

Digital Infrastructure underpins the digital, cultural and social infrastructures to develop places where people want to live, work and visit. Over the next few decades our digital networks will be the enabling infrastructure that drives economic growth and productivity.

The Digital Infrastructure sector contributed £33bn to the UK economy in 2017 (1.8% of GVA), up by a third since 2010.<sup>40</sup> A core contributor to connected growth in local areas, direct benefits from improved digital connectivity include large increases in download speeds leading to more productive economic activity. It is estimated that by subsidising upgraded infrastructure in certain postcodes £9bn of turnover was added to firms in those postcodes.<sup>41</sup>

Government has set targets for nationwide full fibre coverage by 2033 and for the majority of the population to be covered by a 5G signal by 2027. Full Fibre to the Premises (FTTP) will deliver future-proof, reliable, gigabit-capable connections. These will support greater productivity and economic benefits, underpinning growth sectors such as creative industries and tourism, and helping to reduce inequalities between and within regions. Good quality broadband and mobile coverage has become a modern necessity, both at home and work.

A range of evidence shows direct benefits from improved digital connectivity, including large increases in download speeds leading to more productive economic activity.<sup>42</sup> Wider potential impacts are in areas such as remote healthcare, education, travel and transport, and wellbeing, including loneliness. Gigabit-capable technology will ensure future opportunities in these areas, plus technologies such as AI or the Internet of Things, will be available to everyone in every region.

## Baseline

There are several areas to consider as part of developing an evidence base and strategy.

Following £1.7bn investment of public money from government and local authorities into the BDUK Superfast programme, superfast (>24Mbps) broadband coverage is at 95% of the UK, according to the latest [Connected Nations 2018](#) report from Ofcom, with Fibre to the Cabinet (FTTC) the most widely used technology.

Full fibre, or Fibre to the Premise coverage is currently at 6.20% across the UK.<sup>43</sup> The BDUK Superfast programme is continuing to roll out and has turned its focus to full fibre, with other government interventions including the Local Full Fibre Networks and Rural Gigabit Connectivity programme designed to deliver full fibre and stimulate commercial investment. The [Connected Nations 2018](#) report can help places quantify the state of local coverage, while [Thinkbroadband](#) has detailed maps illustrating local coverage, which can be both browsed by area and searched by postcode.

The [Universal Service Obligation](#) is currently being implemented by Ofcom. It is expected to allow consumers with connectivity below 10Mbps to be able to request a USO connection subject to conditions, from the beginning of 2020, funded via an industry cost-sharing mechanism.

Government is working to ensure that 95% of the UK has good coverage by 2022. Government wants the UK to be a world leader in 5G, and for the majority of the population to have access to a 5G signal by 2027. Mobile network operators are preparing for the launch of commercial 5G services, with initial launch cities and investment plans identified and first commercial deployments expected in the second half of 2019.

## Agreeing Objectives

DCMS's [Future Telecoms Infrastructure Review](#) (FTIR) (2018) sets out our roadmap to achieve the

40 [DCMS Economic Estimates 2017: GVA](#)

41 [Evaluation of the Economic Impact and Public Value of the Superfast Broadband Programme](#)

42 For example Deloitte, [Value of Connectivity: Economic and social benefits of expanding internet access](#), 2014

43 See Thinkbroadband for updates on broadband roll out statistics: <https://labs.thinkbroadband.com/local/>

government's digital connectivity targets, chiefly by encouraging commercial investment across the UK and creating the conditions to support deployment. It found c.10% of UK premises are unlikely to benefit from commercial investment without some form of additional funding. Government is committed to an 'outside-in' approach to ensure these harder to reach areas are addressed at the same pace as the rest of the country.

On mobile, the FTIR concluded that 5G offers potential new revenue opportunities for existing carriers and opens up opportunities for new players to enter the UK mobile market. New players could provide tailored solutions to connectivity challenges and help unlock the full potential of 5G. The FTIR recommends policies that maintain the benefits of competition between the mobile network operators, while encouraging new solutions.

The FTIR also focuses on the growing convergence between fixed and mobile markets. Delivering the high speed and high capacity capabilities of 5G will require dense fibre networks, and in some places 5G could provide a more cost-effective way of providing ultra-fast connectivity to homes and businesses.

When developing a strategy for digital infrastructure within a local area, recommendations for LIS objectives include:

- Supporting commercial deployment by reducing barriers for industry providers, and proactively using existing powers to promote commercial provision.
- Publicly funding gigabit-capable interventions targeted at non-commercial areas (the 'final 10%') that are unlikely to receive commercial investment.
- Ensuring any publicly funded interventions are sufficiently future-proofed, and reflect the growing convergence between fixed and mobile networks.
- Encouraging consumer take-up of broadband services in order for users to realise the benefits, and to support greater commercial investment.

These objectives should be made Specific Measurable Achievable Realistic and Time-limited according to local conditions and ambitions.

## Designing interventions

Public funding will be dependent on local areas having a clear plan to reduce and remove barriers to deployment and adopting best practice. You should work with providers to support commercial deployment of both broadband networks and mobile coverage infrastructure (in terms of conventional macro-level mast deployment and small-cell deployment at street-level):

- The [Digital Connectivity Portal](#) provides guidance for local authorities and network operators on effective policies and processes to facilitate deployment of broadband and mobile networks.
- Introduction to Community-led schemes provides guidance on options.

Public models for deployment of fixed broadband include:

- [BDUK Superfast programme](#): rolling out superfast broadband across the UK via local body delivery partners.
- [Local Full Fibre Networks challenge fund](#): models including Public Sector Anchor Tenancy / Building Upgrade / Asset Reuse.
- Local Full Fibre Networks [Gigabit Broadband Voucher Scheme](#).
- [Rural Gigabit Connectivity programme](#): trialling a public building hub model with rural specific vouchers to deliver gigabit connectivity to rural areas in the 'final 10%'.

Identifying the location of areas within the non-commercial 'final 10%' will become clearer with further roll out in the coming years. Currently, premises without access to superfast broadband are considered more than likely to be within the 'final 10%'. It is recommended that any public investment be initially targeted at areas and premises with sub-superfast speeds.

Fixed broadband policies are strongly encouraged to align with government policy to deliver gigabit capable networks. While publicly funded interventions should be targeted at the non-commercial 'final 10%', they should align with areas and premises currently targeted by other public programmes to avoid overbuild (e.g. [DEFRA's Rural Broadband Infrastructure Scheme](#) which funds Local Authorities to deliver superfast broadband to rural businesses and communities).

Interventions to consider include encouraging planning authorities to adopt de minimis provisions with regard to small-cell mobile infrastructure, and working with Mobile Network Operators to proactively identify possible sites for infrastructure deployment / improvement.

## Monitoring progress

Projects should assess reducing the digital divide between communities, as well as benefits to the economy and the public sector.

[The Ofcom connected nations](#) report should be referred to in order to monitor geographical coverage of fixed and mobile infrastructure, which are likely to be important outcomes for any digital infrastructure programme outlined by a LIS.

Monitoring of interventions should also focus on the connection between the policy outputs (i.e. FTTP coverage) and specific economic outcomes, such as the effect on local firm performance and productivity. Monitoring should also consider value for money.

The [Superfast Broadband evaluation](#) provides an example of how these outcomes are monitored at a local level. This will provide you with ideas of how to evaluate your interventions in the digital infrastructure space and highlights the tangible economic and wellbeing benefits that increased connectivity brings to communities.



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