

Polycentric powerhouse

Driving forward the north of England's economic growth by allowing local areas to focus on and trade in their specialist strengths via a new approach to strategic planning and better rail connectivity.



Foreword

Unleash collaboration

The original Northern Powerhouse vision was based not on the individual strengths of the city regions but on our collective economic potential. From the early days of the Cities Growth Commission, civic and business leaders alike were encouraged to reimagine Sheffield as East Manchester, and Manchester as West Sheffield. Someone from Hull could consider job opportunities in Leeds, or even Liverpool. This may seem a bold concept but an ambitious, integrated transport network could turn this into reality for future workers.

We can unlock huge economic opportunities through pooling our prime capabilities in digital, green energy, advanced manufacturing and health innovation – the drivers of the northern economy. In health innovation, for example, the strengths of the Oxford Road Corridor in Greater Manchester are complementary to the those of the emerging innovation districts in Leeds (such as MedTech) or in Bradford. This reinforces the case for northern places to specialise in collaboration with each other, not in competition.

The vision? For an investor from India, Japan or Korea, say, to see the Northern Powerhouse as a single economic entity. Genuine world-class capability does not come from poorly replicating our neighbours' strengths, but drawing on respective strengths to maximise the sum of our parts.

Commuting in the north is not fit for the 21st century. For many people, driving along congested motorways is preferable to the slow, unreliable trains currently – poorly – serving the north's cities and towns. This restricts the movement of workers crossing the Pennines or travelling between Newcastle and Teesside. Forging closer rail transport links would expand our labour markets and drive up productivity.

We must build a more ambitious, more prosperous and more equal north – able to improve the life chances of those born here and unleash their full potential.



Henri Murison
Director, Northern
Powerhouse Partnership

Seize the opportunity

This paper is the second in a series exploring the impact of major rail investments. Our first paper, 'How to kickstart a northern renaissance', argued that linking up Leeds, Bradford and Manchester would more than double the size of the available labour market and unleash the productive economic potential of cities and towns along the route, raising productivity by 6% and causing GVA to rise by £22bn by 2060.

This new paper builds on the first and makes a broader point, that improved connectivity is just the start of unlocking the economic, social and cultural potential of the north of England.

By bringing the cities and towns of the north closer together, improved transport and wider links will enable them to function as an interconnected network, rather than separate places.

Instead of each place making decisions in isolation, strong regional connectivity enables them to act as part of a system, trading skills and services, focusing on those things they are best at, pursuing economies of scale, concentrating expertise, and optimising the delivery of services such as healthcare and education.

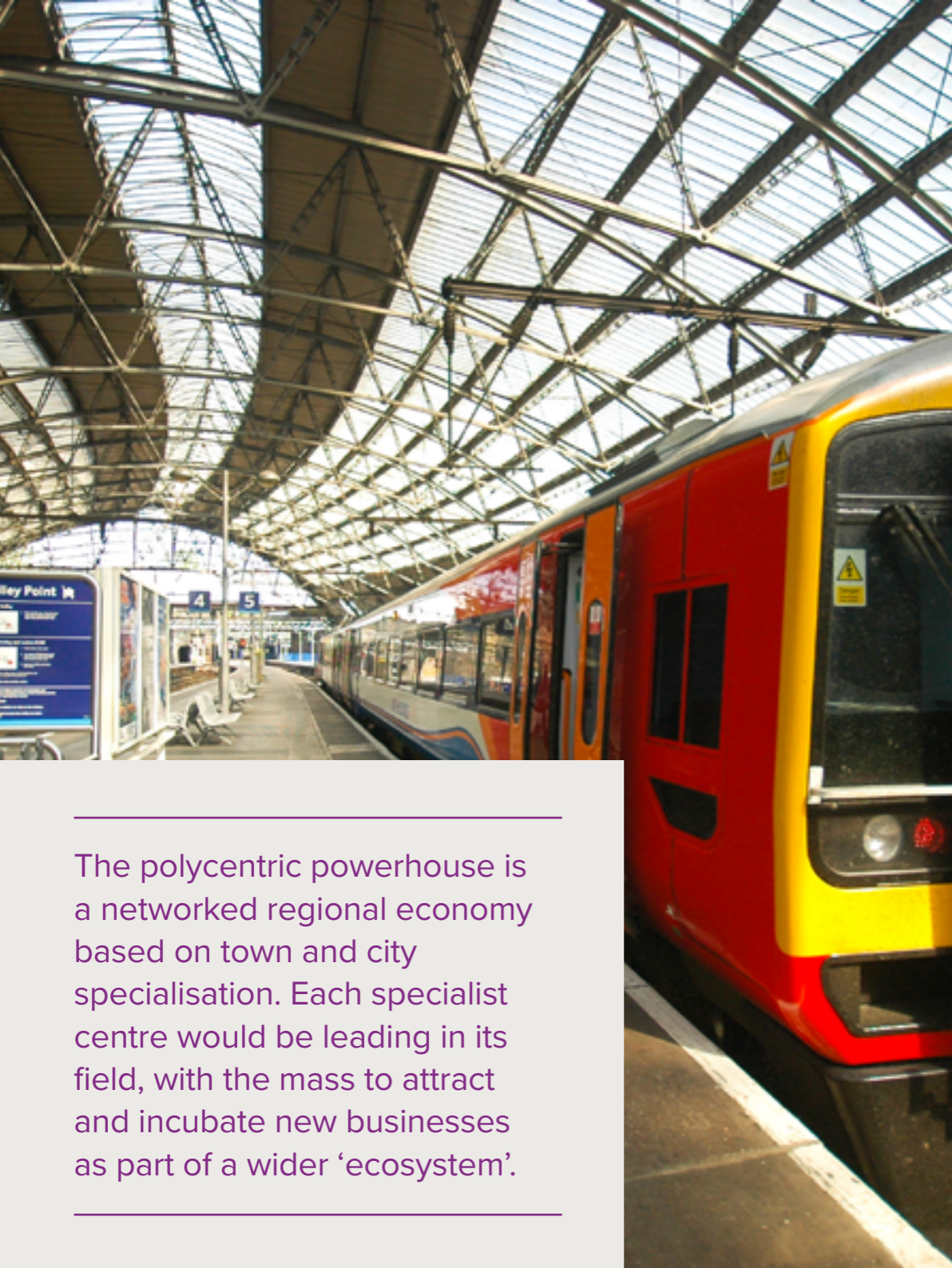
Improving access between towns and cities will deliver the biggest possible uplift in economic activity, closing the productivity gap between the north and London and the southeast, and delivering on the promise of 'levelling up'.

Taking advantage of this opportunity to specialise and trade with one another will require authorities to adopt a new approach to strategic planning. Councils, healthcare and education providers, cultural bodies and the private sector have to deepen their understanding of themselves as part of a region-wide whole. This change in mindset may be challenging, but as a business with strong roots in the north of England and focused on innovative approaches to planning and economic development, Mott MacDonald is ready to support the realisation of this vision.

The prize for all of us who care about this region is great. We must not pass up this once-in-a-generation opportunity.



Cathy Travers
Managing director for the UK
and Europe, Mott MacDonald



The polycentric powerhouse is a networked regional economy based on town and city specialisation. Each specialist centre would be leading in its field, with the mass to attract and incubate new businesses as part of a wider 'ecosystem'.

Executive summary

Better rail connectivity in the north of England is a key element of the government's levelling-up agenda. A fully delivered programme of investment will include the Leeds-Bradford-Manchester link, other strategic and local transport links and improved digital infrastructure. This will bring a step-change in terms of a much larger aggregated labour market, bringing businesses and consumers closer together, so reducing the productivity gap with the southeast and raising economic output.

However, improved connectivity alone is not sufficient to deliver the full economic and social benefits associated with levelling-up. A new approach is needed to strategic planning of the economy and services including healthcare and education.

The government's white paper, 'Levelling up the United Kingdom', sets out a new programme of devolution that should give localities across the country, including in

the north, greater powers to pursue their own agendas and set their own objectives. This paper argues that individual towns and cities in the north should opt not to plough their own furrows but instead focus on their role, now and in future, in a joined-up pan-regional system, building on established partnerships such as the Northern Powerhouse.

In the 'polycentric powerhouse' that will result, each locality would not need to provide a platform for every type of business. Instead, companies, education, health and other services sited in different places would function together. Each place would focus on its local economic, culture, health and education specialisms, and trade products and services with one another via improved transport and other links.

This is how to achieve the most productive and impactful economic and social change across the Pennine region and the whole of the north of England.

A polycentric north

In this paper we examine the opportunity to create a ‘polycentric powerhouse’ by linking cities and towns across the north, and empowering them to build on current strengths – and grow new ones.



In October 2021 we presented the first in a series of papers exploring the impact of major investment in rail infrastructure in the north of England. That paper, ‘**How to kickstart a northern renaissance**’, set out the huge economic and social benefits that would be derived from a fast rail line linking Leeds, Bradford and Manchester creating what we termed a ‘megatropolis’.

We have consistently acknowledged that building a new railway through the Pennines would be costly. But in our view, the benefits are such that it should remain a key ambition for the future, building on the welcome programme of investments set out in the Integrated Rail Plan (IRP).¹

Further improvements to transport links across the north, for example by providing better connectivity to Bradford as well as the east coast, should also be part of plans for the coming years. Better digital connectivity will be important too.

This paper moves on from the debate about rail investment to examine in greater depth the opportunity for differentiation and specialisation identified in our initial paper – the chance to link cities and towns to create a ‘polycentric powerhouse’. The timeliness of this analysis has been re-emphasised by proposals for increased devolution in the government’s ‘Levelling up the United Kingdom’ paper. We argue that co-ordinated use of these new powers is essential if the maximum benefits are to be delivered.

1. DfT, Integrated Rail Plan for the North and Midlands, 18 November 2021

Local strength for regional gain

In this paper we focus on the Pennine region, home to 10M people in Liverpool, Manchester, Leeds, Sheffield and nearby towns and cities. We will look at locations to the east and the north in later papers, including the east coast ports, the northeast and the Lake District. However, the thrust of what we say in this paper would apply across the whole of the north of England, the area referred to as the Northern Powerhouse.

Our argument is that a new, even more co-operative and collaborative, approach is required to economic planning and the delivery of other public services such as in education and health, based on improved connectivity via new and better rail links. If this was to be adopted by the cities and towns of the region it would enable them to trade with one another on the basis of their individual strengths, allowing the highest possible 'levelling up' when it comes to productivity and economic growth.

At present, if accessing a service, amenity or industry in a neighbouring metropolis is hard, then individual towns and cities will attempt to reproduce it locally – or live with deprivation.

Strong local and regional transport links enable access and remove the need to replicate services, amenities and industries. This extends to public services like healthcare and education too, with better connectivity presenting an opportunity to plan and manage a resilient cluster of regional services. Proper exploitation of the improved transport links will allow each urban area to focus on areas where they have leadership and expertise, and are most productive.

This is our definition of the polycentric powerhouse: a networked regional economy based on town and city specialisation. Each specialist centre would be leading in its field, with the mass to attract and incubate new businesses as part of a wider 'ecosystem'.



The polycentric powerhouse: a networked regional economy based on town and city specialisation.



Better transport links and enhanced digital connectivity would provide access to the workforce skills and capacity of the whole Pennine region – approximately equivalent to the population of Greater London.

Stronger trade

It is important to note that we are not advocating redistribution of businesses. This would be hard to achieve and would disrupt established supply chains. Instead, we anticipate organisations choosing to move over time, if appropriate, as the benefits of grouping together become clear.

We are also not suggesting that new formal governance structures are required. We envisage that local authorities across the north will take advantage of new devolved powers to make their own decisions about how to move forward. This will result in voluntary collaboration to create the polycentric powerhouse because it is locally beneficial. How that collaboration takes place will be a matter for the authorities themselves.



Better transport links, as envisaged in the IRP and future rail investment proposals, combined with enhanced digital connectivity, would provide employers with access to the workforce skills and capacity of the whole Pennine region – approximately equivalent to the population of Greater London.

And workers would gain access to far greater employment choice and opportunity. If linked to a new and more collaborative approach to strategic planning this improved connectivity would enable towns and cities to trade more effectively within the region. And it would enable the region to trade more successfully nationally and internationally.

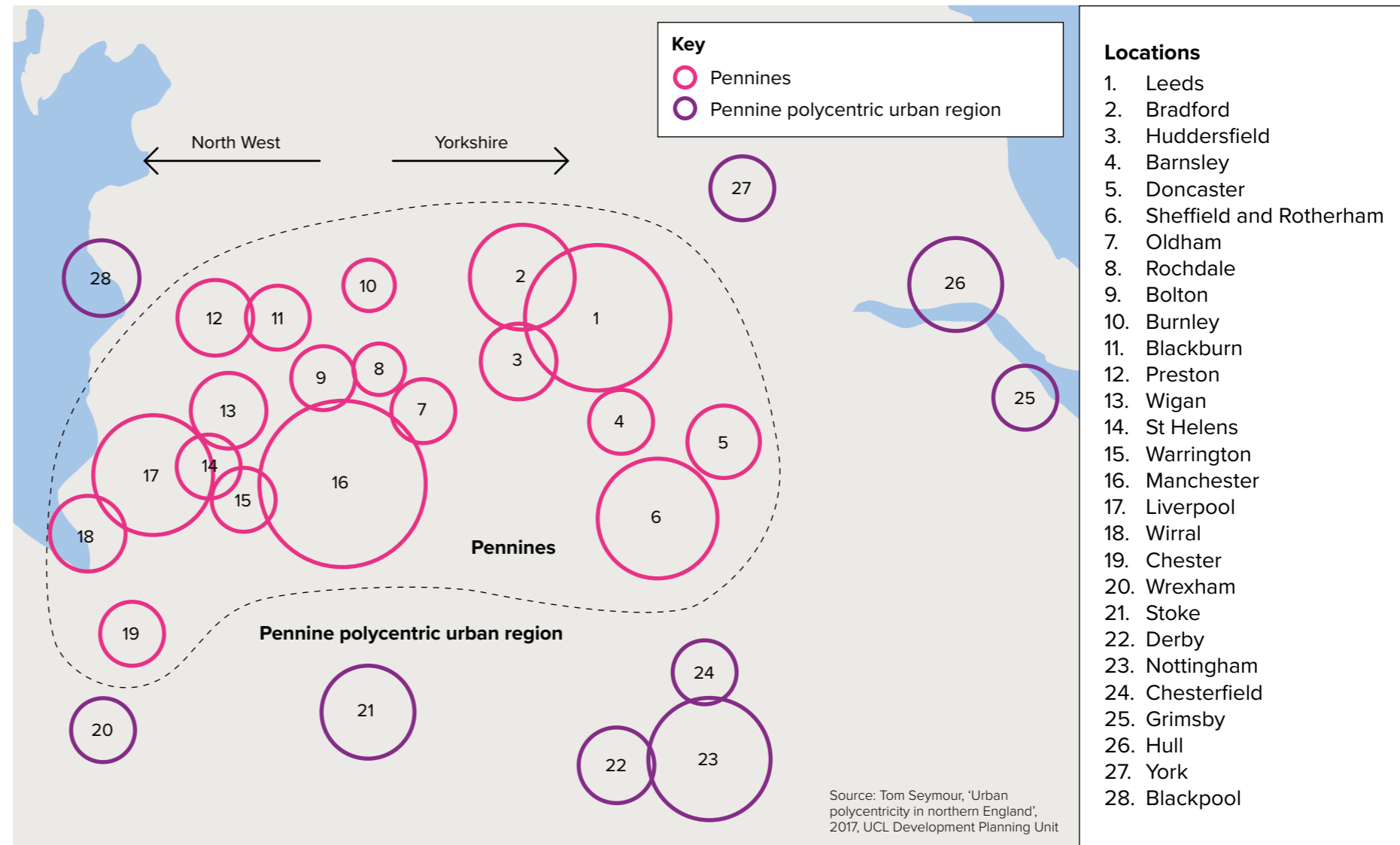
Polycentric future

The Pennine region is characterised by having many urban centres that are within short distances of each other yet separate. This polycentric morphology was established during the industrial revolution, with each town and city centred around a local specialism. The region became renowned for its distinctive industrial clusters and supporting infrastructure and services.

A new polycentric Pennine region would recreate in modern form that interdependency and symbiosis. The polycentric development model, enabled by improved connectivity, offers the opportunity for northern towns and cities to thrive in markets where they have competitive advantages whilst enjoying scale beyond their local area. Businesses can gain the benefits of scale and agglomeration; specialist manufacturers and service providers could access bigger sales and labour markets and be supported by stronger supply chains.

This diagram illustrates the relative size of populations across the region, ranging from 89,000 in Burnley to 1.74M in Manchester.

Strategic plans should focus on the specialisms of each place and on making it easy for businesses and citizens to access them, wherever in the region they are based.



6%

increase in productivity

1.5%

rise in employment rate

8%

increase in GVA in the north over 10 years

£22bn

uplift in GVA by 2060



Closing the GVA gap

There is a gap of some £5000 per capita in gross value added (GVA) between the north and the UK average. The GVA gap between the north and London is approximately £27,000.² Our first paper made the case that better connectivity between Leeds, Bradford and Manchester would remove labour market constraints to growth, potentially increasing productivity by 6%, raising the employment rate by 1.5% and increasing GVA in the north by 8% over 10 years. We estimated that would be equivalent to a £22bn uplift in GVA by 2060, from just that one element of the Northern Powerhouse Rail programme.

Developing a fully functioning polycentric Pennine region could reduce the per capita GVA gap further, adding many billions of pounds to the GVA of the north and of the UK.

² Gross Value Added (GVA) is the standard measure of output at sub-national level, corresponding, roughly, to (national) GDP

Time for a turn-around

Creating a polycentric powerhouse to realise the full economic and social potential of the north requires strategic economic planning to see each town and city as part of a collective, not treat it in isolation.

Not every city needs to have a strong financial sector, professional services cluster, digital industry or health hub if these functions can be provided effectively and productively elsewhere. Strategic plans should focus on the specialisms of each place and on making it easy for businesses and citizens to access them, wherever in the region they are based.

This involves achieving integration with the correct infrastructure – digital communications, transport and especially rail systems, and education, health, housing and social services. With the right enabling infrastructure, economies of scale become possible across the whole region.

The key enabler is better rail connections that will be brought by the IRP and subsequent rail investment projects, providing faster, more frequent, more reliable and lower carbon connectivity between the north's urban centres. It will allow better matching of skills and suppliers to business and social needs, and improve links for short- and long-haul freight – together creating a more resilient economic base.





Cluster specialisation has stimulated entrepreneurial activity and new business start-ups, supported by a suitably skilled labour force.

Overcoming constraints

Limited transport connectivity across the Pennine region is a root cause of the productivity gap between it and the rest of the UK, particularly London. For employers and workers alike, it limits options and opportunities: businesses must get by with the local pool of skills and suppliers; workers must make the best of the local jobs market.

Census data show that in London 500,000 commuters travel 30km or more to work. Only half as many do in the six city regions of the north, combined. The poor quality, slow speed and high cost of rail travel between the major centres are regularly cited as reasons for the disparity.

Limited transport connectivity also hampers the flow of business services.³ For example, Manchester and Leeds both have large financial and professional services sectors that are focused on their respective hinterlands, with limited trade between them.

The north's fragmentation hampers the competitiveness and growth of specialist businesses. Additionally, the 2016 Northern Powerhouse Independent Economic Review (NPIER)⁴ highlighted a shortage of high-skilled workers and too many low-skilled workers; under-exploitation of innovation and technology; low levels of business investment; and low levels of enterprise, measured by business start-ups per capita.

The north suffers from persistently above average rates of unemployment. In a polycentric future, towns and cities across the Pennine region have the potential to become engines of innovation, economic change, and development that transcend their administrative boundaries.

Agglomerated cities in polycentric regions naturally trade and do business with other cities, as urbanist Bruce Katz has pointed out.⁵ Well-linked polycentric regions are characterised by flows of capital, ideas, people, services, and goods. They influence the development of national economies.

Improved connections will bring other benefits. They make possible new approaches to the delivery of health services including the creation of disaggregated campuses that will pave the way to improved outcomes for patients as well as attracting investment in medical spin-offs. There are benefits for skills too, allowing improved access to universities and further education, and enhanced links with employers – facilitating the development of green skills needed for a future in which we 'build back better'.

3. Seymour T, Urban polycentricity in northern England: economic catalyst or chimera? UCL DPU Working Paper 2017

4. Northern Powerhouse Independent Economic Review, 2016

5. Bruce Katz, Speech to Global Cities Initiative, Brookings Institute 2013

Co-operation and competition

The Northern Powerhouse Independent Economic Review identified several key capabilities across the region.

‘Prime capabilities’ include advanced manufacturing, the digital economy, energy, and health innovation. They are supported by ‘enabling capabilities’ in financial and professional services, logistics, and education services.

These capabilities are world-class and internationally competitive. But they are not evenly distributed across the north. Economic development plans must recognise local specialism, productivity and potential for development.

For example, not all the cities of the north should focus on advanced manufacturing, but the Sheffield city region can and should. And creating health campuses and educational hubs can bring benefits from concentrating expertise and creating economies of scale.

A study of the polycentric Randstad region of the Netherlands⁶ shows that cluster specialisation has stimulated entrepreneurial activity and new business start-ups, supported by a suitably skilled labour force. Across the Randstad, towns focus on different industrial and service sectors, but operate with a high degree of economic interdependence.

Regional connectivity underpins the success of the Randstad and is needed to realise the vision of a thriving, economically competitive, polycentric Pennine region.

6. Clustering of Economic Activities in Polycentric Urban Regions: the Case of the Randstad; Kloosterman and Lambregts, Urban Studies 2001

Polycentric development, underpinned by better rail connections, would enable an improvement in job density in the Sheffield city region. If it increased to match Greater Manchester’s, approximately 80,000 new jobs could be created.



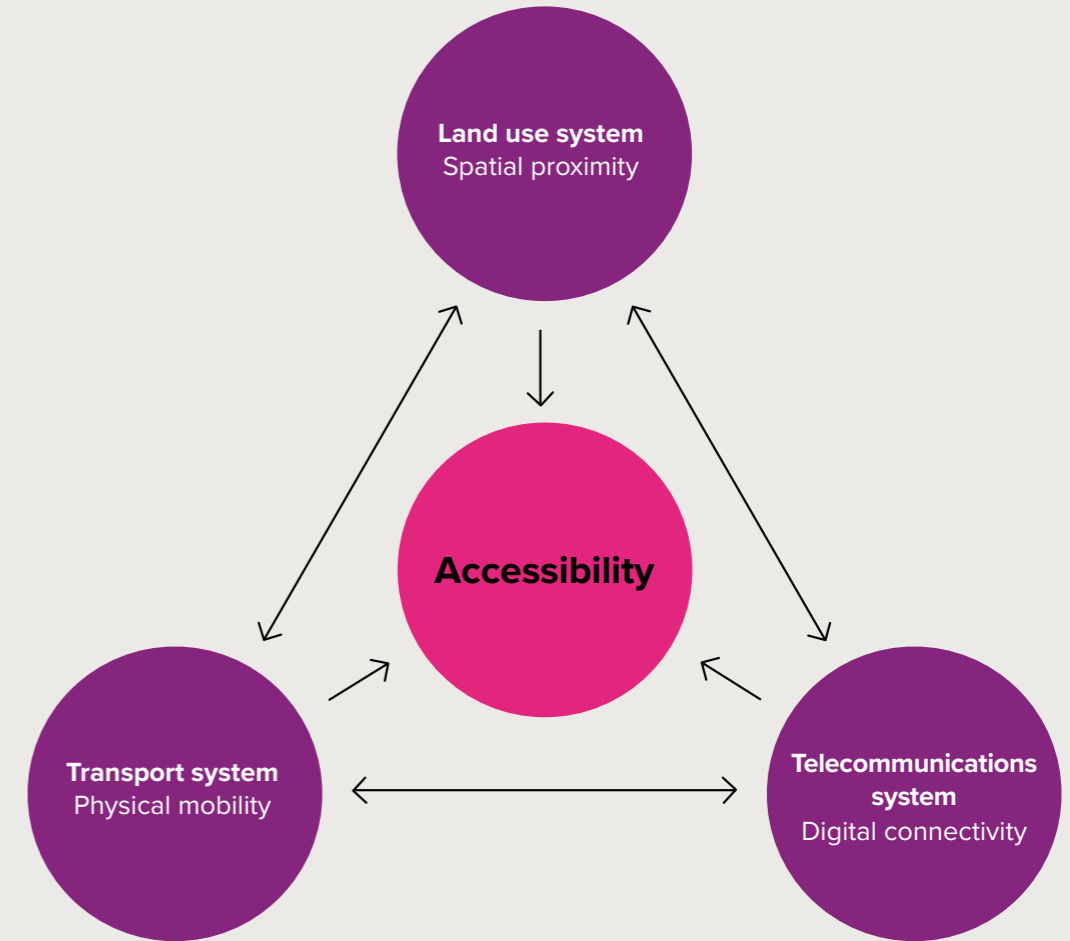
Other examples include the ‘golden triangle’ of Oxford, Cambridge and London, in which universities and science-based businesses have created a dynamic and highly productive cluster showing what scale and specialisation can deliver. London benefits from an ecosystem of world-leading acute health providers. And in the north the N8 Research Partnership has brought together leading institutions with very significant results.

In addition to an effective transport system, to provide physical mobility for people and goods, polycentric regions require a supportive land use system and better digital connectivity. Indeed any plans for socioeconomic development in the north should take account of the shift in workplace practices fast-tracked by the

pandemic, emphasising the need for enhanced digital access as well as transport connections to employment, education or health services.

Together transport, land use and digital connectivity govern access to skills and resources, information and services, jobs, education and training, and all other essentials for increased productivity and economic and social opportunity.

It is essential that plans for economic development and social levelling-up address all dimensions – and that education, skills development, healthcare, housing, social services and wider civic needs are addressed in parallel. Only if this happens can the benefits be maximised.



Sheffield: Is socioeconomic development centred around green industry and advanced manufacturing possible?



Sheffield city region is a core part of the Northern Powerhouse, home to 1.4M people and with an annual economic output of over £28bn (2019).

But economic productivity measured by GVA per full time employee (FTE) is below both the national average and that of similar Pennine region cities.

Sheffield has a smaller urban core than UK peers such as Manchester, Glasgow, or Leeds. The region around Sheffield has a mining past that has left a pattern of dispersed communities and smaller town centres like Barnsley, Doncaster and Rotherham.

Less than optimal connectivity across the city region and in-and-out of Sheffield city centre limits the pool of available labour, businesses and consumers. Notwithstanding its two successful universities and a proud manufacturing heritage, the city centre and city region lack private sector jobs and firms.

Sheffield city region's strategic economic plan sets out an ambition for accelerated growth, especially in 'green' and high productivity industries. It is an important document addressing location-specific problems and opportunities, with social fairness a core concern.

The plan discusses the need to:

1. Empower the leadership of the city region
2. Make Sheffield attractive to business
3. Galvanise the economy with one or more mega-projects
4. Strengthen transport infrastructure

Sheffield city region has core strengths in advanced manufacturing thanks to its industrial heritage, its universities and an existing cluster of companies. There are further cluster opportunities around a new teaching hospital and the airport. It now needs key supply-side factors to attract investment and achieve growth – skills, commercial and domestic property supply, utilities, attractive urban environments and effective transport, as well as a co-ordinated approach to the delivery of public services such as education and health.

Improving rail connectivity across the Pennine region and strengthening transport infrastructure within the Sheffield city region would enable agglomeration and economies of scale, and bring wider social as well as economic advantages, yielding much greater value than conventional cost-benefit analyses suggest.

Despite many statistical similarities between Sheffield city region and Greater Manchester there is a major difference in job density: Greater Manchester's is 0.86, in line with the national average, but Sheffield city region's is just 0.73. Job density is the number of locally available jobs divided by the local number of working age people (16-64). Sheffield city region suffers from a comparative lack of local jobs.

Unlocking Sheffield city region's potential by pursuing polycentric development, underpinned by better rail connections, would enable an improvement in job density in the Sheffield city region. If it increased to match Greater Manchester's, approximately 80,000⁷ new jobs could be created.

In this context, the Integrated Rail Plan is disappointing for Sheffield city region. It will benefit from improved railway links to HS2 via East Midlands Parkway and upgrades to the Midland Mainline, but its links to Leeds, Manchester and the rest of the north will not be improved. This is likely to constrain Sheffield city region's ambitions for socioeconomic development focused on green industry and advanced manufacturing.

Improving connectivity regionally and within the Sheffield city would enable agglomeration and economies of scale, yielding much greater value than conventional cost-benefit analyses suggest.



7. The absolute gap is 274,000 jobs, 80,000 is pro rata to SCR's smaller population.

Liverpool: Can the city region capitalise on its heritage and leading edge in green energy?

Liverpool city region has benefited from an extraordinary cultural revival and the renaissance of its waterfront. It has five universities. It is home to tech-focused developments such as the Hartree Centre. And it has strong capabilities in offshore wind energy and the emerging hydrogen economy.

But local leaders recognise that 'transformation' is required to exploit the city region's advantages to the full. At £32bn, Liverpool city region's economy is the same size today as it was a decade ago.⁸ The aspiration for the decade to come must be for clean growth in the range of 2%-3% per year, and improved rail infrastructure is central to achieving this desired transformation.

Enhanced two-way traffic between Liverpool and Greater Manchester and better connectivity across Liverpool city region are required to give workers access to jobs, widen the pool of skills available to



employers, support a co-ordinated approach to the delivery of education, health and other services, and attract inward investment.

At the moment, 68%⁹ of commuter journeys in the city region are by car. Liverpool Combined Authority's 2019 transport plan notes: "the (rail) network is under pressure from a capacity and resilience perspective."

It is not surprising that the first project listed in Northern Powerhouse Rail's investment programme is improving the capacity and frequency of links between Liverpool and Manchester Piccadilly, via Warrington and Manchester Airport.¹⁰

Like Sheffield city region, growth in the Liverpool city region relies on becoming a great place for business investment, economic stimulation from investment in major projects and improved transport infrastructure, facilitated by empowered leadership.

Proposals in the IRP to twin-track the route from Liverpool to Warrington, Manchester Airport and Manchester are welcome. The improvements will connect Liverpool city region to HS2 and provide high-speed travel to West Yorkshire. This, plus the multiple smaller investments detailed in the Liverpool Combined Authority transport plan, could unlock the dynamic effects of agglomeration and economies of scale.

8. Liverpool City Region Combined Authority, March 2020, 'Local Industrial Strategy – Draft', p15 – the figure is for the decade to 2017

9. Liverpool City Region Combined Authority, March 2020, 'Local Industrial Strategy – Draft', p24

10. Transport for the North, 'Strategic Transport Plan', p11



Delivering on the true potential of a polycentric Northern Powerhouse

Creating a polycentric northern powerhouse requires that strategic planners view cities and towns as part of a regional whole.

The greatest benefits to productivity will be achieved by prioritising individual strengths and enabling trade in services and products across the region and beyond.

As we described in our previous paper focusing on the proposed new link between Leeds, Bradford and Manchester, improved connectivity brings markets closer together, increases the effective size of the workforce and improves access to employment. It would unleash the potential of the young and entrepreneurial

population of Bradford in particular. But, as this paper describes, better links also allow for better co-ordination, economies of scale and concentration of expertise in the delivery of public services. The resultant rise in business activity can transform the economy of the Pennine region and the wider north.

Many areas across the north of England are already benefiting from greater devolution of powers. If the government's levelling-up paper delivers on its promises, devolution is likely to

deepen and to spread to other cities and towns in the region. It would be regrettable if this led to separation and homogenisation, with each place pursuing its own goals, rather than authorities across the region finding ways to work together to ensure that their strategic planning takes account of their roles within the whole system.

What we are proposing is not wholly new: in preparing for Northern Powerhouse Rail and the Integrated Rail Plan local authorities across the north had already started to consider and act

upon their position in a joined-up regional system. But, as connectivity improves and greater devolution is delivered, this can now go further if localities focus on their specialisms. Polycentrism enables joined-up decision-making on the basis of local business, cultural, educational and healthcare strengths, and how they can be traded with other places.

This would be the best way to deliver a dynamic, economically-flourishing, polycentric north and truly level up.

Opening opportunities with connected thinking.

Talk to us.

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