



Leaders & Laggards

Current UK Digital
Infrastructure Landscape

Building the foundation: **The crucial role of robust digital infrastructure**

Robust digital infrastructure is vital for the UK's economic prosperity, technological innovation, and global competitiveness. Digital infrastructure is the backbone of modern businesses, supporting communication, collaboration, and the efficient flow of information. It is not unusual for companies to distribute their workloads across various locations, including public cloud, private cloud and colocation data centres. As the volume of traffic increases, the importance of maintaining fast and efficient communication becomes more significant. Studies have shown that delays of 1 second disrupt a user's flow of thought, while delays exceeding 10 seconds often result in a total loss of their attention. As such, digital infrastructure is critically important in today's digital age.

Data centres are essential components of the digital economy, serving as hubs for processing and storing data. The means for users to access and interact with this data is provided through network connectivity, both fixed and mobile. Interconnection between data centre sites ensures a seamless flow of information. As the number of data centres located outside of traditional data centre hubs (e.g. outside of London) grows, ensuring ubiquitous network coverage across the UK will become paramount.

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The dynamics of data centre growth in the UK

As one of Europe's major financial hubs and a primary entry point for transatlantic internet traffic, the United Kingdom is one of the key data centre markets in Europe¹.

Data centre construction in the UK is currently strong and is expected to remain that way for the next 5 years with a reach of 3.6 thousand MW capacity by 2029 (from 1.85MW in 2023)². We expect much of the investment to be focused on sites outside of London.

Data centre infrastructure in the South of England

The majority of the UK's data centres are located in and around London. These hubs are critical nodes in the country's digital infrastructure and tend to be very well connected as well as have strong carrier availability. However, they may not be attractive to enterprises that are not located in London, or for enterprises that have regional sites spread across the UK.

3,600 MW
expected data centre capacity by 2029

Data centre infrastructure in the North of England

There are around 60 data centre sites with more than 3MW of capacity in the entire North of England. That is about half of the amount of data centres that are located just in London. About 70% of the colocation data centre supply in the North of England can be found in Newcastle and Manchester.

There are only 9 data centres in Scotland, despite serving a population of more than 5.4 million. That means that many businesses in Scotland are relying on data travelling a round trip of as much as 400 miles if they host their data in London.



Figure 1: Data centre distribution across the UK

Map Key

- 1** Pulsant data centres
- 1** Third party data centres

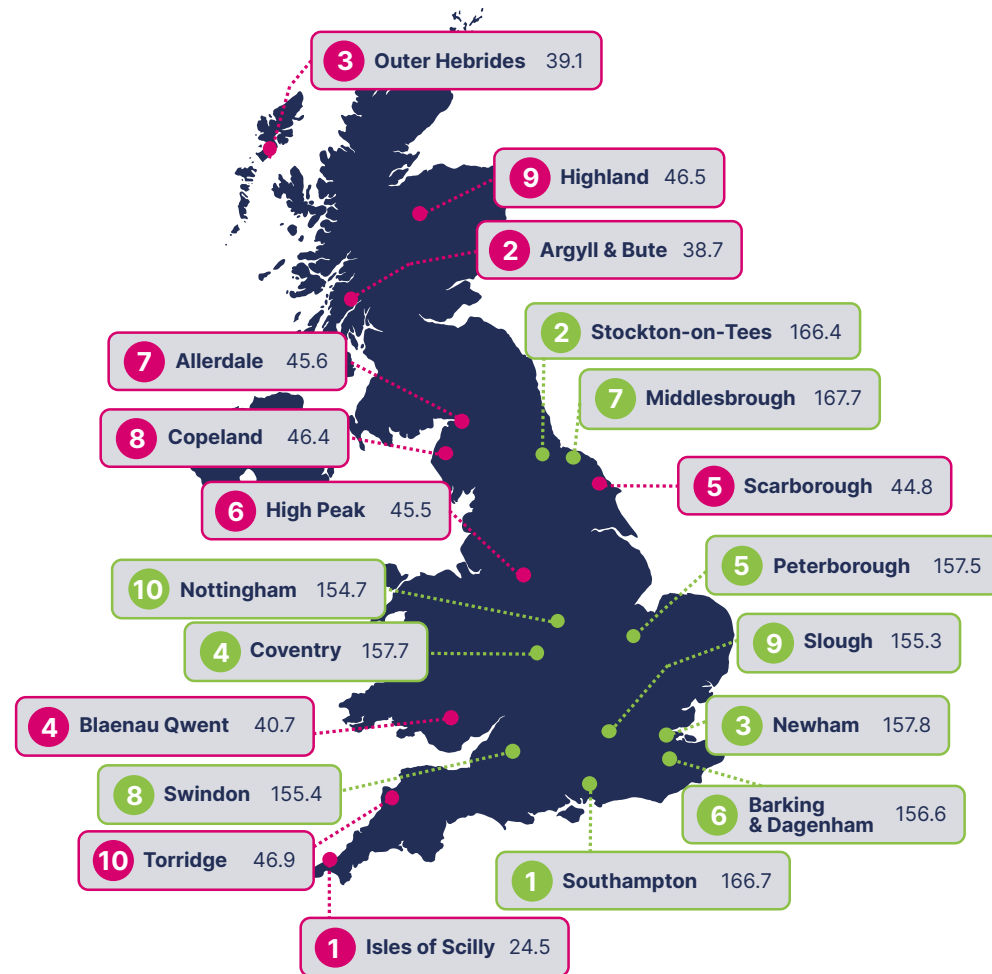
Source: STL Partners, datacentermap.com

The evolving landscape of broadband speeds across the UK

As the internet has become the primary platform for media consumption, entertainment, and professional tasks, broadband speeds in the UK need to adapt to meet the growing demand. Currently, the average broadband speed in the UK is 69 Mbps, showing an increase of 10 Mbps from the previous year.³ This was partly driven by increased fibre broadband rollout. Ofcom reports that 93% of home connections are now classified as superfast, providing speeds exceeding 30 Mbps.

69 Mbps

average broadband speed with the UK



Map Key

Local Authority Av. Download speed (Mbps)

● Top 10 speeds

● Bottom 10 speeds

Source: STL Partners, Uswitch

Figure 2: Breakdown of the UK local authorities with the fastest and slowest broadband download speeds

Fixed connectivity in the South of England

At the moment, the South of the UK enjoys better connectivity than the North and Scotland, with Southampton enjoying the fastest average download speeds compared to anywhere else in the UK, with average speeds of 167 Mbps.

This is likely due to the difference between urban and rural broadband download speeds. Urban areas have 22 Mbps faster speeds than rural areas.⁴ Urban areas, which are more prevalent in the South, tend to receive more attention from ISPs due to the concentration of potential customers, whereas rural areas, which are more common in Scotland and the North, often face challenges in terms of the cost-effectiveness of deploying and maintaining high-speed broadband infrastructure.

Fixed connectivity in the North of England

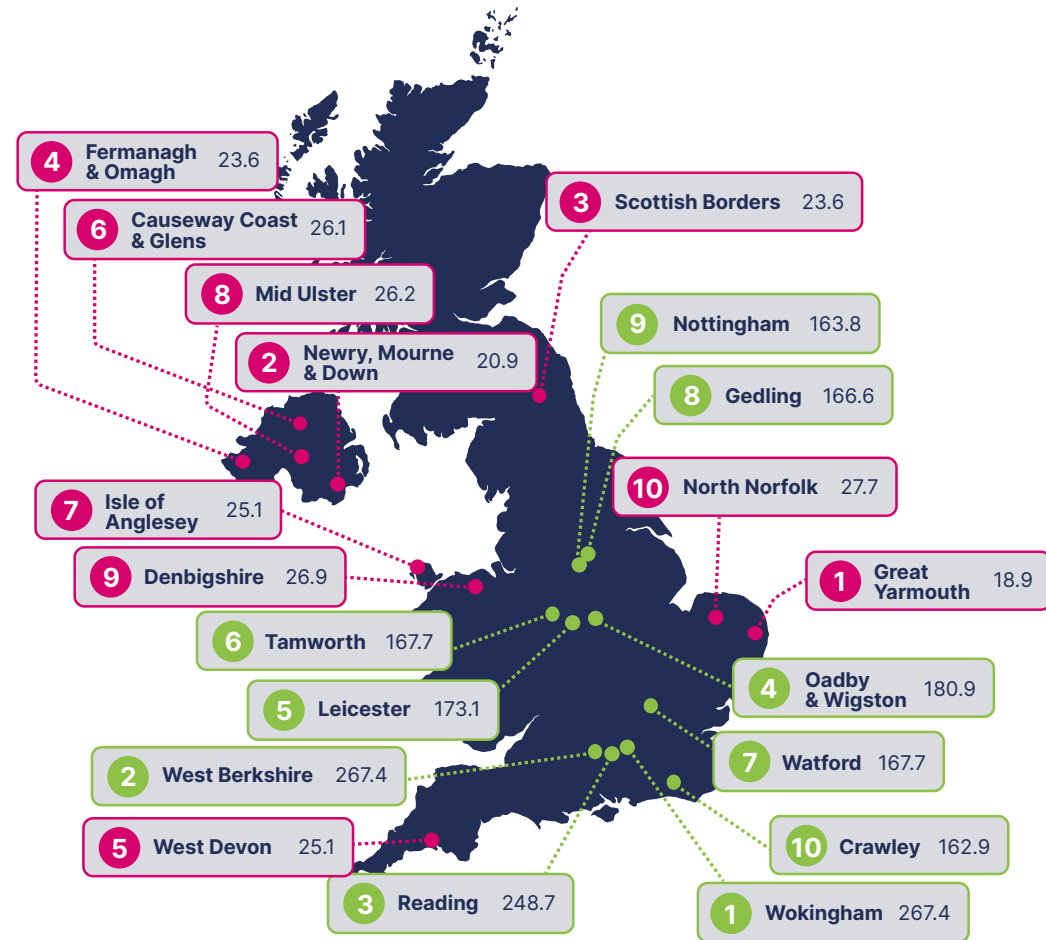
We expect that by 2030 an average household in the UK will have access to as many as six or more fibre connections. This will be catalysed by the government's £5 billion programme "Project Gigabit", which is aimed at enabling hard-to-reach communities to access gigabit-capable broadband. By extending essential digital connectivity to the areas in the UK that might otherwise be overlooked by broadband suppliers, mostly in the North of England, the project will even out the differences in connectivity between the North and the South. This will create a digital infrastructure that is able to support enterprises in the North to innovate and become leaders in their field. This is especially important as the North West is the English region that has seen the biggest increase in the number of new enterprises (6%) in the last year.⁵

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Future potential of advanced wireless connectivity in the UK

Although 5G connections are becoming increasingly common in the UK, with 77% of the population having access to basic 5G services, the typical download speed of 5G is still significantly lower than its theoretical best level of service. 5G has the potential to deliver download speeds between 10 and 20 Gbps, however, in reality, typical speeds are closer to 200 Mbps. 5G will reach its full potential with the adoption of standalone 5G connectivity. This means telecoms operators upgrading both their core and access networks (5G NSA which forms the majority of our 5G coverage today is where only the RAN and not the core has been upgraded). The UK Government is planning to achieve 5G SA in all populated areas by 2030. Widespread adoption of 5G can bring a cumulative productivity benefit of £159 billion by 2035 by transforming the economy, driving growth and investment.⁶



Map Key

Local Authority Av. Download speed (Mbps)

● Top 10 speeds

● Bottom 10 speeds

Source: STL Partners, Uswitch

Figure 3: Breakdown of the UK local authorities with the fastest and slowest mobile download speeds

Ten local authority areas across the UK will share a fund of £36 million to evolve into 5G Innovation Regions.

Mobile connectivity in the South of England

Statistics on mobile network performance show that South East and East Midlands are leading in terms of average download speeds. 5 of the top 10 best mobile download speeds in the UK are in South of England, with Wokingham boasting an average download speed exceeding 267 Mbps.⁷

Mobile connectivity in the North of England

The government has announced that ten local authority areas across the UK will share a fund of £36 million to evolve into 5G Innovation Regions.⁸ This initiative by the Department for Science, Innovation and Technology (DSIT) aims to accelerate the adoption of advanced wireless connectivity across diverse sectors, including agriculture, health, public services, creative industries, and transport.

One of the winners, Glasgow City Region, has secured £3.2 million for a health and social care initiative harnessing the power of the Internet of Things (IoT) to create environmentally friendly social housing and enhance monitoring systems for health and social care services. Meanwhile, the Greater Manchester Combined Authority is set to receive £3 million, which will be allocated to the implementation of 5G-enabled air source heat pumps in social housing within the region.

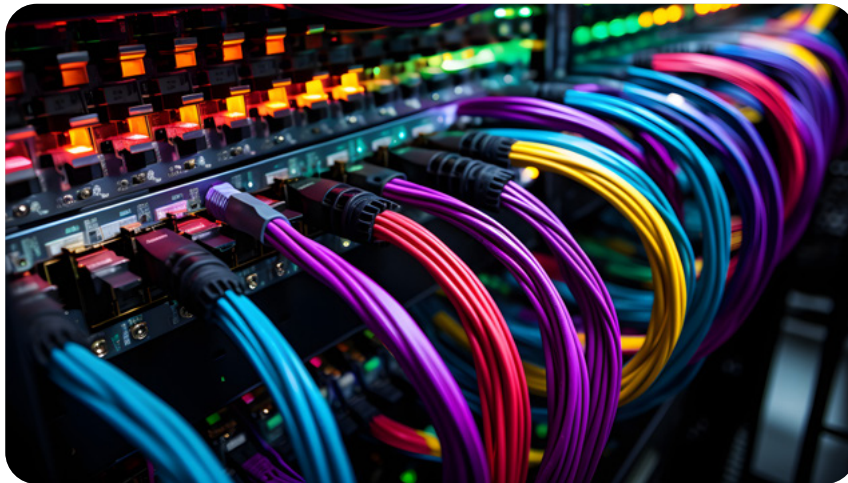


Figure 4: 10 local authorities chosen to become 5G Innovation regions
Source: STL Partners, datacentermap.com



Conclusion

While various initiatives have undoubtedly improved the current state of digital infrastructure provisioning throughout the UK, it is evident that further public and private investment is needed to achieve true ubiquity in connectivity. The disparities between the North and South of the UK underscore the need for joint efforts to ensure that the whole country benefits from advanced connectivity. It is only when the North and Scotland catch up with the pace of developments that the UK can fully embrace the potential of connectivity, enabling a host of new use cases and innovations that will shape the future of our digital landscape.



¹ www.nngroup.com/articles/response-times-3-important-limits/

² www.mordorintelligence.com/industry-reports/united-kingdom-data-center-market

³ www.uswitch.com/broadband/studies/broadband-speed-statistics/

⁴ www.ofcom.org.uk/__data/assets/pdf_file/0015/244140/home-broadband-report-2022.pdf

⁵ www.gov.uk/government/statistics/business-population-estimates-2023/business-population-estimates-for-the-uk-and-regions-2023-statistical-release#uk-countries-and-the-regions

⁶ www.techerati.com/features-hub/the-state-of-5g-in-the-uk/

⁷ www.uswitch.com/mobiles/studies/mobile-phone-statistics/mobile-network-speed-statistics/

⁸ www.cities-today.com/uk-aims-to-boost-5g-adoption-with-36-million-for-innovation-regions/

About Pulsant

Pulsant is an edge infrastructure platform provider with a unique multi-regional presence across the UK.

Our infrastructure helps businesses capitalise on the potential of edge computing to improve application performance, embrace 5G and IoT use cases, comply with data protection regulations and become more sustainable.

We offer a national network of 12 data centres where clients can collocate servers, access high-speed networks and connect to service providers, cloud providers and system integrators. In short, enterprises can locate workloads and data precisely where they need to, adapt capabilities on the fly and scale as they grow.

No other organisation offers the same blend of services that we deliver: a unique range of connectivity options and a private, highly-resilient data centre network with a nationwide footprint, all accessible through our integrated solution - platformEDGE™.



**Find out more about
platformEDGE**

Bringing The Edge Closer To You

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