Emerging Tech in the West Midlands

Executive Summary

Innovation has been a fundamental driver of economic growth since the Industrial Revolution, but in today's advanced economies, emerging technologies are increasingly major influences on the creation of wealth and employment, driven by scientific and digital expertise and underpinned by data.

The UK has been hugely attractive to FDI decision-makers for decades, but all too often London has dominated discussions surrounding site selection due to the sheer scale of its emerging tech sector.

This report aims to provide a knowledge base for the economic development agencies of the West Midlands when implementing the region's growth and inward investment strategies over the next three years. Its purpose is to obtain an independent and quantitative understanding of the key attributes of the West Midlands' emerging tech ecosystem, its position within the UK and potential underlying innovation drivers.

The report was commissioned by the West Midlands Growth Company (WMGC) – the region's investment promotion agency and led by London Economics and glass.ai:

- London Economics is one of Europe's leading specialist consultancies in economics and policy and has attracted an international client base by its use of analytical tools and strategic evaluation.
- Glass.ai has developed innovative AI-based technology which understands written language at scale, capable of reading millions of corporate sites, news platforms, academic sources, government data and much more to build a comprehensive picture of company activity and industrial clusters.

Furthermore, the analysis provides a comparative assessment of overall breadth of emerging technology by benchmarking the West Midlands against the UK's other core city regions competing for innovation-based FDI, namely in the areas of tech & digital, data-driven healthcare, future mobility, advanced manufacturing, modern services and smart cities.

Supplementing this, the analysis draws on the relative depth of each region's Higher Education (HE) cluster regarding research and teaching across emerging tech specialisms.

Traditional business statistics and Standard Industrial Classification (SIC) codes have limitations and can be lagging indicators of sectoral change and potential, but this research uses a new methodology, based on mining of the latest data to capture economic activity in technology sectors across the UK's regions.

The core conclusions of the resulting 60-page 'Emerging Tech Capabilities in the West Midlands' analysis are below.

Data sourced and collated by glass.ai via its proprietary 'crawler software' revealed that emerging technologies were most strongly represented in four city regions outside of London: the West Midlands, Manchester, Leeds and Cambridge-Peterborough.

DIVERSIFIED EMERGING TECH

Comparative analysis across the UK's core city regions outside London shows the West Midlands has established a leading overall position across the breadth of emerging tech, with the highest number of companies (2,946), followed by Manchester (2,020) and Leeds (1,594).

Unlike many of the other city regions, the West Midlands is not dominated by a single large tech company or sector. A deep dive into the UK's 'tech and creative' sector reveals the West Midlands is the most established region across 10 out of 13 niches within that sector.

It provides a classic example of the benefits of agglomeration economies in relation to tech and creative – the largest of the West Midlands' emerging tech industries.

- In addition to being highly concentrated, the area's technology industry is highly diverse, principally spanning digital transformation, gaming, immersive tech, process automation and software development.
- Software development is the largest niche, with 468 companies, followed by 329 in telecoms, 192 in cloud computing, 88 in process automation and 78 in cyber-security.
- The West Midlands has 212 companies operating in modern services technologies (fintech, professional services-tech and proptech) and 237 in the smart cities' sector, with proptech the most prominent in the former and construction tech in the latter.
- Excluding London, the West Midlands is responsible for 27.8% of the UK's telecoms roles and 23.8% of software development roles.

The smallest emerging tech sector in the analysis of the West Midlands is data-driven healthcare, which falls below other comparative regions. Cambridge-Peterborough has the most significant data-driven health sector, with the highest share of companies in all four related sub-sectors.

The dominance of the West Midlands in emerging tech outside London and the South East is further underlined by the latest employment data, with 77,804 working in the sector as compared to just 46,401 in the second-placed location, Manchester.

INNOVATION LEVERS

The region's critical mass is partly attributed to its supportive infrastructure. The report reveals the number of accelerators in Greater Birmingham and Solihull per 10,000 businesses (1.43) is higher than anywhere else in the UK, including London (1.32), highlighting the area's long-term prioritisation of entrepreneurship.

The region's emerging tech ecosystem also benefits from a well-developed system of R&D support. Analysis of its collective research and teaching activities (as measured by web content and published data) shows it leading all other regions in five out of our six target sectors. This leading academic position is mainly driven by the region's two Russell Group universities, University of Warwick and University of Birmingham, which are both significant players across all emerging tech sectors analysed in this study.

Competition for talent within emerging tech sectors, and between core city regions, is fierce and upskilling is the most powerful catalyst for higher productivity, so the power of the West Midlands in Higher Education will be crucial in attracting future investment.

Equally, the study's science and innovation audit demonstrates that this region is successfully engaging in complex cross-sector networking and collaboration between its public and private sectors, and in particular between universities and research and technology organisations.

The report concludes that:

"In 2019, the West Midlands region invested approximately £2.4 billion in R&D which accounts for 9.1% of the UK total. The number of full-time equivalent employees in the West Midlands engaged in R&D increased in the past years to 26,000 employees in 2019. This corresponds to almost 10% of the UK total".

ESTABLISHED CLUSTERS

When potential FDI locations are being assessed, corporates, institutional funds, venture capital and private equity houses always look to identify areas offering established and successful clusters in the same sector. The West Midlands has built upon the success of its large industrial clusters, interlinked with strong technology communities in related fields.

The research highlights that the West Midlands Advanced Manufacturing Cluster was the largest and most active in the UK and supported 14% of the country's advanced engineering workforce, and that the Coventry-based Midlands Aerospace Alliance was Europe's largest aerospace cluster.

Within the future mobility sector, the West Midlands is particularly strong in the areas of autonomous vehicles, battery tech, electric engines, and rail tech. Those four specialisms are currently much in demand from investors (along with electronics, industrial automation, and e-commerce). The report concludes:

- For each of these seven themes, the West Midlands has an absolute, as well as a relative advantage, over other areas in the UK.
- Despite the size of London's emerging tech sector, the West Midlands has a greater number of firms in advanced manufacturing and future mobility, and more people are employed in those sectors in the region than in London.
- The region also has a very high concentration of roles in construction tech, with almost 28% of the UK's total.
- The West Midlands, Manchester and Leeds are the city regions which dominate the smart cities' sector, with the West Midlands dominant for clean tech, space tech and construction tech.

The West Midlands contains the largest cluster of tech and digital firms outside London. While the region also benefits from the largest advanced manufacturing sector in the UK, the sector is dwarfed by the scale of its tech and digital base, which employs three and a half times more people than the advanced manufacturing sector.

The West Midlands emerging tech ecosystem is characterised by a strong research sector; these institutions are key R&D performers in the West Midlands in cooperation with industry and play a key role in the internationalisation of research and innovation in the region.

As global efforts intensify to reverse the impact of climate change, widen the adoption of sustainable technologies and deliver zero-carbon strategies, investors are targeting regions capable of fostering innovation. The report concludes that:

"There is a strong policy focus on fostering innovation in the West Midlands, and its Local Industrial Strategy aims to create a regulatory framework which supports innovation.

"The region is home to a well-developed infrastructure network fostering innovation and technological advances."

CONCLUSION

The independent analysis undertaken by London Economics and glass.ai provides data-led evidence that the West Midlands is well-placed to build on its existing appeal to FDI decision-makers, and has the potential to sustain a competitive advantage when targeting entrepreneurs and investors in high-growth, emerging tech sectors.

The comparative assessment of the West Midlands' technology landscape corroborates the region as the UK's largest emerging tech cluster outside of London, outpacing all other core city regions on relative scale of emerging tech capabilities.

The findings reflect the scale of local institutional capacity required to retain, scale-up and attract new emerging technology investment into the West Midlands, as well as the need for coordination across the region to maximise the economic potential of the region's innovation ecosystem.

Although the purpose of this research is to provide a supportive knowledge base for investment promotion activity, rather than make policy recommendations, the analysis is relevant to a wide range of stakeholders in the West Midlands, including local authorities, universities and thinktanks.

Based on the findings of this study and in the light of its wider strategic objectives, the West Midlands Growth Company comments:

"The findings of this analysis support a conclusion that the West Midlands is home to the largest cluster for emerging technology businesses of any core city region in the UK, outside of London. The scale of its technology clusters across smart mobility, advanced manufacturing, tech and creative, smart cities and data driven healthcare suggest a significant level of agglomeration, both in terms of supply chain and specialist skills. Both are highly favourable attributes that will prove attractive to prospective FDI decision-makers, seeking to identify investment locations that can bestow a lasting competitive advantage and should be highlighted extensively in the region's future investment narrative.

As the region's investment promotion agency, the West Midlands Growth Company should proactively target inward investment in the niche sectors in which the region is, in accordance with this analysis, a national leader and globally competitive. These include: Electronics, Industrial Automation, Autonomous Vehicles, Battery Technology, Electric Engines, Rail Tech, Professional Services Tech, Property Tech, Construction Tech, Gaming, Software Development and Telecoms.

Reflecting the significant efforts expended by the region towards developing a diversified and critical mass of innovation-based industries, the West Midlands has much to gain from continual prioritisation of its tech-integrated sectors, particularly those which are assigned key importance in the West Midlands Local Industrial Strategy.

The depth of academic strength within the analysed emerging technology fields indicates that the region boasts the institutional capacity required to retain, scale-up and attract new emerging technology investment into the West Midlands, and serves as a reminder of the need to ensure cohesion and coordination between public, private and academia across the region, in order to maximise the economic potential of the West Midlands.