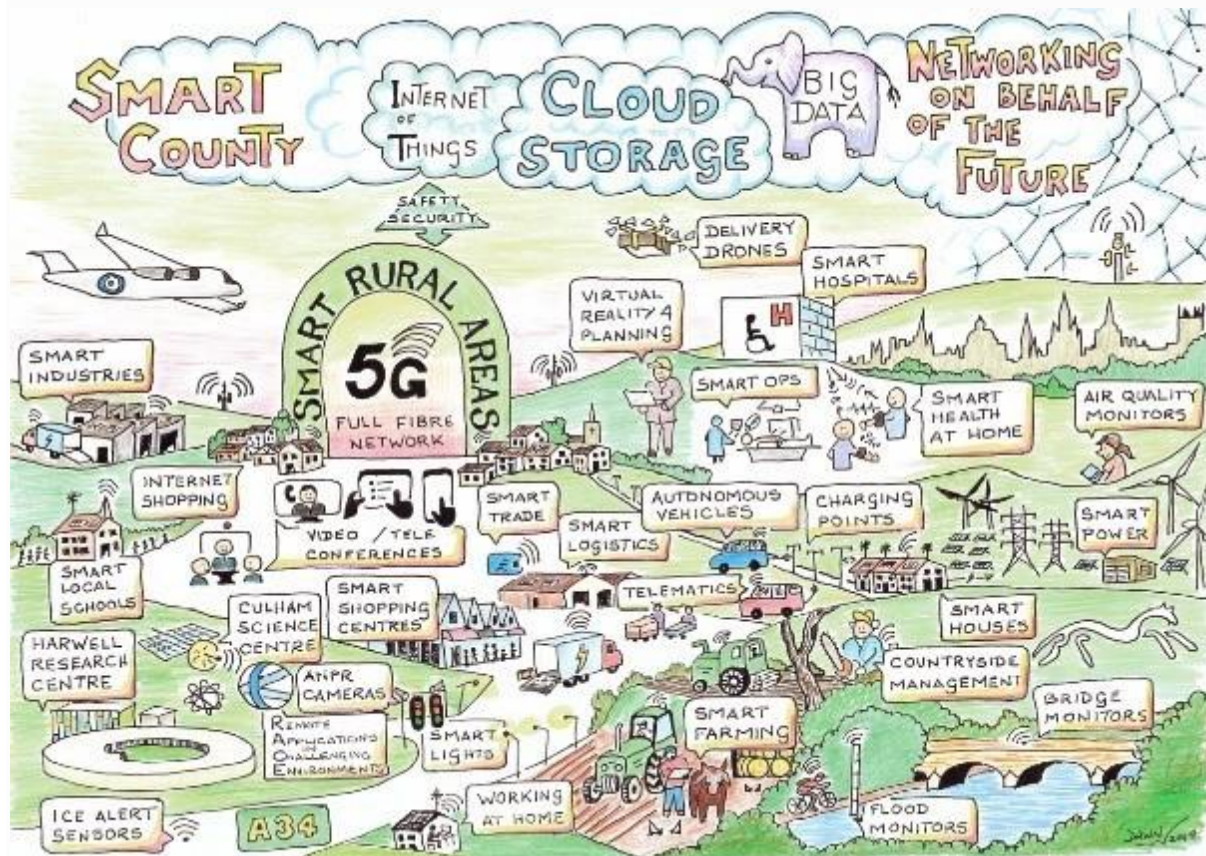


## Digital Infrastructure Strategy

Digital Infrastructure is the collective term for full fibre broadband connectivity, 4G and 5G mobile data connectivity, and the combined suite of connected devices which are revolutionising how people live their lives, businesses improve their productivity, and how transport is reoriented to reduce congestion and negative environmental impacts. The boundaries between traditional infrastructure, Internet of Things (IOT), Machine to Machine (M2M), Smart County, Connected Autonomous Vehicles (CAVs), and Electric Vehicles (EVs) are increasingly blurred.



The foundation for any digital infrastructure strategy is fibre optics. Connecting homes, businesses, street furniture, highways, and so on, with fibre ensures an almost limitless capacity of real-time data transfer, creating the opportunity to develop new ways of doing business, providing services, enriching lives, making healthier places, learning, and mobility. One fibre strand the thickness of a human hair can transmit data at speeds of over 1 terabit/sec (1 million megabits/s). Although 5G (and future generations of mobile transmission) can also transmit at very high speeds, mobile coverage is ultimately also dependent on fibre, and typically the faster the wireless speed, the smaller the coverage area becomes, so widespread fast wireless requires an extensive fibre footprint.

The issue with building extensive fibre networks is the very high cost of retrospective deployment, whereas deployment in say, new housing, is relatively inexpensive. Typically, fibre is bundled and blown through fixed underground ducts, which in turn require disruptive civils works to bury. Once deployed however, it is much more reliable and requires considerably less maintenance than historic copper networks.

## How does Digital Infrastructure assist with reducing climate change?

The economy increasingly depends on knowledge-based businesses, where growing numbers of people can work from home, rather than commute. Meetings can take place virtually by audio/video conferencing, requiring high speed digital connectivity. The business case for installing extensive Electric Vehicle (EV) charging infrastructure is helped by a 'dig-once' policy whereby at the same time as digging up the road to install fibre ducting, the power network can be extended to the kerb for EV charging points. Autonomous vehicles can help introduce a change from car ownership to car 'usership'. Connected Autonomous Vehicles (CAVs) need 5G connectivity to safely navigate our highways. Logistics will want 5G connectivity to improve delivery efficiency and first mile/last mile delivery. The combined positive impact of these examples and others will make a significant contribution to a carbon-neutral county.

## Current Coverage Statistics

- Oxfordshire superfast (>24Mb) coverage = 97.5%
- Oxfordshire superfast (>30Mb) coverage = 97.2%
- Oxfordshire ultrafast (>100Mb) coverage = 58.2%
- Oxfordshire full fibre coverage = 10.5%

## What strategies and policies are proposed to improve digital connectivity?

The overarching strategy splits into two approaches:

**Commercial build.** It is estimated that delivering full fibre broadband to all premises will cost c £35bn. The decision to invest huge amounts of capital, from private or public investment, is influenced by several factors which are influenced by local policies:

- Highways Access. Being a responsive and reasonable Highways Authority greatly improves speed of delivery and thus reduces cost of deployment
- If an operator knows the local authority will help with access to private land problems, this will also speed up delivery and reduce costs
- If operators, notably Mobile Network Operators (MNOs), know they have a standard approach to gaining planning permission for erection of mobile mast infrastructure, this speeds up delivery and reduces costs
- Public Assets. If operators can have reasonable non-exclusive access to public sector assets such as street furniture and rooftops of public buildings, this improves the business case for investment
- Proactive engagement with developers building new housing will ensure these are all delivered with full fibre at the build stage.
- All the above can be positively influenced where a formal partnership with our planning authority colleagues creates an environment where Oxfordshire can gain a competitive edge in commercial investment

**Intervention build.** The Future Telecoms Infrastructure Review calculated around 10% of premises will never be viable for commercial investment alone and will require public funding. The County Council is geared up to work with government to secure funding streams to address this in Oxfordshire. By having plans in place as listed above facilitating commercial build, we will be in a good position to apply for funding and to deploy relatively quickly

**Public Perception.** There are several issues in the public realm concerned with issues around providing digital infrastructure in Oxfordshire. Perceptions are of health risks of 5G, inconvenience with road works and the experience in delivering Better Broadband for Oxfordshire. These will all need to be addressed moving forward.

The Department for Digital, Culture, Media and Sport has provided evidence of how digital infrastructure improves lives including: reducing the digital divide, protecting contracts, improved economic performance, benefits to businesses, and value for money. There are future opportunities that will be created by digital infrastructure including integrated public transport, and improved traffic management.

Overall, OCC is supportive of connecting the whole county, including rural areas, to a superfast fibre broadband.

## Question 22

### **Digital infrastructure strategy: What do you think?**

How could you be better connected? How would easier access to information, services and transport be good for you? Would it reduce your need to travel?

To respond please use the online consultation form.