



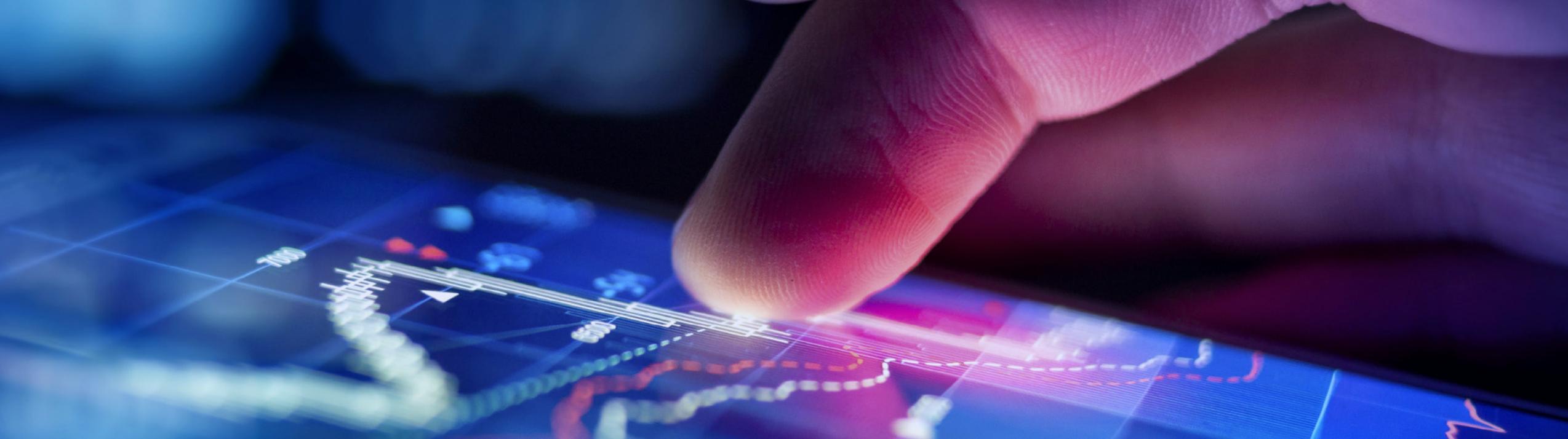
# Superfast 5G allows new technologies to transform and redefine business

Northumbrian Water  
harnesses the power of our  
next-generation 5G network

**NORTHUMBRIAN**  
**WATER** *living water*

O<sub>2</sub>  
business





## 5G technology is reinventing connectivity

Groundbreaking innovations are being made possible by the new capabilities of our high-speed 5G network.

*“Innovation is key to how we can be more efficient and improve our services. The opportunity to be part of 5G trials with O<sub>2</sub> and deliver new capabilities for the benefit of our customers was too big an opportunity to pass.”*

**Martin Jackson, Head of Strategy and Architecture, Northumbrian Water Group**



### Capability

- O<sub>2</sub> 5G network



### Results

- High-capacity connectivity for collaboration and business operations
- Enabling immersive and enhanced customer experiences
- 5G enables 10-20 times faster download speeds than 4G, so high-bandwidth activities are quicker and more efficient
- 5G will allow businesses to capture and share data from a large number of connected devices in real time on a massive scale, giving valuable insights to make quick decisions and take proactive action



Northumbrian Water is a forward-looking utility company looking to disrupt the market with innovative new ideas and technologies. They worked with us to find ways our 5G network could enable four key innovations for trial.

**AR Mapping:** Augmented reality headsets allow technicians to 'see' the network of pipes and cables beneath their feet when they're in the field. Collaboration between water, gas, TV, telecoms and electric companies has helped create a single digital map of underground infrastructures. Technicians can visualise the infrastructure accurately using AR, via a headset or mobile device. This removes the need for guesswork and trial and error using paper maps. The maps are stored and delivered seamlessly in real time, so technicians always see the most up-to-date information.

**Remote Expert:** A high-speed audio-visual link, using headphones and a dedicated eyepiece, connects technicians in the field to experts who can assist with the details of specific jobs. So highly skilled operatives can optimise their time by advising remotely, using augmented reality for greater accuracy in description and real-time demonstration using graphics and annotation, rather than having to physically go to each job where their expertise is required. This allows teams to resolve faults quicker and more effectively.

**Transferring high data volumes for GIS management:** Northumbrian Water's GIS (Geographic Information System) database is a hefty 24GB in size – impossible to transmit over standard 4G network. Field workers rely on this information for a large majority of work which they access via Tough Pad tablets. Updates used to be done manually at head office every 2-3 months, leading to delays in the latest information. With 5G, updates can be made and accessed direct from technicians over the air, saving them the trip to the nearest office.

**In-home water monitoring:** IoT (Internet of Things) sensors such as the 'Barnacle' track water quality in customers' homes, giving Northumbrian Water valuable insights to make decisions fast and take proactive action. The device sits in the toilet cistern and currently requires wifi connection in the home. 5G will allow data to be collected from a large number of devices, securely and in real time over a massive scale – and without the customer needing to connect to wifi.

*5G technology is reinventing connectivity and this innovation is key to how we can differentiate ourselves and improve our services to customers.*

**Martin Jackson, Head of Strategy and Architecture, Northumbrian Water Group**

## Reduced costs

Easy access to more accurate, up-to-date information reduces the possibility of errors and allows staff to work more efficiently, increasing workloads and lowering costs.

## Improved use of resources

Expert staff can assist field technicians more efficiently using high-definition point-of-view cameras with AR maps and illustrations.

Read more customer stories at:  
[www.o2.co.uk/enterprise/insights](http://www.o2.co.uk/enterprise/insights)

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*“ 5G offers a number of benefits, including improved operational efficiency, safeguarding and empowerment of staff and the ability to offer more personalised experiences – overall, delivering a better customer experience. ”*

**Elizabeth Ponsford, Senior Product Innovation Manager, O<sub>2</sub>**

## Better services to customers

Improved working conditions and smarter tools mean that Northumbrian Water can solve problems faster and ultimately deliver better services to its customers.

## New technologies made possible

5G enables real-time access to Northumbrian Water's large GIS database with high-definition augmented reality information available wherever and whenever it's needed.