

Future-proofing the UK

Our annual review for
2018/19



What's in here

It's been an exciting year here at Openreach and we're pleased to be able to tell you about it in this review. You can find out what our chairman says about our progress, learn about our latest technology developments, and of course, check the numbers.

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Who is Openreach?

We're the people behind the UK's digital network

We connect homes and businesses, large and small, to the wider world. We work every day to get faster broadband speeds, broader coverage and better service for everyone.

How we work

We're an open wholesale network provider. That means our services are available to everybody. And our products always have the same prices, and terms and conditions, no matter who's buying them. Our customers are the 600+ communications providers working in the UK – companies like BT, Sky, TalkTalk and Vodafone. We connect people to their networks so they can sell them landline, mobile, broadband, TV and data services.

We're part of everyday life

We're not exaggerating when we say that our broadband network touches almost every part of daily life. It's the largest in the UK, covering almost 27.5 million homes and businesses. Our point-to-point business lines (called Ethernet lines) connect thousands of schools, hospitals, financial institutions, mobile masts and large businesses – even TV, CCTV and data centres.

Openreach in numbers

We build, maintain and manage more than 173 million kilometres of cable stretching from Scotland to Cornwall, Wales to East Anglia.

Our fibre broadband network is the biggest in the UK, available to almost

27.5m
homes and businesses

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Our ambition is to deliver the best possible digital connectivity to everyone, everywhere, equally, across the entire country. And as the nation's largest network infrastructure builder, we believe we're the team that can get that job done.

Clive Selley, Openreach CEO

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We carry out 9.5 million engineering jobs each year. Our 33,000 people work in every community and in all weathers. They tackle complicated engineering problems, coordinating works with councils, highways agencies, energy suppliers and landowners. And they install and maintain the complex kit that provides ultrafast broadband services.

We connect communications providers

It's our network that keeps communications providers' customers connected. So we work with them to keep expanding and updating that infrastructure – including in areas that other businesses ignore because they're too remote.

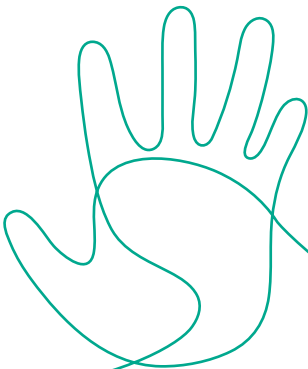
We also work closely with other organisations like the Government, Ofcom and the wider industry to make sure the UK stays one of the leading digital economies in the G20.

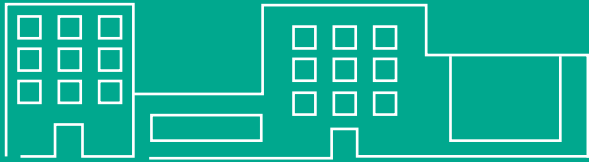
Focusing on a fibre-first future

We want to build more Fibre to the Premises (FTTP) technology. It's faster and ready for the future. And crucially, it's more reliable. We've already reached well over 1.2 million properties with our full fibre network. We previously planned to bring fibre to three million properties by the end of 2020. Then in May 2019 we increased this target by a third. So we now plan to reach four million front doors by March 2021.

But we don't want to stop there. If the investment conditions are right, we want to reach 15 million homes and businesses by the mid-2020s. Ultimately, we plan to cover almost all of the UK.

It's an ambitious target. But we believe we can meet it.





97,000
street cabinets



We employ more than

33,000

people



We facilitate

5,600

exchange buildings

We have more than
25,000 vans



We work on behalf
of more than

600

communications
providers

We've invested
more than



£13bn

into our network over
the last 10 years

Our network is available
to nearly

32m

premises

Our network has

4.8m distribution points

(poles and underground joints)

We're hiring over



3,000

new trainee
engineers
during 2019



We work on behalf of more than **600** communications providers like BT, Sky, TalkTalk and Vodafone

A message from our chairman, Mike McTighe



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These are exciting times at Openreach. We want to get decent, reliable and future-proof broadband to as many people as we can, as fast as we can.

Mike McTighe, chairman

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Openreach has had a solid year of progress. We improved our customer service performance, confirmed our status as a legally separate entity, and accelerated our full fibre build programme through major investments in our people and our network.

Investing in our service and people

Our network is more than 173 million kilometres long and passes nearly 32 million homes and businesses. With so many customers, improving the service we offer will always be our top priority.

I am encouraged by the progress we're making in reducing faults, keeping missed appointments down and fixing issues much faster. Last year we cut the total number of faults on our network by 4.4% – saving some 194,000 engineer visits. This is helping us continue to meet or exceed all 42 of Ofcom's broadband service targets.

On the dedicated circuits we provide for businesses, we delivered another strong year of Ethernet orders and we are also fixing 94% of faults within just five hours.

We also opened more direct communication with end customers, via our website and social media, to tackle the frustration some face in contacting us.

But we know we need to do better, because what we do is so important to the UK's citizens and businesses.

We're continuing to invest heavily in our people, training and systems. In 2018/19 we hired 3,500 more trainee engineers to help us sustain improvements and we plan to hire a total of 3000 in 2019. It is the biggest recruitment drive in our history. To consolidate it we have introduced new training and career opportunities to help us develop and keep hold of the very best engineering talent.

We have now opened four centres, including Peterborough and Livingston. A further eight similar centres are being built or upgraded across the country. Each facility includes an ‘Open Street’ – a mock-up of a typical suburban street, to help our engineers develop their skills in an authentic and immersive environment.

Fulfilling our commitments to Ofcom

Following Ofcom’s Digital Communications Review of 2015, we have implemented a series of changes to our governance and operations to give Openreach more control of its strategy, investments and plans within a strategic and financial framework defined by our parent company, BT.

The major milestone this year concerned our people. On 1 October 2018, more than 31,000 people transferred from BT into the new Openreach Limited – a considerable step that we believe is the largest ever in history. We are hosting Openreach Northern Ireland to complete the formal implementation of our Commitments to Ofcom under the Review. With our recruitment drive we now employ more than 33,000 people.

Meanwhile, our rebranding programme continues ahead of schedule. Almost 17,000 vehicles now feature the new Openreach brand, and we have updated all our external websites, templates and systems. Out of 32 Openreach buildings, we have just seven more to rebrand.

Ofcom recognised the progress we have made across the board in its most recent implementation report.

We have completed most of what I call the ‘hard wiring’ necessary to create the more independent Openreach. The ‘soft wiring’, encompassing things such as culture and behaviour, always takes longer to embed.

I am, however, very encouraged at the real progress that BT and Openreach have made in this regard. There is a real consensus throughout both organisations that only by the embedding of this new way of working will we establish an enduring legacy. It takes time but we are on the right path.

We are fixing

94%

of network faults
within five hours



We’re rolling out
fibre across

26 locations

Mike McTighe
continued

Our network is more than

173m

kilometres long



‘Fibre First’

FTTP is a vital technology for the UK’s future. It is fast, reliable and future-proof. We believe it is key to the future success of digital services in the UK and we believe Openreach has to underpin this. That is why our strategy is ‘Fibre First’.

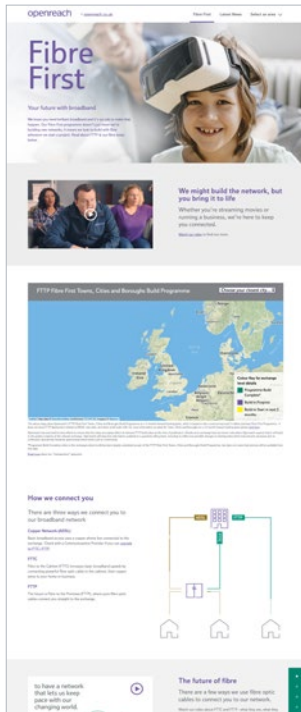
Last year we accelerated our fibre build programme and doubled our FTTP footprint. The new network is now available to more than 1.2 million homes and businesses. As a result, we are increasing our aim of reaching three million premises to four million by March 2021. We are progressing FTTP build in 26 locations and in April announced a further 12 locations to be available in the next 12 months, bringing the total to 38. Around a third of our FTTP footprint today is in rural areas, and our continuing Building Digital UK (BDUK) work is almost exclusively focused on FTTP.

We want to go further – to 15 million by the mid-2020s – if the right conditions to invest are in place. To help create those conditions, we are doing whatever we can to reduce the cost of rolling out fibre – including tools and techniques such as drones, micro-ducting, ribbonised cables and ‘plug-and-play’ connections.

We’re also working with the Government and Ofcom to deliver the enablers we need to go even further and faster. One of the biggest of these is business rates – specifically the Cumulo tax on fibre infrastructure. It is a barrier to investment for any operator wanting to build more FTTP, and we believe that action on this by the Government would boost investment across the sector.

Another hurdle is adoption. Having built our superfast network to almost 27.5 million premises across the UK, there are still more than 15.5 million homes and businesses who are not consuming our superfast broadband.

That is why last year we took the unprecedented step of cutting our prices below the regulated level, in return for a longer-term commitment, to encourage more communications providers to upgrade their customers. The move is already having a positive effect on take-up.



We also continue to extend fibre into rural areas – via publicly-subsidised schemes and direct partnerships with local communities. We recently signed our 850th Community Fibre Partnership contract. Overall the scheme has helped us upgrade 98,000 homes and businesses in recent years.

Looking to the future

We are committed to openness and transparency, so we are now publishing a wide range of information about our 'Fibre First' programme on our website, including maps and a list of locations we will be building in over the next 12 months.

We also publish details of the specific exchanges where we've installed, or are currently installing (within the next three months) FTTP. We will update this information every three months.

These are exciting times at Openreach. We want to get decent, reliable and future-proof broadband to as many people as we can, as fast as we can. I look forward to seeing that continue to materialise over the coming year.



Last year we accelerated our build programme and doubled our FTTP footprint. The new network is now available to more than **1.2 million** homes and businesses and we are well on-track to reach **four million** by March 2021.

Mike McTighe, Openreach chairman

We've become independent

On 1 October 2018 we became Openreach Ltd. We're now an independent, wholly owned subsidiary of BT.

Why become independent?

Openreach was created in 2006 to promote competition in Britain's telecoms market. Fast forward 12 years, and the UK is one of the most competitive telecoms markets in the world, with some of the lowest prices in Europe. In 2015, our regulator Ofcom published its Digital Communications Review, which said we must become independent from BT. This was to make sure we could keep this competitiveness going and treat all our customers equally.

What changed?

After the review, we made several promises to Ofcom about things we'd change once we became independent. As a result of these:

- we carried out one of the largest people transfers in UK corporate history to become Openreach Limited, a legally separate, wholly owned subsidiary of BT
- our CEO now reports to Openreach's own independent board and chairman
- we have greater control over our priorities and decision-making (within the strategy and budget set by BT)
- we treat all our customers equally
- we talk to our wholesale customers about important network investments. This includes having a confidential phase that we don't share with other customers or BT
- we're open about our dealings with BT. And we have a strict set of rules in place about how we share information with them
- we have our own distinct branding and a logo that doesn't include any reference to BT.

We're rebranding our buildings, correspondence, workwear and ID cards to remove the BT logo. And we're well on the way to rebranding all of our



During 2018/19, we've been putting these into action. And working closely with the industry to bring them to life.

Making our own decisions

One of the most important commitments we made to Ofcom was to take more control of our decision-making. So, while we still agree our overall budget with the BT Group board, we decide our own priorities and spending. That means we can build strategies and products alongside our customers, giving them more confidence in us in the long term.

Consulting our customers

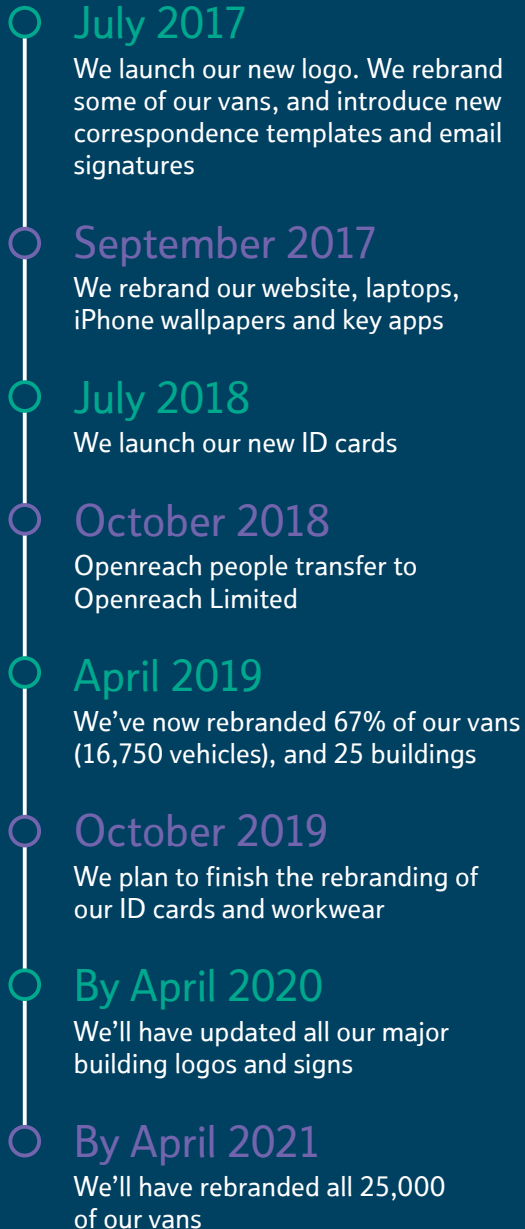
We also make decisions about how we build and maintain our network. And we regularly talk to our communications provider customers to help us tackle the challenges we face doing this. For example, this year we asked for their views on the best way to upgrade their customers from copper to full fibre broadband. Because there's no point in building a new network if no one's using it, or running two networks side by side.

So we asked them:

- how the industry should move customers on to the new network
- how we should eventually retire the existing copper network.

We've become
independent
continued

Rebranding Openreach – a timeline

- 
- July 2017**
We launch our new logo. We rebrand some of our vans, and introduce new correspondence templates and email signatures
 - September 2017**
We rebrand our website, laptops, iPhone wallpapers and key apps
 - July 2018**
We launch our new ID cards
 - October 2018**
Openreach people transfer to Openreach Limited
 - April 2019**
We've now rebranded 67% of our vans (16,750 vehicles), and 25 buildings
 - October 2019**
We plan to finish the rebranding of our ID cards and workwear
 - By April 2020**
We'll have updated all our major building logos and signs
 - By April 2021**
We'll have rebranded all 25,000 of our vans

We've also been asking them about the move from analogue to digital services, and how we can all prepare for when the traditional phone network closes in 2025. We want to make sure the move to digital goes as smoothly as possible in the UK.

We don't expect to get all this for free. So in July 2018 we announced a series of wholesale fibre broadband discounts for communications providers. All we asked for in return was long-term commitments from them to upgrade their customers to the new network.

We've still got work to do. There are more than 15.5 million homes and businesses that haven't ordered a better broadband service through our network yet. But we know that the message is getting out there, and that better fibre broadband will soon benefit the whole UK.



Improving customer service

Better customer service is our top priority. We want to deliver on time, first time, every time. To give customers an experience that's so good, they won't even consider using another network.

What are we doing?

We're working more closely and openly with our communications provider customers to understand their service headaches. And we've been taking action to make these better – so much so that in 2018/19 our customer satisfaction score went from 39.7 to 52.9. This makes it a record-breaking year for us.

In detail

- **We're installing new lines and fixing faults faster than before.** This year we met or exceeded all the minimum service levels that Ofcom set for us. We don't see these as targets – we want to better them. And with tougher ones coming into play each year, we're committing to fulfilling or bettering those too.
- **We're cutting the total number of faults on our network.** We invested around £40 million in maintenance. This meant we saved 194,000 engineering visits by fixing faults before our customers reported them. We're going to carry on investing next year to keep fault numbers down.
- **We're missing less appointments.** When a customer books a visit from one of our engineers, not turning up isn't acceptable. That's why we've reduced the number of missed appointments we're responsible for – from 5.2% in 2016 to a record low of 1.3% today.

This year Ofcom raised our minimum service levels for copper broadband and Fibre to the Cabinet (FTTC) for the first time – as well as setting tough Ethernet service levels. We don't want to just meet these – we're aiming higher, and want to exceed them.



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Over the last 12 months we've significantly improved our Ethernet performance. We've done this by building a regionalised, focused structure around the UK, resulting in faster delivery and better communication.

John Murphy, GM Client Services, Gamma

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- **We're making it simpler to get in touch with us.** We know that in the past people have found it frustrating that they couldn't contact us directly. So we've added an eChat service on our website, and have Twitter and Facebook teams answering customer queries.
- **We're improving our Ethernet services.** It's fair to say that two years ago we weren't the best at delivering Ethernet services (the lines we provide to businesses). But today we're providing more of these circuits than ever before. And we've halved delivery to 35 days, which we believe makes us the fastest at delivering these types of lines in Europe. We're also hitting delivery dates 85% of the time (up from 40% last year), and fixing 95% of Ethernet faults in just five hours. That's quite a feat when you consider that some of these circuits are in the most remote parts of the UK. And the feedback we've had from communications providers and the regulator backs this up.



2018

The year we delivered better service, broader coverage and faster speeds



We halved Ethernet delivery to

35 days

making us the best in Europe. And we're hitting the delivery date 85% of the time (up from 40% last year) by improving tools, automating processes and working smarter

We've cut network faults by 2% and total faults to

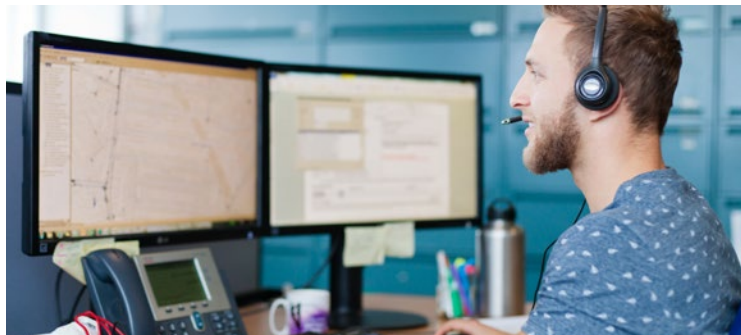
4.4%

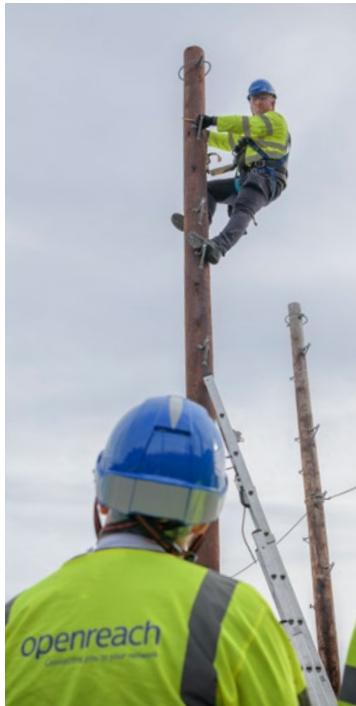


We've had around

51,300

fewer network faults and around 194,000 fewer total faults in 2018/19 vs 2017/18





Missed appointments have fallen from 5.2% in 2016 to record lows of

1.3%

in some of our busiest ever weeks

In 2018/19 we invested around

£40m

into maintaining our network to stop faults before they happen



Customers can trust us to turn up when we say we will more of the time

We keep 98% of appointments with customers – with missed appointments just 1.8% across the year (and some weeks at record lows of 1.3%). We've done this by improving the way our field and control teams work together

Getting fast broadband to everyone

We use the internet to communicate, learn and entertain ourselves, and to do business. Broadband is vital to people's lives. But this means demand for digital services keeps going up. Data use on our network is increasing by 40% each year, mainly driven by people watching on-demand TV like Netflix and Amazon Prime. In fact, it's estimated that video will make up 80% of all internet traffic by 2021. We're also seeing more and more bandwidth-hungry applications – like virtual and augmented reality, as well as online gaming and the Internet of Things.

Fast broadband speeds for all

We believe that everyone in the UK should have access to decent broadband, no matter where they live. That's why we've invested more than £13 billion into our network over the last decade. We've also built a superfast network with download speeds of 24Mb or above. This mainly uses our Fibre to the Cabinet (FTTC) technology and almost 27.5 million homes and businesses can access it. And we've invested in more than 45 Building Digital UK (BDUK) partnerships with local and central Government. These get faster broadband to areas that are too expensive for other private investors, or just not a priority.

All this work has put the UK in a strong position. We have one of the largest digital economies in the G20. And more than 95% of homes and businesses can access superfast speeds. But we don't think this is enough. Under 5% of the country still can't buy a decent broadband service of at least 10Mbps.

Data usage over our network is going up by

40%

each year

We've built a superfast network which almost

27.5m

homes and businesses can now access

How we're tackling the problem

We're investing in our network to expand it into 'not-spots' – more than any other private sector company. And we're keen to help the Government with its ambition to take superfast broadband beyond 95% of the country, as part of its BDUK and Local Full Fibre Networks programmes.

We're going to keep working with BT to help Ofcom and the Government make slow speeds a thing of the past. We're also keen to help the Scottish Government's Reaching 100% Programme, which aims to get broadband of 30Mbps to every property in Scotland by 2021.

Reaching the final 5% with Community Fibre Partnerships

It's obviously more difficult and expensive to get fast broadband to communities in remote, rural areas. But there is an answer: Community Fibre Partnerships. This is where we work with a community to jointly fund fast-fibre broadband in their area.



Getting fast broadband to everyone continued

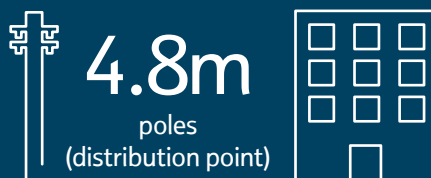
How it works

We support self-dig projects and bring together funding from local authorities, Government voucher schemes and other grants to help make things affordable. And we also contribute towards the costs (following our own commercial model).

So far, we've committed to more than 850 of these projects across the country. Around 98,000 homes and businesses have now had their broadband upgraded after partnering with us.



The Openreach network in numbers



Number of copper cabinets





Openreach in action

Case study: Burncoose House, Gwennap, Cornwall

Gwennap is a hamlet near Redruth in the West Country. It's home to various businesses including Burncoose House, a wedding and holiday venue which relies on online bookings.

What was the problem? Slow broadband speeds were having a real impact on business in this rural community.

How did we fix it? We came up with a way to install FTTP through a combination of private funding, money from Openreach and a local grant scheme.

We then had to connect and extend fibre cables from our nearest network point to the Burncoose site. This wasn't easy – we had to install the cables along a main road which meant road closures and permissions, and added three months to the project. But 11 months later it was finished. And Gwennap businesses could get fast broadband speeds of 70Mbps.

Owner Charles Williams said: "Burncoose is delighted to help promote this long overdue improvement in rural broadband access to 10 separate private business addresses in our small business cluster."

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We now have broadband speeds of 70Mbps and can deal with our existing customers, business rivals and new business on an equal footing to our competitors. We all see this as a hugely important step forward in enabling our businesses to prosper and grow in the countryside

Charles Williams, Owner of Burncoose House

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Openreach in action

Case study: Stoneraise primary school, Durdar, Cumbria

When Stoneraise primary school asked parents and teachers what would make the biggest difference to the school, the response was clear: “better internet!”

What was the problem? Getting a good connection to the tiny village of Durdar wasn't easy. It was more than five kilometres from the nearest exchange.

How did we fix it? We'd recently upgraded our network just a kilometre away. So after the school got some grant funding, we were able to patch them into our fibre network and give them the speeds they needed.

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It's phenomenal. I can't describe how much it's transformed the day-to-day running of the school.

Clem Coady, head teacher

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We're putting 'Fibre First'

Full fibre broadband is faster, more reliable and fit for the future. So we're committed to building Fibre to the Premises (FTTP) as fast as we can, wherever it makes economic sense. We call this 'Fibre First'.

Why is fibre better?

FTTP is fast. It makes transferring and backing up files much quicker. You can stream videos or chat online without being interrupted by a slow connection. It'll help UK businesses, start-ups and home-workers be more efficient and compete around the world. And it'll also support the Internet of Things, health and social care applications, and everything in between.

It's not just about speed though. It's about a consistent and reliable service that'll be there for decades to come. In short, it'll be the platform for the UK's future productivity and prosperity.

How's it going?

This year we're ramping things up. We're increasing our target of reaching three million premises with FTTP by the end of 2020, to four million by March 2021. And we're adding a new ambition to reach up to 15 million by the mid-2020s (as long as the investment conditions are right). We also want to help the Government and Ofcom achieve their plans for nationwide FTTP by 2033.

Our target is to reach

4m

premises by March 2021...

Our ambition is to reach

15m

by the mid-2020s.

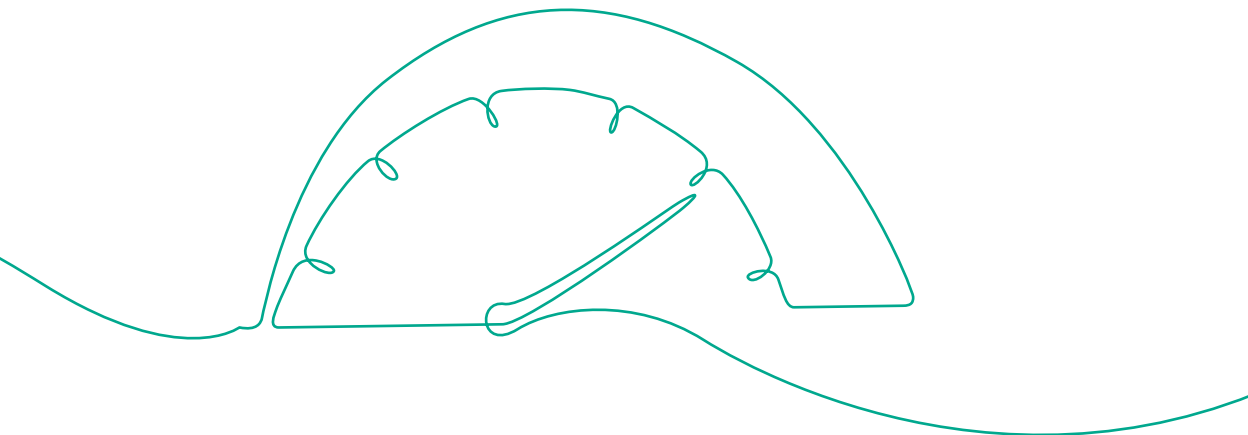
Installing FTTP across the UK is a huge task. The good news is that we're already in the thick of our next big build. We started in lots of locations, from Leeds and Liverpool to Cardiff and Glasgow. In fact, we made FTTP available to 686,000 homes and businesses last year – more than we had in the seven previous years put together. This doubled our footprint to more than 1.2 million.

It doesn't stop there. Last year, with help from BT, we invested around £1.9 billion in our network. This year we'll be investing heavily again.

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Openreach is a fibre business and no-one is more ambitious when it comes to building FTTP. Through our 'Fibre First' programme, we're building a network that delivers more than just speed. It will provide a future-proof, consistent and dependable broadband service that supports the UK for decades to come."

Clive Selley, Openreach CEO



“Being part of the first Fibre City roll out will ensure Nottinghamshire remains at the forefront of digital infrastructure, with all the economic and social benefits that provides.

Having access to the fastest and most reliable broadband is not only great for today, but future-proofed for generations to come. I’m delighted that Openreach is supporting our ambitions for growth in Nottinghamshire.”

Kay Cutts, leader of Nottinghamshire County Council





Our 'Fibre First' programme continued

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In the last year, we've learnt to build at high quality, and at a competitive cost. This year, we'll prove that we can build the network on a vast scale and connect customers seamlessly.

Clive Selley, Openreach CEO

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Preparing the ground

The speed and scale of our 'Fibre First' programme will depend on us being able to show that it works financially. So we're working hard to:

- lower the costs of building and connecting fibre
- upgrade customers to the new platform quickly and at a good price
- encourage changes to regulations and policies that cut costs and red tape.

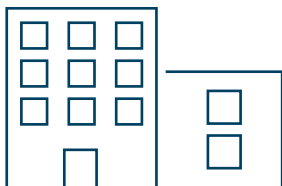
Working with the Government

This year the Government has held several consultations on things that could affect our business. For example, they're looking into changing wayleaves (rights of way we need to carry out work on private land), and making it compulsory for property developers to put full fibre broadband in new homes. These reforms could make a real difference to our 'Fibre First' programme. So we now need to see legislation to make them happen.

We'll keep making the case to the Government for policy changes like these. One that's particularly important to us is the Cumulo tax. This means we have to pay business taxes on our fibre network which have much higher rates than for copper and Fibre to the Cabinet (FTTC) technology.



This year we doubled our FTTP coverage to 1.2m premises, making it available to more than 686,000 homes. That's more than the previous seven years put together



It adds extra costs to our build and makes it harder for us to invest in FTTP. We believe that making full fibre exempt from business rates will encourage more investment across the sector, both from us and other providers. This is something we need to see as soon as possible if the industry is going to achieve nationwide FTTP by 2033.

Our own efforts

We're doing our best to bring our own costs down using our biggest asset – our people and their skills. And we're exploring new techniques to help us build the fibre network faster and more efficiently (you can read more about these on page 34).

We're also working more closely than ever with housing developers. This year we improved things for smaller developments by cutting developers' contributions towards installing FTTP. And we're still doing this for free for new sites with 30 or more properties.

We've already reached almost two million homes with ultrafast technology. But full fibre is our ultimate goal. So we'll keep making sure we're using the best technology available to get us there.



Openreach in action

Case study: Salisbury

**One city, one exchange, one network
– and ultrafast speeds**

What was the problem? Salisbury is the first place in the UK we're aiming to upgrade to ultrafast broadband in a single year. This is hugely ambitious, especially as Salisbury is a medieval city – its narrow streets and listed buildings make installing this much more complicated for our engineers.

How did we fix it? We've built a partnership with Wiltshire Council, and we're working closely with other partners to carry out the build with as little disruption to residents as possible. We hope that this close collaboration, combined with our expertise, will mean the new service is ready to order in the whole city by April 2020.

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I'm delighted that Salisbury will be the first UK city to gain universal access to the gold-standard of the internet – ultrafast full fibre – making it one of the most cutting-edge cities in the country.

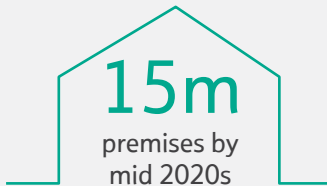
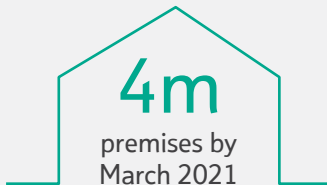
**Philip Hammond,
Chancellor of the Exchequer**

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Full fibre – the facts

FTTP or full fibre broadband is future-proof. So if technology changes, it'll still work as it should. And communications providers are already using it to give their customers download speeds of up to 1Gbps – that's enough bandwidth for a family of four to stream ultra HD or 4k quality movies or TV at the same time, without waiting or buffering.

We want to bring FTTP to...



Our full fibre network build is the

second biggest infrastructure build in the UK after HS2



We're doing this through three programmes

Fibre cities

To increase access to fibre in highly populated areas

BDUK

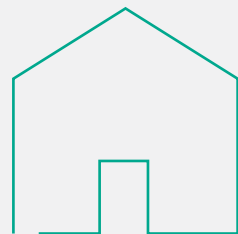
Our partnership with local government to bring fibre to rural areas

New sites

Where we work with developers to make sure every new home has a fibre connection

In 2019/20 we're aiming to make FTTP available to at least a further

1m premises



Embracing new technology

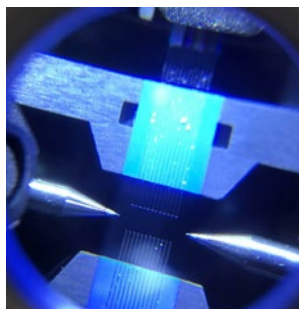
Since Openreach was created we've been at the forefront of the UK's digital revolution. But the challenges of providing 21st-century communications keep getting tougher. So, we're always looking for ways to work smarter.

How do we do that? By always encouraging our people to challenge the way we do things, put forward new ideas and improve the way we deliver for our customers. We also spend millions of pounds on R&D and working with our industry partners and suppliers.

Our latest innovations

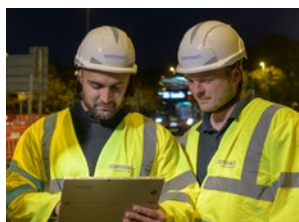
1. Ribbon fibre

We want to build our fibre network as fast as we can. So we need every part to be as efficient as possible. That's why we've been trialling a new type of fibre. Called spider web ribbon fibre, it's more flexible and easier to work with – so we can splice multiple fibres at once. And it's small, so we can better use the space in our underground ducts. We're the first telecommunications company in the world to install this.



2. Text to test

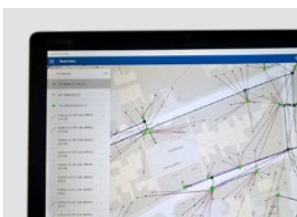
To test a line is working properly we've traditionally used a call-based helpdesk. But we're now using text messages. This has cut our customers' waiting times by up to 30 minutes at peak times. It's also helping our team respond to and fix over 400 more faults a week.





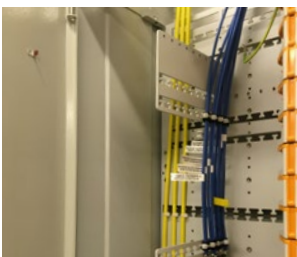
3. Micro ducting

We've been trialling micro ducting which lets us deliver our full fibre network underground through a small access box. This means we can get fibre to some areas more quickly and with less upheaval, as we don't need specialist machinery to dig a narrow trench for new cables.



4. Mobile planning with Orion

Our project engineers often have to grapple with wrong or missing paper records when they're out in the field. So we've developed Orion to help them with this. It's a mobile planning tool that lets them review and update our national network plan using a tablet.



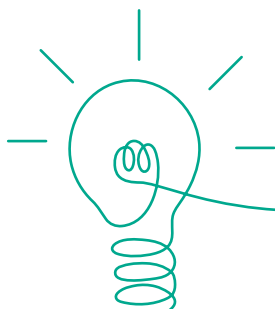
5. Optical distribution frames

A frame is a fibre connection point inside an exchange. We used to have two different types, one for Ethernet and FTTP. Now we've combined these in one high-density frame. This saves floor space in the exchange and gives us room for more connections. The cables are also spliced in the factory which saves us more than a week's work.



6. Optical network termination (ONT)

An ONT is a box of electronics that sits on a customer's wall. It has four data ports and two voice ports. Our customers don't use all of the ports, so we're developing a smaller version with one data port and one voice port. It's a third of the cost of the ones we use at the moment. And we hope customers will be happier too, because it'll take up less room.





7. Qlik analytics

Qlik is software that collates data from multiple systems and presents it in a user-friendly way. This helps our managers get a clearer view of customer orders. We've been rolling out Qlik to our engineers so they get a better understanding of our processes and any potential bottlenecks or problems. This has helped us halve our Ethernet delivery times.



8. New ways to keep the network clear

Blocked and congested ducts are a big problem which often needs major digging work to fix. But we've come up with a smart new way to use existing ducts as pathways to blow cable down. This means we don't have to spend time and money on long notice periods for surveys and digs.



9. GeoRipper

Digging trenches on private land to lay a duct is never popular. So we're road-testing a new piece of kit called the GeoRipper. A blade carves a narrow trench into soft ground, allowing us to lay small fibre cables of up to 150 metres. The GeoRipper is ten times faster than digging these manually, and leaves everything much tidier.



10. Remote nodes

The maximum reach of an FTTP splitter (a bit of kit that divides up fibre from an exchange to properties) is 58 kilometres. So customers living further away than this from an exchange in remote or rural areas can't get ultrafast speeds. We've come up with a new type of splitter (called a gigabit passive optical network splitter) which fits in a street cabinet or small rural exchange. This means we can now get FTTP to customers who are up to 98 kilometres from the exchange.

We encourage all our people to challenge the way we do things and put forward new ideas



Investing in our people

We're really proud of our people power. We have more than 33,000 employees – from network architects and specialists to qualified planners and policy advisors. They're skilled, innovative and resourceful, and their experience, dedication and character are critical to our success.

Engineering the future

Our engineers make up the UK's largest team of telecoms experts. They install, expand, upgrade and maintain our network across the country, in every community. And last year, in the biggest recruitment drive in our history, we hired 3,500 new engineers to help us keep doing this.

In 2019 we're continuing that drive. We're hiring 3,000 more engineers to help us keep improving our network in places like Penzance and the Orkney Islands.

Our apprenticeship programme

We believe we're now hiring more apprentices than any other private sector business in the country. These are great jobs with real career prospects. Our apprentices start on around £21k a year, which goes up to £28k once they've finished their training.

We gave our people

40%

more training in 2018
than the previous year



66

This is a huge expansion in high-skilled, well-paying jobs across the UK and yet another demonstration of the jobs success we've seen since 2010. Because behind every employment number is a person and family whose self-esteem, mental wellbeing and economic circumstances and life chances are all vastly improved by being in the workplace.

Amber Rudd, Secretary of State for Work and Pensions

99

Investing in training

It's not just about bringing in new recruits. We want to keep our talented staff happy and motivated, so they stay with us. And that means giving them great training.

- **In 2018, we ran 40% more training than in 2017.** That included giving more of our engineers the skills they need to carry out lots of different jobs for customers.
- **We've also created new career pathways which map out the opportunities and options available to all our engineers.** These guide them through the skills and experiences they'll need to get to where they want to be.
- **We're building new training facilities across the country.** These help us support our people to make our 'Fibre First' ambitions a reality.
- **We've modernised our approach to training, including designing and building new 'Open Streets' in Yarnfield, Bradford, Peterborough and Livingston.** These are training environments that emulate a typical British street. They give our engineers the perfect setting to practise their skills without working on the live network. We're building or upgrading another eight similar centres across the country (there's more on Open Street on page 42).
- **We've also added to our classrooms, where we cover everything from health and safety to fibre engineering skills like splicing.** We've gone from 94 in eight regional training centres to 108 across 10 centres. And we're adding another 12 classrooms over the next two years.

We're training
more engineers
so we can solve
problems the
first time



It doesn't stop there. 2019 is set to be our busiest year yet for training.

- **We're planning 150,000 training days this year, and another 20,000 with our external partners.** This includes teaching more of our operational teams to use new handheld tablets, and running more courses than ever on fibre jointing, testing, mobile planning and field-based co-ordination.
- **At the same time we've taken on 500 work placement students during the course of the year.** These placements give young people a taste of what it's like to work at Openreach.

We're running another

150,000

training days during
2019/20

What does the future hold?

We're really pleased that people see Openreach as an exciting place to build a career. And that they're eager to help us improve our service and get fibre to more areas. But there's more to do. We're going to keep investing to build a strong and motivated workforce. Because Openreach is all about our people.

Case study: Open Street

What was the problem? We know the best way for our new engineering recruits to learn is in a realistic environment. But it's not always practical to train them on the live network.

How did we fix it? We designed and built four award-winning facilities that include 'Open Street' – a meticulously designed mock-up of a typical suburban street. These give new and existing engineers the chance to improve their skills in an authentic environment. The facilities are in Peterborough, Bradford, Yarnfield and Livingston.

Focus on Peterborough

Our 100,000-square foot training facility in Peterborough was officially opened by the Secretary of State for Work and Pensions, Amber Rudd, in December 2018.

Around 3,500 engineers will pass through its doors during 2019. They can use Open Street to follow a job all the way from the exchange to the customer. Peterborough even has different levels, so they can see what it's like to work in different types of property, like blocks of flats.

Feedback from engineers who've already used the facility has been fantastic. Many say that the street set-up and the ability to act out customer scenarios is perfect for new recruits.

We're hoping our Peterborough facility will be just as successful as our Bradford Open Street, which has had a great first year. More than 5,500 engineers and new recruits have trained there since we launched it in March 2018.

Extending Open Street

Over the next two years, we'll be adding another eight Open Streets including Newport, Bolton, Nursling, Thornaby and Exeter. We'll also be adding new features suggested by engineers and trainers.

Open Street 2018/19



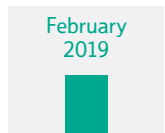
Bradford
Our first Open Street



Yarnfield
Mini Open Street



Peterborough
Multiple dwelling units
and new sites



Livingston
External Open Street



Bolton
Indoor Open Street



Two more by
December 2019



More than
5,500
 engineers and new recruits have trained in our Bradford Open Street since March 2018



Inspiring the next generation

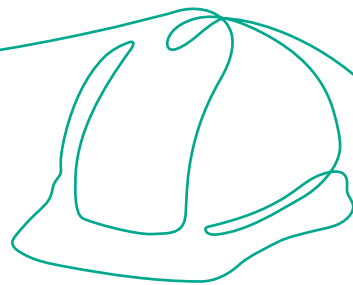
Openreach is a people business. So, it's really important we find ways to pass on our expertise to the newest generation of engineers. This year we launched a new student pack which gives our people resources to educate and inspire budding engineers of the future.

It's backed by the Royal Academy of Engineers, and is just one example of the ways our people are supporting the communities they live and work in.

—66—

We want people from all walks of life to apply for roles at Openreach, to build a diverse workforce that reflects the hugely diverse communities we serve. Last year we successfully recruited more women than ever before – and this year we want to go even further.

Kevin Brady, HR director, Openreach



**Trainee profile**

Elaine MacEachern

Job title:

Trainee engineer

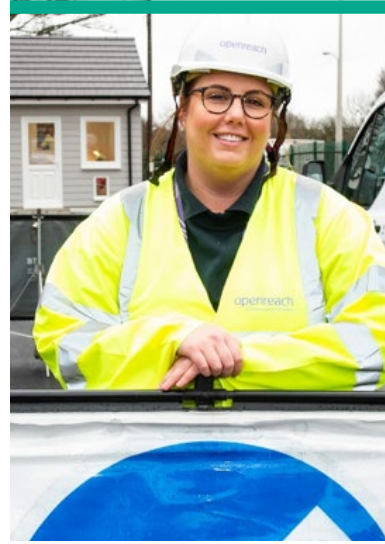
Age: 20

Where do you live?

Lockerbie, Scotland



I'm very practical and love to be on the go. I also love how engineering works as a whole, especially mechanical engineering. I've heard other engineers talk about how it's such a great career and I thought it sounded like the perfect path for me.

**Trainee profile**

Toni Aprile

Job title:

Trainee Engineer

Age: 29

Where do you live? Hawick,
Scottish Borders



I was looking for something to challenge me and keep me thinking, and knew after I read about this job on the website I wouldn't get bored. You can be anywhere – from someone's living room to up a pole in the middle of nowhere, doing a number of different things. I also like that I'm outdoors most of the time.

Better access to our network

Connecting customers faster

We're changing the way we process, install and set up customer orders to deliver FTTP faster. In 2019 we'll keep honing these to make it quicker to connect any customer.

For example, we're training more engineers on our new fibre products to deliver service more quickly. And for customers who need to be connected to our copper network, we're bringing in a new approach to planning that includes improving cabinets where space is tight.

Revolutionising repair

We're changing the way we deal with repair work across the UK. This involves boosting field engineers' skills so they have industry-leading knowledge about products. We're also making sure field and desk teams work together effectively, using local information to get problems fixed.

This new approach makes better use of the skills, expertise and experience of our combined team. And it puts customer experience at the heart of everything we do.

So whatever we need to do to get a service back up and running – whether that means staying longer on a job, getting in some specialist kit or equipment, or just calling in colleagues for help – that's what we'll do. It's about doing the right thing for a customer.

Keeping the network healthy

While fibre is the future, our copper network still plays a huge role in connecting the UK. In fact it's available to over 30 million households. So we're going to keep investing in it, spending £32 million on maintenance to make sure it still does a great job.

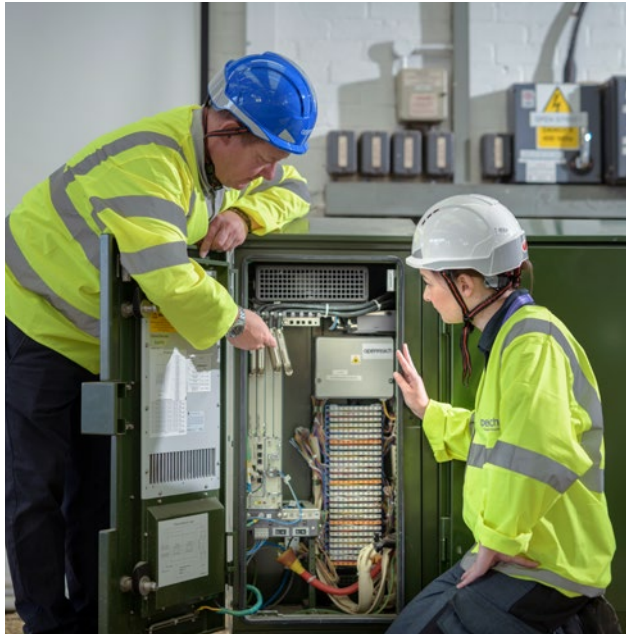
We're still investing in copper innovation. Like introducing hydrogen detector kits to pinpoint holes in our underground network, making them quicker to repair. And new tools to monitor air pressure in exchanges to protect the pressurised cables we use.

We're also fixing voice faults on line cards in exchanges, and bringing in new handheld testers to try to stop lines developing faults after they're connected.

We're investing

£32m

in our copper network



With these plans in place we're confident that we're ready for 2019/20, and that it'll be our most successful year ever. And we have one last secret weapon. Our people. Everyone in our service delivery team is passionate about customers and getting them the best experience possible.

Openreach in action

Case study: How our Ethernet service delivery became the best in Europe

What was the problem? With an inconsistent service record and delivery dates that often slipped, we knew our Ethernet service had to be better.

How did we fix it? We spoke to our customers – both face to face and online – to find out exactly what they liked and didn't like. We then made various changes which cleared the order backlog and halved lead times.

Last year, our Ethernet customer satisfaction scores were rock bottom – with an industry recognised score of -2.9. Fast forward a year and the picture couldn't be more different. Our year-to-date score of +34.4 shows an improvement way beyond others in the industry.



What we changed to improve customer satisfaction

We built stronger

customer relationships

and investigated every case of dissatisfaction



We trained our field and desk teams to focus on **putting customers first**



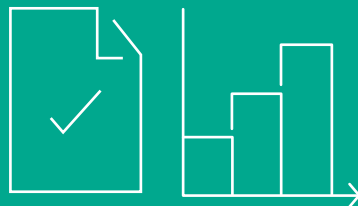
We improved our processes and systems to make it easier to

place and track orders



We followed up on every comment from the

six-monthly customer survey



And a fantastic effort from our **engineers** and **desk-based teams** working together



saw us deliver better quality work consistently and on time

How we did financially

Our network covers the whole UK. But that doesn't mean we're the only network provider. In fact, our service is overlapped by other companies in around half the country. And we expect this to grow as other providers build new fibre connections, which is bound to have an impact on our numbers.

The good news is that we have a volume discount deal with most of our major communications provider customers. This led to another record quarter for fibre sales.

We're also rapidly expanding our FTTP network to provide the next generation of services for our customers. We've seen lots of demand from businesses for Ethernet circuits for the second consecutive quarter.

The numbers

Revenue

Our adjusted^a revenue went down by 4% for the year. This was because of:

- regulated price reductions on FTTC and Ethernet products, and non-regulated price reductions (mainly driven by communications providers signing up for fibre volume discounts)
- a small decline in our physical line base
- a reclassification of costs to revenue.

We partly offset this with 25% growth in our fibre rental base, a 9% increase in our Ethernet rental base and the impact of adopting IFRS 15.

Operating costs

Adjusted^a operating costs were broadly flat. We did have higher costs from recruiting and training engineers to support our 'Fibre First' programme and improve customer experience. These were also affected by pay inflation and business rates, which we offset with efficiency savings and by reclassifying costs to revenue.

EBITDA

Our adjusted^a EBITDA was down 7% for the year.

Capital expenditure

This was £2.1 billion, up 22%. It was driven by investment in our FTTP and Gfast network build and higher year-on-year BDUK net grant funding deferrals, partly offset by efficiency savings.

Free cash flow

Normalised free cash flow^b was down 38%. This was due to the EBITDA decline, higher underlying capital expenditure (not including BDUK grant funding deferrals) and timing of customer receipts.



^a Adjusted measures don't include specific items, as explained in the Additional Information on page 185 of the BT Annual Report.

^b Free cash flow after net interest paid, before pension deficit payments (including the cash tax benefit of pension deficit payments) and specific items.



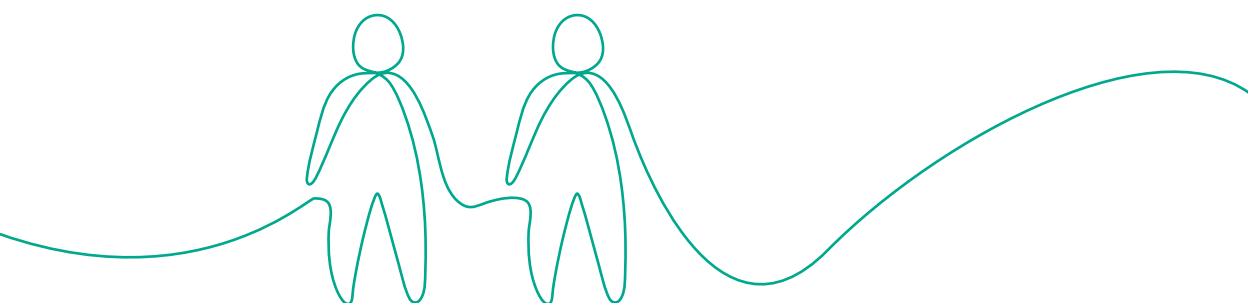
Our priorities for next year

This year has been a pivotal one for us. We became more independent. We changed our systems and processes to make it easier for customers to work with us. We tackled issues to help improve our service. And we came up with new, smarter ways to build and maintain our network.

But next year is set to be even bigger. We've created an ambitious transformation strategy to deliver better service, broader coverage and faster speeds.

We call it our 'Big Bold Plan'. So, in 2019/20 we we'll be focusing on:

- 1 Providing industry-leading customer service
- 2 Delivering the best network
- 3 Increasing our network reach
- 4 Upgrading our network infrastructure
- 5 Building an inclusive customer-focused culture



We're aiming to make FTTP available to at least

1m

premises in 2019/20

1. Providing industry-leading service

We want to be the industry leader that keeps its promises. So we're aiming to revolutionise repair, putting customers at the heart of everything we do. And we're giving the people on the frontline the power to make decisions – and make a difference.

To do this, we're taking on another 3,000 engineers during 2019. And we're investing an extra £32 million in reducing faults before they happen. We want to cut total network faults by at least 1%.

2. Delivering the best network

Across the country we're aiming to take FTTP to at least another one million premises in 2019/20.

We want to make it easier for developers to access our FTTP network. So we'll do our best to get more of them to take this up, and make sure they're happy with the service.

We'll also be championing the move to 'all-IP' across industry. That means preparing our customers for the phone network being switched off in 2025, and withdrawing any products affected by this.

We'll also let other operators build FTTP networks using our ducts and poles. This will get the best FTTP network coverage across the UK.

3. Increasing our network reach

To broaden our coverage we'll look to invest in BDUK (Broadband Delivery UK) and LFFN (Local Full Fibre Networks) projects, and extend the superfast broadband network.

We'll keep exploring the use of the Department for Digital, Culture, Media & Sport's voucher schemes to help rural customers get fast broadband through Community Fibre Partnerships.

We'll also keep investing in local communities to get them the most from these Partnerships, using new engineering techniques like self-dig.

Finally, we will continue to make sure we're using the best technology available to help us meet our 'Fibre First' strategy.

4. Upgrading our network infrastructure

Our 'Fibre First' approach means that we'll always use FTTP as long as it's feasible. But we'll still invest millions of pounds in FTTC to support the growing number of people using it. We'll also keep replacing thousands of our cabinets.

5. Building an inclusive customer-focused culture.

As part of a 'One Openreach' approach, we'll make sure we have effective teams working together across different functions. We want every one of our people to feel empowered to deliver a brilliant experience for each customer, every time.

The last word

Now you know why we call it a big bold plan. But it has to be. We want to be the UK's favourite full fibre provider, giving everyone an experience so good that they won't even think about moving.

We know we can do it. We have unrivalled engineering skill and experience. We know how to build networks. And we're constantly coming up with new and better ways of getting fast broadband to all our customers.

This doesn't mean it isn't a massive challenge. But we have the energy, experience and expertise to do it.

Who we are: our senior management team

1 Clive Selley
Openreach CEO



2 Richard Allwood
Chief strategy officer

3 Kevin Brady
HR director

4 Nigel Cheek
General counsel

5 Catherine Colloms
Managing director,
Corporate Affairs

6 Matt Davies
Chief financial officer

7 Olly Kunc
Managing director,
Service Delivery

8 Colin Lees
Openreach CIO

9 Kim Mears
Managing director,
Strategic Infrastructure
Development

10 Katie Milligan
Managing director,
Customer, Commercial
and Propositions

11 Kevin Murphy
Managing director,
Fibre and Network
Delivery

12 Mark Shurmer
Managing director,
Regulatory Affairs

13 Andy Whale
Chief engineer



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