How 5G could increase rural opportunities

Mobile UK

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

5G-enabled technology can reduce farming costs by **15%** and increase crop yield by **13%**

5G-enabled technology can support rural education. Schools globally are allocating **15.9%** of budget to education technology in 2020.

How could 5G increase rural opportunities

While 4G already provides access to new approaches to working and learning, 5G will increase rural opportunities in two key ways:

- **Future-proofing the rural economy.** All rural firms - from the farm to the manufacturer - could have new tools to help them boost their business. 5G-enabled remote working could help rural residents to access better jobs and training. Tourism could be enhanced by new methods of engaging visitors.
- **Improved digital connectivity.** 5G offers the possibility of reaching areas where fixed digital connectivity cannot. In other words, where difficult terrain prevents or severely hinders the laying of fixed digital wires, 5G could be part of a viable solution alongside existing technologies.

5G offers new opportunities to rural areas and could be an important element in ensuring connectivity is provided to rural areas while opening up the potential for new technologies that could have a significant impact on rural businesses and people.

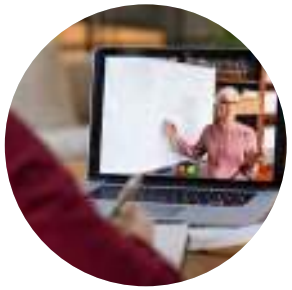
5G networks are being gradually rolled out across the UK. As and when you have access to 5G connectivity will depend on where you live, your network provider and whether you have 5G-enabled devices.

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

5G in rural settings

The focus of farming's future.

Equipment that uses 5G will give farmers new tools to make their job easier and increase productivity. 5G-enabled drones will enable farmers to capture images across many hectares of farmland. These images can be used to analyse the quality and quantity of grass (an important resource for managing livestock), or to analyse soil to see where fertiliser is needed.[1] As well as making farmers' jobs easier, farms will become more efficient and environmentally sustainable. The Government has been actively trialling the use of 5G on farms in Shropshire and Somerset.



Access to better education and health services.

5G will offer rural schools a new set of teaching devices. It will be easier to deliver uninterrupted remote lessons when they are necessary (such as during a pandemic).[2] An enhanced and more reliable digital connection offers an alternative to participating in university degrees and skills courses face-to-face.[3] People living in remote areas will not have to travel to see a doctor, video conferencing could mean a diagnosis and prescription taking place without the patient having to leave the house.[4]

[1] Vodafone blog, accessed 23/09/20, 5G and the future of farming, **https://n.vodafone.ie/business/smart-business/blog/how-5g-will-change-the-future-of-farming.html**
[2] Vodafone blog, accessed 23/09/20, local students, global explorers, **https://www.vodafone.com.au/red-wire/5g-future-students**
[3] For example, California University: **https://www.calu.edu/news/2020/Cal-U-Remote-for-Fall.aspx**
[4] At&T website, Five ways 5G will transform healthcare

A step-change in animal welfare.

5G connectivity will collect data from sensors that will help to keep animals healthy. Salmon farms are testing these sensors now to ensure that fish stocks are not living in a harmful environment.[5] Trials have taken place using sensors to monitor the day-to-day health of cows, including their mobility and eating patterns.[6] In North Wales, prototype sensors have even been developed in an effort to prevent sheep from being stolen.[7]

A bigger pool of jobs to access.

Remote working was on the rise, even before COVID-19 forced offices to close. But remote working is not an option in places that have no digital connectivity or that have poor digital connectivity. Jobs that require access to large amounts of digital information - such as those in financial services or online marketing - simply cannot be done currently from these locations. 5G will mean more digital-intensive jobs can be done from rural areas, boosting rural economies.[8]

[5] 5GRuralFirst website, accessed, 23/09/20, **https://www.5gruralfirst.org/project/agritech/**
[6] Ibid
[7] Ofcom, December 2019, Ofcom Wales Explores the Digital Farmyard, **https://www.ofcom.org.uk/about-ofcom/latest/features-and-news/ofcom-wales-explores-digital-farmyard**
[8] Cisco, March 2020, What 5G means for remote work, **https://newsroom.cisco.com/**

The statistics

5G could transform the farming of agricultural land.

There are 17.5m hectares of agricultural land in the UK.[9] 5G-enabled technology can reduce farming costs by 15% and increase crop yield by 13%.[10]

The Government is providing millions of pounds in backing 5G trials in rural areas.

£4.3m of public funding has been allocated to Dorset for trials involving coastal search and rescue, agricultural technology and tourism venues.[11]

5G-enabled technology can support rural education.

This technology can be a powerful tool in teaching. Schools globally are allocating 15.9% of budget to education technology in 2020, in comparison to 3.9% in 2018.[12]

[9] Defra, December 2019, Farming Statistics, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/865769/structure-jun2019final-uk-22jan20-rev_v2.pdf

[10] IoT World Today, Connected farming harvests data and gives agriculture a jolt, Feb 2020, link

[11] 5G Rural Dorset Website, https://uk5g.org/discover/testbeds-and-trials/5g-rural-dorset/

[12] World Economic Forum, July 2020, 5G Outlook Series: The impact of mobile technology on the response to COVID-19, http://www3.weforum.org/docs/WEF_Global_Accelerator_Program_5G_Outlook_Report_2020.pdf

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

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