

How 5G will improve the home and the workplace



Mobile^{UK}



Why should we care about 5G?

5G will benefit our economy and society.

It will be better at doing the things that 4G does already, but significantly it will offer faster and more reliable mobile internet.

It will also do things that 4G cannot. It has the potential to change the ways in which we learn, how we communicate and how we do our jobs through the simultaneous and seamless connection of our digital devices.

But because it is often described using technical jargon, many people are unaware of how 5G will enhance their life.

This pamphlet explains the benefits of 5G using examples and language that anyone can understand.

It is one of six pamphlets that look at the impact of 5G. The topics included in these pamphlets are:

- **How 5G will help healthcare**
- **How 5G will increase rural opportunities**
- **How 5G will support the emergency services**
- **How 5G will help councils**
- **How 5G will improve the home and the workplace**
- **How 5G will help the environment**



5G will boost the trend towards smarter homes. PWC has estimated that **£10.8bn** will have been spent on connected homes in 2019.

A Government-backed 5G trial in Worcestershire tested augmented reality technologies and found a potential productivity benefit of 2%. These gains at the UK level would be equivalent to **£2.6bn**

How will 5G improve the home and the workplace?

While 4G plays a major role already in how we manage our homes and how we work, 5G digital connectivity will provide added capabilities in two key ways:

- **Better connected homes.** 5G-backed technology can lower the barriers to getting a fast and reliable digital connection in the places where we live. This will enable the use of many more devices to help us run our homes more efficiently, reducing our energy use and running costs.
- **New tools to help us do our jobs.** 5G-backed technology - such as augmented reality and uninterrupted digital connections on transport networks - will make jobs easier. If needs be, we will be able to do work as effectively and productively on the move as we would in an office, freeing up time to dedicate to those things that are always further down the 'to do' list.



5G networks are being gradually rolled out across the UK. As and when you have access to 5G connectivity will depend on where you live, your network provider and whether you have 5G-enabled devices.

If you have further questions about 5G, some of the most common questions have been answered on the final page

Uses of 5G at home and at work

A wireless way of connecting your home.

Wires and cables are the usual method of connecting our homes to the digital world. But laying wires and cables is not always easy – some homes cannot easily get access to the fastest internet speeds because of difficult terrain (this is especially a problem in rural areas). The fast speeds offered by 5G - which are 10 to 100 times faster than 4G - gives it the potential to act as an alternative to broadband in these harder to reach areas in the future. Moreover, a 5G wireless router can be installed quickly and easily without the need to book an appointment with engineers.¹ Some overseas Governments have funded programmes to support the rollout of this wireless connectivity.²



Reducing travel disruptions.

The transport and mobility sectors are expected to gain heavily from 5G, as the high-speed network and low latency connectivity will enable transportation to become faster, smarter and safer.³ This will lead to a reduction in train delays, congestion and cancellations caused by maintenance, all easing the stresses of the travelling experience, whether for work or pleasure.



New tools that can transform ways of working.

5G-enabled augmented reality (AR) is one of these tools. Through a headset or handheld device AR superimposes a digital image onto a user's view of the real world. There are many ways new technology can be used across different industries. At London Fashion Week 2020, Three updated the traditional catwalk with ultra-fast 5G by turning it into an immersive experience. Guests felt and even smelt the latest styles with 3D audio, haptic feedback and a 46-metre projection. The show finished with model, Adwoa Aboah walking the runway, while she watched it from the front row with 106 synchronised cameras creating a 3D version of the model.⁴



A big reduction in household bills.

5G connections between appliances and between service providers and your home can reduce your costs. Smart thermostats and smart lighting can help to reduce energy bills.⁵ Smart security systems can reduce home insurance premiums.⁶ Smart waste collection can reduce council tax bills.⁷ Some of these things can be delivered on existing networks, such as WiFi. But these existing networks can only cope with so many devices competing for digital connectivity. 5G has the capacity and the reliability to create a step-change in the smart home - delivering connectivity that will put more pounds in your pocket.



¹ Nokia, Nokia 5G use case research

² KPMG, Why 5G can deliver on PM's full fibre internet pledge

³ BT, Nov 2020, Accelerate 5G innovation for regional economic recovery: <https://newsroom.bt.com/bt-and-university-of-warwick-to-accelerate-5g-innovation-for-regional-economic-recovery/>

⁴ <http://www.three.co.uk/hub/fashion-fuelled-by-5g/>

⁵ Intel, How 5G will make your home smarter

⁶ Zurich, August 2016, Why do you need a smart home?

⁷ O2, March 2018, The value of 5G for cities and communities, <https://news.o2.co.uk/press-release/upgrade-uk-cities-now-miss-productivity-savings-6-billion-year-5g-o2/>

The statistics



5G will boost the trend towards smarter homes.

PWC has estimated that £10.8bn will have been spent on connected homes in 2019.⁸



The Government is investing in improving connectivity on the transport network, which will help people work on the move.

For instance, in July 2020 the Government announced £200,000 to begin research into improving mobile connectivity for rail passengers, which will have 5G in mind.⁹



5G will help to support worker productivity in the workplace.

A Government-backed 5G trial in Worcestershire tested augmented reality technologies and found a potential productivity benefit of 2%, creating additional capacity to help deliver improvement in customer experience.¹⁰

⁸ PWC, Connected Home 2.0

⁹ DfT, £200,000 boost for better mobile connections on rail network

¹⁰ Worcestershire 5G Testbed, Gearing up our people to drive the power of 5G

Frequently Asked Questions

1. How do I get access to 5G?

Firstly, you need a 5G signal in your area (just as you need a 4G signal to get 4G now). Secondly, you need a device that can receive 5G signal - some 5G-enabled smartphones are available now, with more coming onto the market.

2. Does 5G pose a danger to your health?

5G uses radio waves - as does 4G, 3G etc. - which have been found safe in numerous studies when used within guidelines. Public health organisations around the world support this conclusion.

3. Does 5G mean more masts and antennae?

Some new infrastructure will be needed to connect more remote communities to the 5G network. But existing masts will be adapted for 5G wherever possible. If new sites are needed, relevant planning rules will apply to them being built.

4. Is 5G bad for wildlife?

No. Despite many false claims, wildlife has not been found to be negatively affected by 5G.

5. Will 5G offer an alternative to broadband?

4G and 5G can both provide mobile home broadband connections. However, while 5G will offer potentially near gigabit capable speeds in the future, currently UK 5G mobile networks don't provide the same capacity or offer speeds as fast as 'full fibre' for home broadband.

Source: Mobile UK - www.mobileuk.org

5G CHECK THE FACTS

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