly elected mayor for Greater Manchester.

A series of city deals were signed between the UK government and GM between 2014 and 2017 and, in 2019, Greater Manchester launched its Industrial Strategy which identified four frontier sectors that demonstrate existing strength and future growth potential: advanced materials and manufacturing, digital and creative, net zero, and health innovation and life sciences. In 2021 Innovation Greater Manchester was set up to support the city-region's economic vision. Innovation GM is meant to be a 'triple helix' partnership organization bringing together businesses, universities, R&D institutions, and public sector agencies to strengthen Greater Manchester's innovation ecosystem.

In terms of governance, GMCA is accountable to a cabinet of the ten local authority leaders. The Local Enterprise Partnership (LEP) is a key component of GMCR governance and the GMCR is accountable to the LEP for its funding and delivering a coherent approach across all the local authorities.

Glasgow City Region

The Glasgow City Region, as a policy entity, was formed on the back of the Glasgow City Region Deal which was signed in 2014 (involving the UK and Scottish Governments). The city region is comprised of eight local authorities: Glasgow City Council, North Lanarkshire, South Lanarkshire, Inverclyde, Renfrewshire, East Renfrewshire and West Dunbartonshire, spanning, geographically from Inverclyde in the West to North and South Lanarkshire in the East. There are five higher education institutions in the region. This is the largest city-region in Scotland and contains a population of approximately 1.8 million people, yet sits within a wider economic narrative of relative underperformance vis-à-vis the east of Scotland (Edinburgh) and London and the south-east.

The City Deal, which provided £1.13 billion capital funding for infrastructure projects in the city, reflected a view that it was important to intervene at a functional economic geography (or something resembling that) and for investments to be targeted to support a central economic growth focus. The city region strategy lists the following high growth sectors: advanced manufacturing, digital economy, fintech and data, low carbon/environmental goods and services, health and precision medicine and space. The foundational economy is also a priority. The City Deal also supported labour market and innovation interventions, such as the Tontine centre. Alongside the funded interventions, the City Deal has spurred city-regional working.

The Glasgow City Region Cabinet (GCR Cabinet) is the ultimate decision-making body for the region.

Cardiff Capital Region

Cardiff Capital Region (CCR) was formed in 2016 of ten local authorities: Blaenau Gwent, Bridgend, Caerphilly, Cardiff, Merthyr Tydfil, Monmouthshire, Newport, Rhondda Cynon Taf, Torfaen, and Vale of Glamorgan. Geographically, the region spans from Bridgend in the West to Monmouthshire in the East.

It is the largest city region in Wales containing approximately 1.5 million residents (half the nation's population) and producing around 50 percent of the total economic output of the Welsh economy. There are three higher education institutions located in the region.

A total of £1.3 billion of funding was allocated to the city deal, with £734 million earmarked for the development of a new metro system. The priority sectors for the CCR are compound semi-conductors (CSC), fintech, cyber security and analytics, creative economy, medtech, transport, energy and environment. CSC and creative economy were both the focus of successful Strength in Places bids. These are both collaborative initiatives involving the CCR and local universities.

The CCR is governed by a Regional Cabinet of the ten local authorities which provides leadership, vision and strategic direction for the region. Future plans will see the CCR become the Southeast Wales Corporate Joint Committee (CJC).

While neither CCR nor Glasgow has a mayor - as can be observed with city-regions in England - joint committee working has arguably led to greater collaboration across the multiple local authorities in each region.

1.2 Introducing the key findings

We present the key findings organized around three themes:

1. The current context: where each of the regions has come from and where they currently see themselves. There are the following sub-themes:

The evolution of a city region over time

A conscious strengthening of place-based innovation policy

Building a regional innovation ecosystem

Expanding the innovation ecosystem to meet future skills needs

Broader definitions of innovation to meet regional needs

2. Activity and developments on the ground: examples of best practice and what is happening in each of the regions at present. The sub-themes are:

The convening and continuity roles of higher education

The need for an 'outward-looking perspective' through which to inspire and shift mindsets

The re-writing of regional narratives

3. Future priorities: where the regions see themselves heading and need to go. Sub-themes are:

Utilising and creating better data for evidence-based investment, policy decisions and evaluation

The challenges of multi-level governance and policy churn

Over the past five years there has been a significant shift in policy-making approaches in the three city regions, with a move towards more sustainable, inclusive growth and a focus on attracting strategic partners rather than just any type of foreign direct investment (FDI).

Apparent in all three regions is a greater hybridisation of innovation policy, reflecting a desire to support inclusivity and sustainability aims, not just narrow productivity outcomes, but with varying degrees of awareness/ competency in terms of how to get there and build frameworks (and directions) for policy. This direction of travel is muddied by past legacies, short termism in government and changing local autonomies amongst other things.

2. THEME 1 – THE CURRENT CONTEXT

In our first theme, we map out the current context, discussing developments over time and how the regions currently see themselves.

2.1 The evolution of a city region over time

There is a maturing or evolution in the governance and processes for regional policy making reported, particularly in Greater Manchester City Region (GMCR) which is the most mature, in governance terms, and in some regards advanced region.

> *"... if you look back to 1986 when the Greater Manchester County Council was abolished, the potential for the sorts of fragmentation you've seen in most places that had a metropolitan county were huge, and Greater Manchester has resisted that"*
>
> **(GMCR, Public Sector stakeholder).**

Manchester has pioneered a practical, evidence-based approach to local economic growth policies and programmes over the past two decades, as evidenced by the 2009 Manchester Independent Economic Review (MIER) and the 2019 GM Independent Prosperity Review. Having made significant progress in its innovation policy and economic development plans to date, GMCR stakeholders express a recognition that they now need to shift the focus, building from GMCR's success in 'volume' terms to ensure there is value, including social value, delivered through innovation initiatives. It was acknowledged that delivering on societal needs such as health and sustainability requires a shift in focus to the demand side.

> *"It's really interesting because you kind of moved away from the kind of suppliers side of technical skills and… so on… and indeed to market opportunities and regulatory frameworks and how you aggregate that demand and those needs"*
>
> **(GMCR, Higher Education Institute stakeholder).**

This more selective approach was also apparent in discussions on inward investment:

> *"I genuinely think we've seen a significant shift change in the last five to ten years in terms of where GM is on the international map, and it's got to a point now - and this is where it gets interesting within the context of innovation - where it hit a level of momentum where it's probably not needing to go out as aggressively just to attract any type of FDI. I think we are now getting to the point where we can be a bit more selective in the type of FDI that we are attracting to the city region...I think the leadership vision has shifted... around more sustainable inclusive growth, the vision is absolutely there, are we living and breathing that in terms of FDI principles and attraction? I think there's still a bit of a way to go on that front... but we now need to shift to make sure we're getting the right strategic partners into the region. And I think there are some great examples of how we've done that but there's still a long way to go"*
>
> **(GMCR, Business Representative stakeholder).**

Contributors from Manchester are consistent in recognising this key shift from 'volume to values' in driving their activity. And there are also clear reflections that this has taken a significant period of time and effort to develop.

> *"I think that shift away from volume to value is a critical element of the journey, we're already on with that, but there's still some way to go, and what that means for me is also a realignment with more longer-term priorities for the city region, so innovation, net zero ambitions, but also that broader inclusive growth agenda - making sure we're getting the right type of investment into the city region is going to be key. So that is a really important component"*
>
> **(GMCR, Business Representative stakeholder).**

The temporal dimension to innovation policy and development is recognised by stakeholders from across all three regions. Stakeholders from GMCR note, specifically, the time and effort that had been put into developing a coherent narrative around innovation policy and in building relationships so that stakeholders are genuinely working towards a shared commitment and purpose.

> *"So one of the challenges that I faced in the early days of my job was to try and find a way of keeping all ten of our districts on side in terms of the narrative around change, and the way I chose to do that was through using the notion of inclusive growth and trying to think about what that meant in strategic terms for Greater Manchester"*
>
> **(GMCR, Public Sector stakeholder).**

Stakeholders from Cardiff and Glasgow also recognise the time and effort required to work towards a shared commitment and objectives within their own regions, but also that they are working within specific contexts.

> *"I think Glasgow does have that strong sense that we mobilise quite quickly when opportunities arise... And I would argue that you know, talking to other UK cities, of course, they do the same things...but, actually, I think we do have an edge here in Glasgow. It's noticeable because of that long-standing and quite pragmatic approach to town-gown business.. that we can draw upon"*
>
> **(GCR, Public Sector stakeholder).**

> *"I think our organization understands that sometimes it can be three, four or five years of relational building before something happens, and that's got to be okay...... we're also very patient. It doesn't have to be in the next five minutes, it doesn't have to be next year. We're quite happy to hold the course, and we're also quite skilful at placing people that have been with us into significant positions that might benefit us"*
>
> **(CCR, Public Sector stakeholder).**

While each city region is distinctive, there were some key patterns in the development of policies as explicated further within the remainder of this report.

2.2 A conscious strengthening of place-based innovation policy

Participants recognise the importance of regional place-based innovation policy to inclusive economic growth, reflecting that they have seen a conscious shift in this direction, partly resulting from the development of the City Deals themselves. There is an acceptance that often the initial focus of such deals was orientated around infrastructure and physical assets, often with an emphasis on the city centre. This has contributed to acknowledged tensions between playing to, and investing in, regional strengths on the one hand and seeking to be inclusive and moving everyone forward on the other hand. It is also recognised that this may require a twin-track approach.

> *"If we don't use the language of the, 'there's your foundation economy, there's your frontier economy'…we are quite good in this country at probably servicing and stimulating part of what's required in the frontier economy, we might not distribute that as well as we could in terms of place-based policy making, so we need to get that more like in Atom Valley [a mayoral developmental zone that seeks to secure economic growth in a peripheral part of the city region]"*

(GMCR, Business Representative stakeholder).

The development of city centre innovation districts is one way in which the city regions are seeking to build from comparative strength and actively promoting innovation ecosystems in their city centres. It is recognized that these areas need to be vibrant places where people live, work and play. In the case of Manchester ID, there was a conscious decision to take a mixed housing approach that excluded student accommodation so that the buildings remain occupied throughout the year.

They are also seen as key spaces for collaboration, "where people could come together and share some ideas from different industries and different disciplines" (GMCR, Business Representative stakeholder). This is seen as particularly important when attracting external business into the region.

> *"So, there's all this stuff going on in the corridor and what we want ID to do is to be complementary to it, to link into the existing assets we've got, and to provide more streamlined access to that so if you're a company who lands on ID Manchester, you should find it easier to collaborate with the universities, the hospital, than you do if you just happened to plonk yourself somewhere else in the city"*

(GMCR, Higher Education Institute stakeholder).

Whilst recognising the focus of innovation districts on the city centre, participants spoke of the opportunity to work hard to ensure that they were embedded as a "good neighbour" (GMCR, Higher Education Institute stakeholder) in the wider local place, through utilising local supply chains for catering services for example and by ensuring that the campus was open to the local community as illustrated in the example of the Barclays Campus, in Glasgow City Region (GCR).

> *"They're totally embedding themselves in local. So, to give you an example, all the coffee they use in the campus is a locally sourced ethical coffee grinder who's within a mile of this sort*

of Govan area….They have beer on the campus, in the bar, and the beer is another local beer, which was from within a mile I was told this morning. But they've got the Barclays Eagle Lab there, which is an innovative coworking space for companies, start-ups and scaleups, that's interesting. They've got an outdoor event space and they're doing things like farmers markets and things to encourage the local community to use it. So, they really do see themselves as being almost part of the local community... So, I think that's a good exemplar, actually of a business that's trying to be… you know, it's a big shiny 4,500 people, super modern space, all absolutely designed with sustainability in mind, but totally embedding themselves into what you might describe as a deprived area, or certainly an area that has not had significant investment in recent years"

(GCR, Business Representative stakeholder).

SHINING A LIGHT ON INNOVATION PROGRESS ON THE GROUND

City centre Innovation Districts:

Manchester ID (GMCR)
- Key space for collaboration
- Accessible to all (live, work and play)
- Mixed housing
- Opportunity to link with Atom Valley Advanced manufacturing Innovation District

Barclays Campus (GCR)
- 'Good neighbour' – utilising local supply chains
- Open to all
- Embedded in an under-developed area of the City Region

Peripheral Innovation Districts:

Atom Valley (GMCR)
- Mayoral Advanced Manufacturing development zone in Oldham
- Replacing low wage economy with highly skilled work in the area
- Challenging negative regional perceptions
- Raising wages at all levels

Compound Semi-Conductor (CSC) Foundry (CCR)
- CSC cluster development in Newport
- Targeted investment in priority sector producing benefits across the City Region
- Anchor organisations attracting investment and SMEs to the area
- Connecting with supply-chains across the City Region

There is a recognition that such innovation districts should be carefully planned so as to be open and accessible to the neighbouring communities and joined-up with the rest of the innovation ecosystem, including those based within the peripheries of the city region. In other words, "how can we make the ten year olds that are living in that site now the innovators and entrepreneurs who are working in the district in twenty years' time?" (GMCR, Higher Education Institute stakeholder). For these reasons, opportunities for investment in specific activities that met more peripheral regions' needs and strengths were seen as complements and such investment should be part of a wider spread of innovation policy and activity which also includes the development of innovation districts in more rural and industrial (often peripheral) areas of the city region.

An illustration of this can be seen in the vision to link ID Manchester with the current development of Atom Valley, a Greater Manchester Mayoral development zone in the northern boroughs of Rochdale, Oldham and Bury, that are relatively underperforming in productivity terms, to support advanced manufacturing activities.

> *"...the aim there [Atom Valley] is to say, well, okay, if you have high productivity manufacturing-based businesses, they need space. You know, that's the thing that Oldham, Bury and Rochdale have got that central Manchester hasn't got - space and connectivity and all that sort of thing. So, the second part of the argument is to say okay, if we can rebuild….a more manufacturing-based economy in those parts of the city region, you know, outside the city centre, then that will produce jobs at all levels, and I think there's reasonable evidence… linking…the innovation activity of manufacturing companies to the wages that they pay at all levels, not just at professional levels"*
>
> **(GMCR, Business Representative stakeholder)**

The Compound Semi-Conductor Foundry, in Newport is another example of targeted investment in priority sectors producing wider benefits across the city region.

> *"The Compound Semiconductor, the focus is predominantly in Newport and Chepstow with research strengths here in Cardiff and also in Swansea. But what we are seeing is, off the back of that, there's a couple of start-ups that have come and new businesses that are being attracted to the region...And there's companies in the Heads of the Valleys that are critical to it, and what our investment is going into is to help their supply chain to grow to meet their demand, otherwise, it will lose all the business from the region because they'll need… they'll probably take it somewhere else. So… that's part of the thinking. I don't think the traditional, you know, trickle-down stuff really works, so you've got to work and think about it differently"*
>
> **(CCR, Public Sector stakeholder).**

There is a recognition, however, that the 'peripheral' innovation districts are reliant on good transport links, infrastructure and (physical and digital) connectivity both to connect people with jobs but also linking 'economic assets' together.

> *"That also deliberately brings into play areas of the region which are not as economically active as they might be. And I think the argument would be that if that ultimately linked the airport with Paisley Gilmore Street with the Queen Elizabeth Hospital with AMIDs [the Advanced Manufacturing Innovation District]. If it also came through Govan, it's going to affect people in terms of their ability to get networked and get to jobs because, at the moment, they might have to make two or three bus journeys to get to a job which is, in some cases, precluding them from actually working. Whereas, that link would actually bring them back into, you know, economic play, if you like also linking all those economic assets including…*

the airport with the hospital with AMIDs…Braehead, etc. for shopping, the retail centre"

(GCR, Business Representative stakeholder).

Likewise, physical connectivity was seen as an essential mechanism through which to join together the various innovation districts "between different parts of the city region as a way of ensuring the people feel they are part of the whole economy and connected to different opportunities" (GMCR, Public Sector stakeholder).

2.3 Building a regional innovation ecosystem

Each region reports actively seeking to build a regional innovation ecosystem and this is deemed to be critical to delivering inclusive economic growth. It was felt that the regional innovation ecosystem approach should provide a joined-up network of all of the "talent and access to capital in some way, shape or form" (CCR, Public Sector stakeholder) across the city region.

In developing a place-based approach, a form of triple helix is evident in all three regions with partnership working between Higher Education Institutions, businesses and policy makers generally cited as well-established and effective. That said, it is widely acknowledged that there are challenges in practice, for example in engaging the SME community.

"I think inevitably the bigger corporates are more plugged into this [the innovation agenda] because they've got the resources and they obviously will be seeing opportunities for funding and tapping into that, whereas SMEs are thinking… it's not so much maybe at the moment about thriving, it's surviving"

(GCR, Business Representative stakeholder).

There are also different views on priorities, for example, university interests in 'pure research' over applied research; "the influence of the universities themselves isn't always helpful because a lot of that will push into classic university research" (GMCR, Business Representative stakeholder).

Participants reflected that the innovation ecosystem needs to be visible so that stakeholders can see where they currently, or potentially could fit into that ecosystem and so that education providers and policy-makers can identify the gaps that need to be filled in the talent pipeline and plan for skills development accordingly.

"SMEs need to work out where they are in their value chain. Because a lot of businesses aren't aware where they exist in their value chain. So, we need to give them advice and support and education around value chain analysis. What that will allow is a visible pathway that Careers Wales and everybody can say, look, there's this high value potential end job, here's a pathway of how you can achieve it. You can either do a university route or an apprenticeship route. These are the value chain opportunities"

(CCR, Business Representative stakeholder).

2.4 Expanding the innovation ecosystem to meet future skills needs

One key area of collaboration across all actors within the triple helix is with regard to skills and the importance of skills development in the improvement of the economic prospects of citizens in each of the regions. This was viewed as a key challenge. However, although HEIs are traditionally viewed as crucial in providing access to talent and skills, participants identified opportunities to further expand the innovation ecosystem, recognising that further education (FE) and schools are under-represented and increasingly important stakeholders to engage with, particularly as regards the development of a 'skills pipeline' within the innovation ecosystem.

> *"There is a very big job to do in terms of encouraging business models, better forms of employment, better conditions, better wages in some of our routine sectors and making sure there is a pipeline of provision out there to satisfy that. The idea that universities should be involved in that seems to me to be crazy. They can be quite useful routes from apprenticeships through to degree programmes if that's what people are interested in, and that's part of the local debate as well, but doing better in technical education is a no brainer to me"*

(GMCR, Public Sector stakeholder).

There is also a view that business and schools should work together more, and that parents and teachers needed help to better understand the 'jobs of the future' in order to be able to equip future generations of innovators with the right skills. This is seen as particularly important with regards to intermediate, technical skills which may be required for future jobs created in advanced manufacturing, for example. These are jobs that typically are more likely to be located in peripheral areas of the city region.

> *"You're creating a pathway, so suddenly now, not only have you got a leading industry that's going to maintain and grow, because we know that the build of the chip is going to be there forever now. Then we can look at how do we support that with a value chain proposal. How then can we put in a pathway that schoolchildren, from primary school to secondary school can have visibility, the parents and the teachers have visibility"*

(CCR, Business Representative stakeholder).

Along with social mobility, skills are also seen as central to efforts to ensure inclusive economic growth. There is a recognition that investing in skills development not only provides a means to 'future-proofing' the economy so as to remain competitive, it also presents an opportunity to reskill and upskill those who face disproportionately higher barriers to good jobs within the labour force.

> *"Obviously, education and skills is going to be massive…. we need to... futureproof the workforce and there's some lovely examples of agencies that are looking at reskilling and upskilling of refugee communities and what have you and I think we need to build that into...our skills programmes… Nursery...early years all the way through, tackling leaky pipelines in certain industries, looking at all sort of inequalities.*

So, skills and education, tech adoption, education and skills is going to be key and will underpin a successful innovation economy"

(GCR, Business Representative stakeholder).

These concerns with skills development and building the connectivity of the ecosystem within the region are consistent with the need to invest in the 'innovation commons' or the resources of tomorrow's innovation alongside targeted investment in priority clusters.

2.5 Broader definitions of innovation to meet regional needs

There is a recognition that, in addition to the 'new, shiny' product development forms of innovation (often the focus of inner-city, innovation districts), other forms of innovation take place across the region. For example, 'process innovation' whereby small businesses innovate through doing things which are "not always new" (CCR, Public Sector stakeholder) but often related to technology adoption and adapting to change, for example, in relation to the decarbonisation agenda and Net Zero targets or to make use of new and emerging technologies and digitalisation. Such objectives have been presented in mission frameworks which aim to structure policy responses to support transformational social and ecological ends.

Participants also refer to the need to pay attention to public service innovation, innovation through supply chains, as well as innovation arising in 'surprising' places, such as the innovative response of restaurants to the Covid-19 pandemic.

"So, you can look for innovation in different, unusual parts of the economy. It's a big risk for having industrial strategy with separate sectors, as you can miss some of the stuff. Who would have thought in the pandemic that most restaurants around here would suddenly become takeaways?"

(GMCR, Business Representative stakeholder).

These forms of responsive innovation require a "curious, skilled workforce" (GMCR, Business Representative stakeholder) which is itself innovative and able to identify creative ways of adapting and responding to change. Such process innovation, the participants reflect, may support increased productivity through the benefits that accrue to small firms.

"It needs to be driven through productivity improvement, so it's that focus on process innovation. You know, we need to get those companies as productive as possible, given the challenges that they face, and the difficulties in the market at the moment"
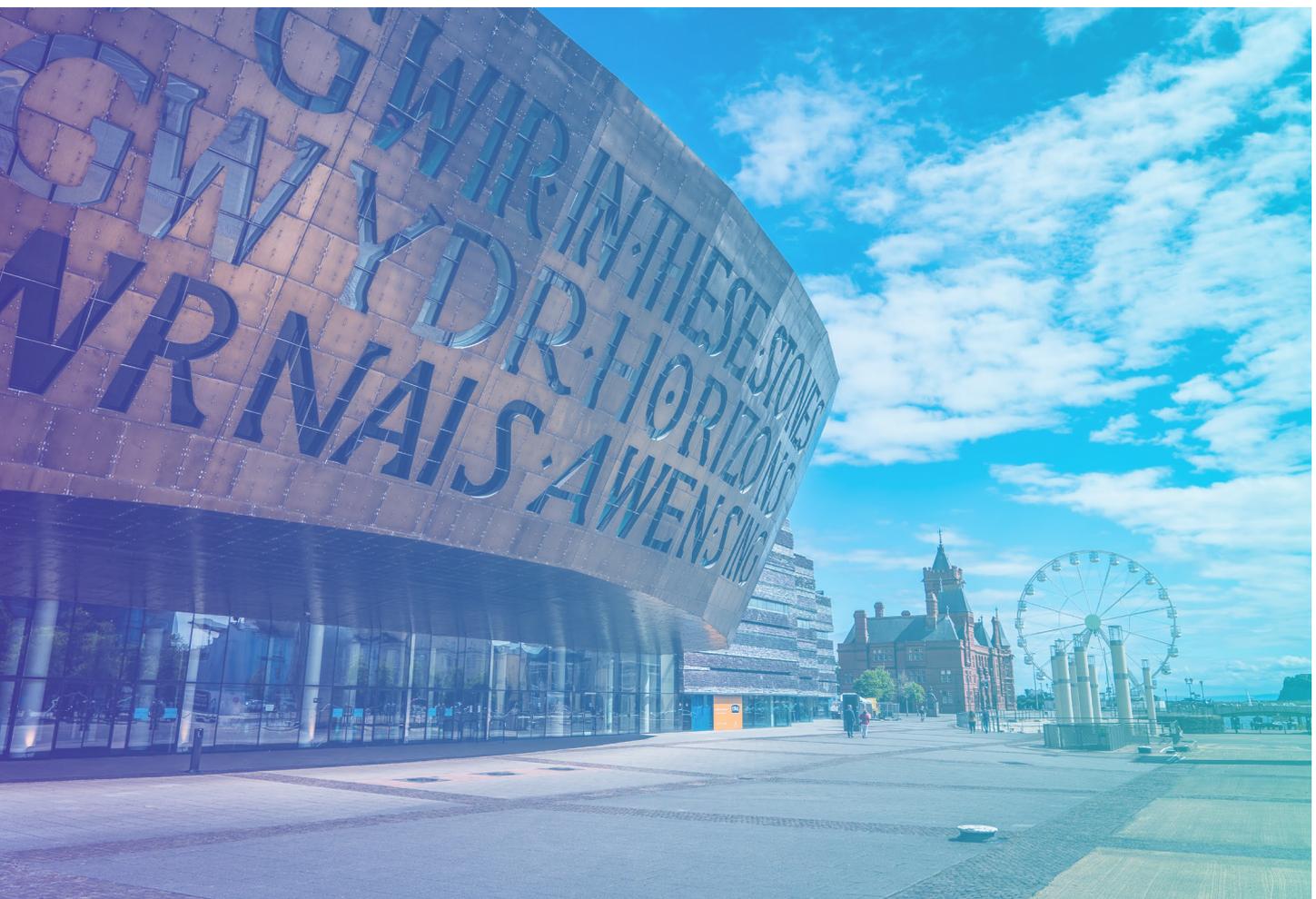
(GCR, Business Representative stakeholder).

Likewise, the Foundational Economy is heralded as a key opportunity to take a more inclusive approach towards innovation, one "that isn't just focussed on high tech frontier sectors, and that is improving the quality of jobs and the quality of businesses and business models across the whole of the economy" (GMCR, Public Sector stakeholder).

Specifically, a more innovative approach towards the Foundational Economy is viewed as providing an opportunity to work towards a more integrated, inclusive economy. Here developments in Wales were highlighted, including the Welsh Government's Foundational Economy Challenge Fund and the Cardiff Capital Region's Local Wealth Building Challenge Fund which has supported innovation in healthcare provision, decarbonization of local authority fleet vehicles and local food supply and resilience amongst others

"If you've got a more innovative foundational economy, you're more likely for people to be able to make those steps and move around between different careers, different jobs. So, it creates a more integrated economy and helps to overcome that sense that there's this high tech, science bit of Manchester and Salford and that's for some people, but not for everybody. It's just trying to create a more integrated, inclusive economy, and an economy where people feel like everybody's got a stake in it"

(GMCR, Public Sector stakeholder).

This broader conception of innovation complements the work being done on skills development in seeking to create opportunities across the various locations and labour markets of each city region, including, for example, the 'Good Employment Charter' in GMCR which seeks to promote good employment practices, increase productivity and support inclusive growth.

3. THEME 2 – ACTIVITY AND DEVELOPMENTS ON THE GROUND

The second grouping of themes coalesces around the current developments and practices taking place 'on the ground' in each of the three regions, focusing on the role of HEIs, the importance of an outward-looking perspective, and the need for a deliberate effort to re-write regional narratives and shift future mindsets towards a more optimistic while pragmatic view of what might be possible.

3.1 The convening and continuity roles of higher education

Higher education institutions are seen as adopting a key convening role, bringing various stakeholders across regional innovation ecosystems together to work on innovation policy development and delivery across the regions. HEIs are particularly signalled as a key actor in providing continuity, longer-term planning horizons and in seeking to ensure benefits are felt by all.

Foremost, participants point to the convening space HEIs provide in bringing the right stakeholders, from disparate sectors, disciplines and industries to work together towards shared commitments. In Manchester, this model has been extended through the Innovation Greater Manchester 'triple helix' partnership, which is perceived by other regions as a particularly effective institutional arrangement for such an approach.

> *"I quite like that Innovation Manchester model and I'd like to see something like that replicated in the Cardiff Capital Region. And I think universities have got, you know, they're safer spaces for convening"*
>
> **(CCR, Public Sector stakeholder).**

HEIs viewed as a key actor in:
- Bringing the right stakeholders together to work on innovation policy
- Providing continuity and longer-term planning
- Seeking to ensure benefits are felt by all.

Example: Greater Manchester Civic University.

Secondly, HEIs are viewed as of particular instrumental value in addressing tensions arising from short-term funding and policy cycles, providing longer-term planning horizons as evidenced in GMCR's approach towards planning for ID Manchester.

> *"The funding stuff is frustrating. I think as a university we can take a long-term view and that's one of the strengths of the organisation, some people say universities don't take as long-term view as they should do...but longer term than politicians......The way we deal with it is we have a long-term vision, and we don't have a road map to how we're going to get there because it will be subject to whatever funding decision is made by government. So, we set out a vision for ID Manchester linked to Atom Valley end of 2019, so for the incoming government to say look you want to level up through R&D, here's your plan, it's in a red wall seat, it ticks all the boxes, government couldn't commit to that at that time, so we work through various processes to find some ways to fund it and get it up. So, for us, it's that purposed vision"*
>
> **(GMCR, Higher Education Institute stakeholder).**

Participants also positioned the shifting role of universities in taking a more 'place-based' approach, more connected to the citizens and also "local industry" (GMCR, Higher Education Institute stakeholder). Whilst HE has traditionally been seen to influence innovation policy towards city-centre innovation districts, an opportunity is identified for universities to lead the way in ensuring that economic benefits from investment in city-centric innovation districts are spread or at least felt across the region.

> *"If you look at our higher education R&D performance, you know, we're at the top of the rankings, so we've got lots of talent, knowledge and capability within the university sector. The innovation districts is an investment to try and translate that more into the wider community"*
>
> **(GCR, Business Representative stakeholder).**

The pandemic strengthened the civic role and collaboration among universities in Greater Manchester, resulting in the signing of the Civic University Agreement between the five universities in the city region and the combined authority. This agreement outlines a commitment to work together on a range of priority areas, such as convening citizen panels to address community needs.

> *"There are five universities in Greater Manchester, and they signed a civic university agreement which was kind of sponsored by the Mayor, sponsored by the combined authority, which…commits the universities to collaborate on a whole variety of priority areas. And…one of the actions that the agreement has taken has been to convene a citizen's panel… essentially a two year project where we'll use citizen's panels to get views from…representative citizens…from the whole GM…demographically balanced to get the sense of… [what] people's priorities might be for growth, inclusive or otherwise"*
>
> **(GMCR, Higher Education Institute stakeholder).**

Engaging citizens is seen as important for a number of reasons including, as we will see below, in addressing perceived historical weaknesses in each city region and shaping new ambitions.

3.2 The need for an 'outward-looking perspective' through which to inspire and shift mindsets

The need to look outside existing boundaries in order to draw inspiration and motivation for innovation is given great salience by participants across all three regions. Comparisons are drawn from both international clusters and examples of best practice that are seen as relevant to the circumstances of the region (for example, the Basque Country, Toronto and Amsterdam) but also from best practice across the three case studies within this report.

> *"So, we've had a lot of interaction on clusters with the Basque region. We had the Catalonia region come to see us, and they've been working on clusters for over 30 years, and really know their stuff. And I managed to link with them, I speak to them in Spanish and brought them into the region, and they were very helpful. We've talked to Canada, we've talked to*

Malmo. So, we've tried to pick best in class elsewhere"

(CCR, Public Sector stakeholder).

Comparisons are made, specifically, with regards to the innovation vision and strategy of the comparator regions as well as the governance arrangements and business support in place to deliver those strategies.

From a UK perspective, Greater Manchester is often heralded by participants from the other regions as 'leading the way', however, interviewees from GMCR reflect that they still have 'much to do' having reached a juncture through which to consolidate and focus on the impact of the development invested in, to date. At the same time, GMCR stakeholders express an interest in learning from others, including, as noted above, what the Cardiff City Region (CCR) and more widely Welsh Government are doing in applying challenge-oriented approaches.

In all cases, there is a recognition that drawing on insights from (and spending time connecting with those involved with) city regions and clusters outside of their city region results in a more 'outward-looking' perspective which opens stakeholders' eyes to what is possible within their own regions, offering inspiration and motivation for change "even.... if it's not being able to replicate it on a place-based level. Just a different mindset of what could be, I guess" (GMCR, Public Sector stakeholder).

A further reason to be outward looking concerns the regional benefits that may emerge from the global networks certain regional actors are involved in. Here, universities are also seen to have a key role to play since they are part of international networks which often include businesses as well as other HEIs.

"Universities play a key role in having that international connection with key strategic players, and they have strategic partnerships with a number of big companies. Also, they have space, so it only makes sense that there is that collaborative partnership with FDI agencies. And, yeah, it should be joined-up, particularly now with all these developments around the Innovation District and so on, which is everything coming together, isn't it? The space, the research links, the innovation ecosystem"

(GMCR, Higher Education Institute stakeholder).

3.3 The re-writing of regional narratives

Each region recognises that in order to achieve inclusive growth, narratives and perceptions are important. There is a dominant (often negative) narrative associated with certain locations and therefore shifting mindsets towards a new, positive narrative is required which recognises, values and builds upon the legacy of the place. Here citizen engagement in informing this narrative is seen to be important if citizens' views are to evolve.

In Cardiff, it was acknowledged that the city is building from a low base in some regards.

"I think the innovation challenge is fairly black and white. If you look at any comparison of us versus another city, we don't

raise as much capital, we don't have as many tech success stories, we haven't done this, we haven't done that. Any metric you want to think of would make the reality pretty black and white"

(CCR, Business Representative stakeholder).

This perhaps contributes to the widely held view that the city lacked confidence;

"We're not confident in saying 'we're good at this', you know, we downplay it'... we don't celebrate success particularly well"

(CCR, Public Sector stakeholder).

And the need to develop a more positive and optimistic self-view of the region and its potential, based on regional strengths was widely acknowledged.

"...so the narrative has to be about us having a degree of more self-confidence, aware of our… maybe our shortcomings and our limitations, but not to be held back by them. So, the psychology of it just needs to be completely flipped but the narrative has to be grounded. There's no point telling everybody that we're leading and we're the best and we've got, you know, whatever… because we're not. But equally, what can we say that's positive? And let's get behind it and let's celebrate the successes and go from there. It's about, if we want a level playing field, at the moment, it's easier to bring people down. How do we bring people up? But even the top, even the cream of our cream needs to get better. So, how do we raise everybody but close that gap?"

(CCR, Public Sector stakeholder).

> **Re-writing regional narratives requires:**
> • Citizen engagement
> • Building on regional strengths
> • Celebrating and sharing success stories

In Glasgow, there is a recognition that long-running health inequalities, which present key challenges in getting people back into the labour market, provide a backcloth for productivity and business concerns in the region. There is also a recognition that with low business formation rates and comparatively low productivity, there is a need, like CCR, to start "changing the narrative around what Glasgow is" (GCR, Business Representative stakeholder) through sharing positive success stories, particularly those reflecting actors often "unseen", such as ethnic minorities and women in start-ups.

The narrative in Greater Manchester seeks to build upon and celebrate the legacy of the "glorious" manufacturing past, for example, in places like Oldham, in its plans for investment in the advanced manufacturing hub in Atom Valley. Such initiatives are thus aiming to replace the "low wage economy" of the area with one based on more highly skilled work. However, they argue that there is still a lot of work to be done in GMCR, particularly in periphery areas, such as Oldham, to challenge negative perceptions. As one interviewee (Public Sector stakeholder) mentioned "the quality of the journalism […] it's terrible for Oldham because all you ever get is crime". Despite perceptions of parts of GMCR as 'economically booming', there is a recognition that there needs to be stronger economic growth throughout the city region before there will be benefits across the region.

"I need to insist on the fact that the economic performance of the whole of Greater Manchester is still poor compared to UK average. So, I think, you know, there's a perception problem that we have which is partly self-inflicted which is that everybody thinks that Manchester is economically booming and that citizens of Oldham don't get to share in the economic boom of Manchester. But the fact is that the city of Manchester's not doing very well either. In fact, nowhere is doing very well. I mean, there are differences between the boroughs, you know, they show up both in productivity and in… in, you know, household income, but the case remains that there is not enough economic growth in Greater Manchester anywhere"

(GMCR, Higher Education Institute stakeholder).

It is important to acknowledge that the three city regions cover a range of different economic circumstances and there is a challenge in seeking to develop narratives that speak to the experiences of all of those within any of the regions. In important ways, this challenge echoes that of the differential needs and experiences of the city centres and peripheries introduced above.

Greater Manchester City Region (GMCR)

Opportunities

- Mature regional policy making
- To shift from volume to value of innovation initiatives
- Evidence-based approach to local economic growth policies and programmes

Challenges

- Time and effort taken to develop coherent shared narratives regarding innovation policy
- Perception that GMCR is 'economically booming'

Cardiff City Region (CCR)

Opportunities

- To celebrate and share success stories
- To invest the time and effort in developing collaborative relationships
- To raise productivity

Challenges

- Building from a 'low base'
- Tendency to down-play successes

Glasgow City Region (GCR)

Opportunities

- To build on long-standing 'town-to-gown' relationships
- Culture towards pragmatic approach to mobilise around opportunities
- To start changing the narrative of 'what Glasgow City Region is'

Challenges

- Long-standing health inequalities, low productivity and business creation rates
- To share success stories of 'unseen' innovation

4. THEME 3 – FUTURE PRIORITIES

In this last theme, we turn to an evaluation of future directions and priorities for policy and practice. The sub themes focus specifically on data for evidence-based investment, policy decision-making and evaluation as well as the opportunities and challenges presented by multi-level governance.

4.1 Utilising and creating data for evidence-based investment and policy decisions and evaluation

There is consensus across all three regions that more is needed to both produce and use data that speak to the regional level, for example, with regard to innovation and R&D. A key point made is that even where the data exist, they are not being collated and analysed and there often is not the capability to do so.

> *"I've been slightly surprised with coming into this role in the last sort of three and a half years, there's still a lack of evidence from what I can see, about what actually works, and how you address it"*
>
> **(GCR, Public Sector stakeholder).**

> *"I think personally, data still continues to be one of the weaknesses really of how Wales acts as a whole. I think it's not so much that we're data poor in any of our core areas, we're flooded with the damn stuff. It's the conversion of that into meaningful information, you know, we're data rich, not quite so information rich. So, our conversion of data through analytics into meaningful information isn't strong, or as strong as it could be"*
>
> **(CCR, Public Sector stakeholder).**

Future priorities centred on data and evidence-based decision making, plus a recognition that mobilising around key priorities that are identified takes considerable effort in building social relations, convening activity, and the commitment of key individuals. In some ways this might be seen as the data indicating the 'what and where' of policy interventions with the social informing the 'who and the how'.

Opportunities for utilising data for evidence-based policy decisions and evaluation:

Heat maps:

- Opportunities for growth
- Clusters of regional strengths
- Clusters of regional resources and skills
- Business value chains

Optimising policy decisions:

- Collective intelligence
- Causal reasoning
- Complexity analysis

There is an acknowledgement of the need for better policy evaluation capabilities, particularly beyond where it is written into the specific programme protocols. Examples given include the need for both evidence-based policy and the data to inform the measurement and evaluation of those policies.

> *"We're trying to be better at tracking inward investment and engagement levels and what that means and how does the support that we're doing dive into that but we're only one part of the jigsaw. We need a much bigger picture of how all that gets influenced. It's a huge minefield, and the data's only telling us part of the story. We know the growth sectors, we know from our skills development school and forecast, you know, expansion demand, replacement demand, all that good stuff, but it's not telling us the skills, it's not telling us the jobs"*

(GCR, Public Sector stakeholder).

> *"I think we don't have the data on the ground. We've got a bit more data than we had five years ago, but we just don't have enough. You know, there's still big lapses.... there is very poor quality data of business R&D…it is quiet embarrassing actually. So, if I want to ask the question, 'how many research active companies are there in Rochdale'? That still is a very difficult question to answer"*

(GMCR, Higher Education Institute stakeholder).

A related area of concern, and where work to rectify the situation is underway, is with regard to key clusters or sectors and where there may be opportunities for growth.

> *"If we had the map that I talked about in place, we'd be able to see on a heatmap the concentrations of where those [strengths] existed. So, that map would be able to tell us whether they're city centric or valley centric... But I would say if you had that heatmap in place, you would be able to identify those businesses that are happy where they are…But actually, the size of the market, it might be that there's no heatmap over there because there's not enough businesses, so actually there's a market there. What I'm trying to say to you is, if I put us all in a helicopter now and said 'come on, let's come and view it'….that's where that macro level analysis would become beneficial in trying to drive a policy or strategy for a region"*

(CCR, Business Representative stakeholder).

Similarly, regions were looking to gather better data on the particular qualities and characteristics of their priority specialisations.

> *"...that would identify what we need to build our clusters of growth. So, we need to create heat maps I think of these areas of strength, and within that look at resources and infrastructure and skills. So, we need that evidence I think to... sell ourselves to the world and say 'Listen, there's some really cool stuff happening here'. But also, to look inwardly and say 'Right, this is great, but actually we need more skills in this area', or 'actually we don't have the infrastructure to enable us to take that to the next level'"*

(GCR, Business Representative stakeholder).

"Now, that would be really innovative if we could have a value chain map of the businesses in Cardiff, that would be tremendous. Because what we're trying to say and what we need to understand is that if we want to generate economic prosperity working hand in glove with social prosperity, if we can move an SME from value chain tier four to value chain tier three, the amount that they can derive and attain is greater, because the further up the value chain, the more value there is, historically and incrementally…Because then that could allow us as an industry and as a region to say 'you know what, you can go in and talk to them' and say 'you have the potential to move up the value chain', but they might not realise it. So, that's where the business support can come in"

(CCR, Business Representative stakeholder).

This desire to understand innovation strengths and gaps is leading the regions to experiment with new approaches including the development of regional heat maps that tell decision makers: what is out there, what is happening across tiers in supply chains, and who has capability for innovation. In GMCR, stakeholders are also currently experimenting with algorithms and machine learning tools to support and better inform policy-makers.

"There's some research that we've being doing on this in terms of optimising policymaking to actually derive the best outcome. It's based on proper links of collective intelligence and causal reasoning. What it basically does is, if you look at the outcome and using neural networks at potentially neuro symbolic artificial intelligence, you can basically work backwards disproving things that would not derive the best, the optimal output, it works backwards... We've been talking to different funding arrangements, at organisations, and the concept is saying within two to three years we'll be able to come up with provable better policy decision-making capability than your top advisors and if you think of the cost of getting a policy wrong, it's astronomical"

(GMCR, Business Representative stakeholder).

In GCR, and pertinent to considering innovation paths in the future, complexity analysis has recently been developed within the city region intelligence hub to identify adjacent growth areas relative to existing sectoral concentrations.

The other key area that respondents report as problematic in terms of data is with regard to skills.

"I think there's huge challenges with the evidence base… I mean, we've struggled with the innovation data itself, in terms of accurate, up to date data, official data issues... [There has been] quite a lot of work around skills and understanding, linked to the innovation angle, but the skills dataset is hugely lagging again"

(GMCR, Public Sector stakeholder).

Here, participants spoke of the opportunity to develop skills taxonomies to support and overlay capability heat maps so that businesses, HEIs and

policy-makers can access a fuller picture of the current state of and future potential innovation opportunities within the region.

"I think a lot of skills taxonomy, like they have in the US, there's a work around that in the unit for future skills, and I was thinking, wouldn't it be interesting if you had this big database of potential growth companies to understand what sort of skills and occupations exist within those businesses, then you can overlay that with the taxonomy and then surely you'd get some sense of those most likely to grow, what types of skills they're using, and what they might use in future, etc "

(GMCR, Business Representative stakeholder).

4.2 The challenges of multi-level governance and policy churn

United Kingdom Government policies regarding levelling up are seen as a catalyst for working together at the regional level and there is an increased desire reported for collaborative bidding for competitive funding as place-based schemes are coming on stream. However, complexities with regard to the multi-level polity and policy variations between UK, England, Scotland and Wales are acknowledged as creating some challenges. Nonetheless, there was a pragmatic view held by local stakeholders on the whole regarding the opportunities offered by engaging with UKG particularly in Glasgow and Manchester. Tensions were more evident in Wales;

"Welsh Government's had no say in how the Levelling Up Fund is being created or implemented so, the Welsh Government thinks that this whole move towards Shared Prosperity funding and Levelling Up funding is not going to serve Wales"

(CCR, Public Sector stakeholder).

While it is widely accepted that collaboration requires trust and transparency to be developed and a shared understanding of why collaboration would be mutually beneficial, a lack of policy clarity and consistency are cited as problems.

"I think we recognise the critical need to evolve and empower localities, but we've got a government that I think, in practice, appears to be doing pretty much the opposite. I think there are some areas where we can be slightly more positive and optimistic, but they are few and far between"

(GMCR, Business Representative stakeholder) .

The short-termism of policy initiatives was also seen as creating difficulties on the ground, resulting in stakeholders expressing a conflict in doing "fast and slow at the same time" (GMCR, Public Sector stakeholder), recognising the time taken to develop and implement innovation programmes and to see the fruits of such initiatives directly conflicting with short-term funding cycles.

"If you look at the structure and approach, they are again very short-termist. We've got a programme that is essentially going to be a two-year programme, by the time it's up and running, we will probably be down to eighteen months for delivery;

Multi-level governance and policy churn

Challenges:

- Lack of policy clarity and consistency
- Short-term policy and funding cycles
- To align multiple levels of governance

Multi-level governance and policy churn

Opportunities:

- UKG and 'Levelling up' agenda as a catalyst for collaborative bidding for competitive funding
- Collaboration as a pragmatic approach to multi-level governance issues
- Easier to work together where national, local and regional policy are aligned

how on earth can you deliver a transformational innovation programme in that period of time? It's absolute madness."

(GMCR, Business Representative stakeholder).

Both Glasgow and Manchester reported the increasing need for collaboration and a consistent approach locally under these circumstances.

"Doing stuff about that is really long term and it requires complex partnership work, and an innovation district can't do that all by itself, but what we can do is work in partnership with the City Council about how we connect in what's happening in the innovation district to our neighbouring communities"

(GMCR, Higher Education Institute stakeholder).

Partnership working was identified as key and, while complex, collaboration is seen as a pragmatic approach to the challenges of current circumstances more broadly.

"I think having those multiple partners and having multiple opportunities, you know, good relationships with each of them opens doors, it presents opportunities…. You know, it's going to be more difficult., budgets are tight, so there has to be more collaboration across the board"

(GCR, Business Representative stakeholder).

The desirability of alignment across the multiple levels of governance was a common refrain. It was widely noted that it is easier to work together where there is shared alignment between national, local and regional policy.

"I think that there's quite a strong alignment ... within the policy field, I think when I meet Scottish Government civil servants, there's a generally assumed foundation of a shared policy"

(GCR, Public Sector stakeholder).

This remains an area where further improvement is being sought.

"... going back to some of the cultural challenges that we face at the moment… that sort of collaborative approach doesn't exist at the moment. So that is very much part of our ongoing pitch to national government in that we need a more strategically aligned relationship and approach. And I would say there's probably no better example of where that could have a transformational impact than around the innovation agenda, but I think at the moment the realities are the structural setup means that there's quite a significant divide still between what national bodies do and what the local bodies do"

(GMCR, Business Representative stakeholder).

5. IMPLICATIONS FOR POLICY, PRACTICE AND FUTURE RESEARCH

In looking to the future and building from the insights offered by our participants, there are a number of key considerations that we would wish to highlight.

1. **The future data needs of city regions.** Participants identified both a lack of relevant data and limitations in capability to analyse these data. In extending and developing the 'data agenda', we need to consider what datasets are required and for what purpose? It is often the case that the data deemed most relevant are conventional economic data (GDP and GDP per capita etc) and those on the traditional sectors of a region. As city regions seek to extend the inclusive nature of innovation and economic development, no less important are the emerging and foundational sectors, the micro firms and the entrepreneurial agents that are not part of the 'top table' of regional stakeholders and the data on these emergent activities need to be captured from novel sources. Addressing future data needs will require an intelligent and reflective approach to both the analyses of existing data and the identification of data needs.

2. **Measurement and evaluation.** An intelligent approach is also needed to the measurement and evaluation (M&E) of data not least to ensure new innovation policies are not constrained by outdated metrics. Historically, regional policymakers and practitioners have been inclined to see M&E as an externally imposed audit function – a command and control tool to police compliance. This can mean that these data are not generated and analysed in ways that inform policy. A judicious balance is needed between learning from past successes and failures to improve or change policy, while also recognising that some effects will be difficult to identify in the short-term because of the causality problem. The logic of diagnostic monitoring over appropriate periods of time – moving past complaints of short-termism – could make an important contribution, helping to ensure that learning and data analytics are integral parts of the policy making process, rather than an event used periodically to justify shifts in policy guidelines.

3. **Addressing multilevel policy challenges.** One of the most difficult tasks in place-based analysis is to understand the respective contributions of local and extra-local factors because the interplay will be unique in each case. In this comparative study of three city-regions in three different national contexts, it is clear that the multilevel polity presents both opportunities and obstacles. There are opportunities in terms of new sources of funds (from, for example, UKG and UKRI) which are seen as prompts to more active collaboration. But the form that these funds take may pose obstacles if they encourage competition not cooperation, are seen as overly prescriptive as to what is eligible, or indeed prescribe what counts as legitimate in city deal activity.

4. **Understanding the multilevel polity across the UK.** The situation is highly nuanced in the three case studies: it is a bilateral political game in the case of England, where Manchester interacts directly with UKG, while it is a more complicated trilateral game in Scotland and Wales, where Cardiff and Glasgow have to navigate between their national governments and UKG. Alongside this, Cardiff and Glasgow also have

to deal with the tensions between the national and subnational models of devolution; these tensions deserve to be given more prominence because they have been seriously under-estimated in policymaking circles and are currently under-researched in the academy.

5. **Designing policy mixes that work for the whole of a city region.** Each of our cases has a mix of economic circumstances within the city region and a perennial policy challenge remains: investing in the areas with the greatest economic potential versus investing in the areas of greatest social need. Thus, a tension is observable between city centre focused activity and investment and the desire to ensure widespread and inclusive outcomes across the whole of the region. Broader conceptions of innovation to embrace micro firms and the foundational economy and attention to the 'innovation commons' of a region to nurture the future pipeline of skills and build local resources are crucial complements to cluster focused investments that are often city centred.

6. **Developing horizontal linkages.** One of the most conspicuous institutional shortcomings of devolution (and this is especially germane to the subnational model of devolution) is the relative absence of horizontal linkages to enable city regions to engage with and learn from each other. The lack of a UK-wide network to identify and disseminate good practice means that each jurisdiction is in danger of being a self-referential silo. Personal networks might help to temper this problem, but this is a partial solution which occurs despite and not because of the devolution settlements (learning through city deal gateway mechanisms is another potential learning channel). The UKRI investment in a Local Policy Innovation Partnership network and in particular the role of the strategic coordinating hub(s) could help to alleviate the silo problem and create a more open data-sharing culture that incentivises places to collaborate rather than competing with each other.

APPENDIX A - LIST OF INTERVIEWEES

Manchester

Chambers of Commerce

Fujitsu

Greater Manchester Combined Authority

Manchester University

MIDAS

The Growth Company

Cardiff

Bouygues

Cardiff City Region

Chambers of Commerce

Delio

Life Sciences Hub Wales

Monmouthshire County Council

Welsh Assembly Government

Glasgow

Chambers of Commerce

City of Science

Glasgow City Council

Glasgow City Region

North Lanarkshire Council

Scottish Enterprise

Strathclyde University

APPENDIX B - INTERVIEW SCHEDULE

1. How has innovation policy (developed to promote economic growth) provided economic development benefits (for all?) across the city region?

- What are the key innovation policies driving the region's strategy and action plans?

- How are these policies implemented in practice?

- What evidence is there of (economic) impact/ benefit (for whom?)

2. How far are these policies embedded within effective processes and mechanisms of engagement?

- Asking stakeholders what the policies, strategies and initiatives mean to them

- What evaluation mechanisms and processes are utilised and how are businesses and HEIs mobilising and operationalising around them?

- How engaged are citizens with the policies and initiatives related to the City Deal?

- In what ways and through which mechanisms are multiple

stakeholders (businesses, HEIs, policy makers, citizens, other) working together towards shared commitments to achieve the goals and actions within the city region deal? How important are collaborative/ partnership working towards shared commitments to the achievement of the city region's goals and aspirations?

3. To understand if and how these engagement processes ensure robust local policy making and an effective policy mix

- How is innovation defined and interpreted in each of the city regions?

- To what extent are rural and non-urban areas / stakeholders involved and integrated into city region initiatives and programmes? How do their experiences differ from more central urban areas?

- In what ways have decision-making powers been decentralised across the city region?

4. To develop a better understanding of business engagement within these local policy initiatives.

- Ask business stakeholders and those representing them their experience to date of participation/ involvement in forming and implementing innovation policy.

- How engaged are businesses and HEIs with the policies and initiatives related to the City Deal? (specifically those on the peripheries?)

Further lines of enquiry include questions around;

- What issues and challenges (opportunities?) do multi-level governance structures present and how are these navigated?

- Future plans, ideas and scenarios for the city regions?

REGIONAL ECONOMIC GROWTH THROUGH INNOVATION POLICY AND BUSINESS ENGAGEMENT:

EVIDENCE FROM THREE UK CITY REGIONS