

# Openreach section of BT Group plc Annual Report & Form 20-F

# 2017

This is the Openreach section of the BT Annual Report for the year ending 31 March 2017 published on 25 May 2017.

The full report is available from the BT website.

# Lines of business

## Openreach

As the people responsible for building and maintaining much of the country's digital infrastructure, we have continued to provide the foundation for Britain's booming digital economy against a backdrop of profound changes to our business.



### This has been a momentous year for Openreach

Over the past 12 months, we've made big strides in our strategy to deliver better service, broader coverage and faster speeds for the UK. At the same time, how we operate and how the market should be regulated have been fiercely debated topics.

The major theme in Ofcom's once-in-a-decade Digital Communications Review became the extent to which we should operate more independently from BT – and in March 2017, a long-term regulatory settlement was agreed that will see us become a distinct, legally separate company within BT Group.

### Fundamental governance changes

Under this agreement, we're gaining more control of our strategy, investments and plans within a strategic and financial framework defined by BT. This means we can make more of our own decisions and be more autonomous, transparent, and accountable to everyone who has a stake in us. This will strengthen our ability to work in partnership with all our customers and deliver the communications infrastructure that is the foundation of the UK's vibrant internet economy.

Central to these changes are a first-class governance structure and a new board with a majority of independent members. I was delighted to be appointed as the first Openreach chair back in November 2016. I'm also pleased to have appointed three independent board members of the highest calibre: Sir Brendan Barber, former general secretary of the Trades Union Congress and current chair of Acas; Edward Astle, a former board member of National Grid and current

member of the Equality of Access Board (EAB); and Liz Benison, chief executive, UK & Europe, Local & Regional Government at Serco.

Our new board will work closely with Clive Selley and his executive team, and we'll be responsible for setting the Openreach strategy whilst overseeing its performance. We'll also make sure the business treats all customers equally and continues to invest in Britain's digital future.

### Rising to the challenge

We're responsible for services that are hugely important to people and businesses throughout the country. The scale of what we manage is huge – overseeing 158m kilometres of telecommunications wires and fibre cables and more than 25,000 customer interactions every day.

We recognise the importance and size of the challenge before us.

We're making progress in moving Openreach forwards and our renewed focus on service is starting to deliver improvements for our Communication Provider customers and their customers. Clive's team halved the number of missed appointments Openreach is responsible for by the end of the financial year. And we've halted a historical rise in faults across our network. We've also continued to build our superfast broadband network for homes and businesses, and we're increasingly upgrading the most remote and hard-to-reach areas of the country in partnership with both government – via the BDUK programme – and with individual communities and housebuilders.

We made our fibre network available to over a million more premises this year and we won't stop there. We're also continuing with our ambitions to scale ultrafast technologies, to make speeds of over 100Mbps available to up to 12 million homes and businesses by 2020.

In 2016 Ofcom reported that the UK already had the highest fibre broadband availability of all the major European economies and, thanks to our open wholesale network, we have one of the most competitive telecommunications markets anywhere in the world. I'm confident that continuing

to invest in our broadband network and working more closely and collaboratively with our customers and the wider industry will provide the national telecommunications infrastructure necessary to support the future growth of the UK economy, something that will be particularly important as we leave the EU.

Financial investment in our network alone will not deliver the change we need – we'll invest in our people too. This year we'll expand our engineering workforce by hiring 1,500 trainees and we'll train more engineers to complete more tasks in a single visit. That will play a pivotal role in ensuring we meet our customers' expectations.

Finally, I want to address the issue of Deemed Consent. Ofcom's investigation into Deemed Consent practices showed that in the past, Openreach made a number of mistakes when processing orders for high-speed business connections. This simply shouldn't have happened and we apologise wholeheartedly to the communications providers affected. During my short time in Openreach, I've seen significant improvements being made to the way we deliver these connections and we are determined to make sure the same mistakes aren't repeated in future.

We're committed to fixing the issues of the past, delivering better service, and investing in our network – and we recognise that to be successful in these goals, we need to work in closer partnerships with our customers, the wider industry, regulators and government. By working as a team, we can achieve success collectively and build the telecommunications infrastructure that will power Britain's leading digital economy for years to come.

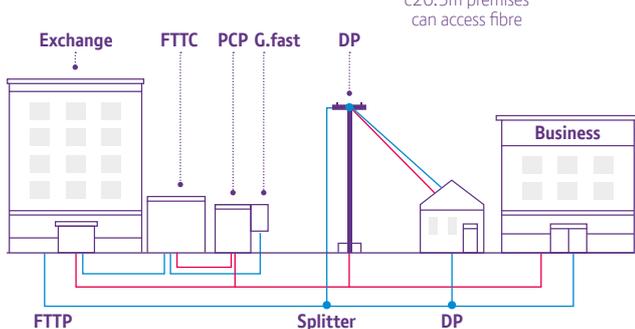
**Mike McTigue**  
Chairman  
11 May 2017

## We build the network that connects Britain's homes and businesses to the future.

We're responsible for providing services over the local access network, sometimes referred to as 'the last mile', installing and maintaining the fibre and copper communications networks that connect homes and businesses.

Communications Providers (CPs) access our network on equivalent terms, which means they have access to the same products, prices and levels of service. They use our network to deliver services ranging from home broadband, television and telephone to high-speed data connections for businesses of all sizes.

### Openreach local access network



c5,500 exchanges	c97,800 PCPs	c4.7m DPs	c30m premises
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<span style="color: blue;">—</span> Fibre	<b>FTTC</b> Fibre-to-the-cabinet
<span style="color: red;">—</span> Copper	<b>PCP</b> Primary connection point
	<b>FTTP</b> Fibre-to-the-premises
	<b>DP</b> Distribution point
	<b>G.fast</b> G.fast side pod

### Delivering a more independent Openreach

We're pleased that the proposals to further enhance the organisational structure of our business have been accepted by Ofcom as a pragmatic solution to meeting its DCR concerns. We're fully committed to implementing the requirements of the Commitments and Governance Protocol which includes a focus on compliance, increased transparency and improved customer engagement as quickly as possible.

We've already started to introduce new governance and measures, where possible and appropriate, in advance of full implementation of the DCR agreement. For example, we've made a number of governance reforms to make Openreach a more transparent and autonomous business. In November 2016 we appointed our first chairman, Mike McTighe, who is leading our newly-formed board.

The board has a majority of independent members and will be responsible for setting Openreach's strategy and overseeing its performance. It will make sure we treat all customers equally while investing in better service, broader coverage and faster broadband speeds for the UK.

Other activity underway includes the development of a new CP consultation process for major new strategic investments and the redesign of the Openreach brand to remove the reference to BT Group and the associated logo.

We're also preparing for the implementation of the remainder of the DCR agreement, including incorporation of Openreach Limited and the transfer of employees to it, once the preconditions have been met.

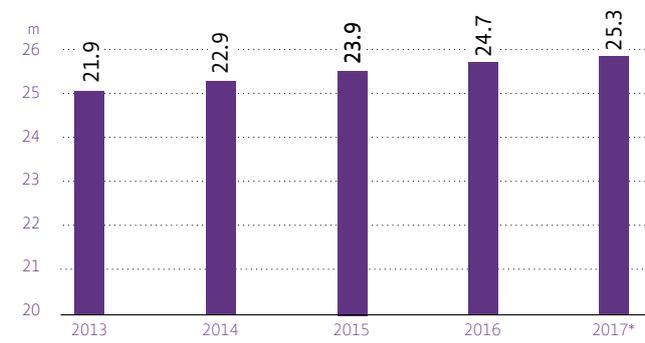
### Markets and customers

The UK has the highest share of GDP generated by the digital economy of any country in the G20, and the highest superfast availability and take-up compared to our major European peers<sup>a</sup>. We're playing our part in this success story by building and operating the largest superfast network in the country.

At the end of December 2016 there were 25.3m broadband lines in the UK. 80% of these, excluding Hull, use the Openreach network with the rest mainly on Virgin Media's cable network.

### Total UK broadband market

As at 31 March



\* As at December 2016.  
Source: Company data.

Our customers are the CPs who provide communications services to end customers, and property developers building new properties.

<sup>a</sup> France, Germany, Italy and Spain.

There are more than 580 CPs using our network. They operate in three markets:

- **Consumer** – made up of households using fixed-line broadband and telephone services. Our largest customers include BT's Consumer division, Sky and TalkTalk;
- **Business** – consisting of the 5.5m businesses in the UK. Most of our customers serve business clients; and
- **Infrastructure** – including firms building network infrastructure to data centres and mobile cell sites, and property developers connecting new developments.

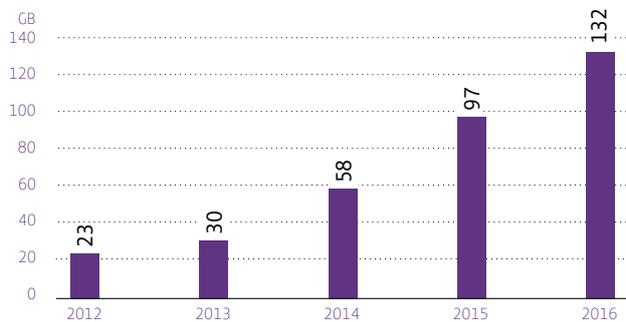
We also have relationships with communities throughout the UK who co-fund investment in fibre networks with us through Community Fibre Partnerships.

The market trends are:

- ongoing demand for connectivity as total fixed broadband ownership steadily rises;
- increasing data usage, propelled by video streaming driving demand for faster connections and major investment in backhaul capacity and network reach;
- cloud computing increasing corporate demand for connectivity;
- a fast-growing data centre market creating a new need for high-capacity circuits (1Gbps or more); and
- strong demand for Ethernet and optical service products as businesses seek better speeds and reliability.

#### Average monthly fixed data usage per residential connection

As at 30 June



Source: Ofcom Connected Nations reports 2013-2016.

#### Competitors

Our main competitors are other network builders, the largest being Virgin Media. Its cable network covers around half of UK homes, with plans to reach around 17m premises by 2019.

Other companies are building their own fibre access networks, reflecting the competitive nature of the market. CityFibre, Hyperoptic and Gigaclear are deploying fibre-to-the-premises across urban and rural areas, increasing the competition we face.

Competitors in the business and infrastructure markets include Virgin Media, Colt Group and Vodafone. CityFibre's prominence in this market continues to grow as it fulfils its plans to cover 50 'Gigabit cities' by 2020.

Pricing, service delivery and product innovation remain competitive themes. The 'price per Gigabit' is being pushed down by intense competition, particularly in urban areas. The introduction of a Dark Fibre product later in 2017 will increase price competition further.

#### Products and services

We provide network access and engineering services as well as four main products and services: copper access, fibre access, Ethernet and optical, and infrastructure solutions. Our network can carry broadcast and on-demand internet protocol television (IPTV). Our multicast service over fibre cuts the cost of broadcast TV. We also provide access to our network via our ducts and poles and will be launching a new Dark Fibre product in October 2017 (subject to CAT ruling).



#### Copper access

- **Wholesale Line Rental (WLR)** lets CPs offer phone services to their customers using our equipment and copper network. They pay to use the lines between our exchanges and the customer premises.
- **Local Loop Unbundling (LLU)** provides CPs with a direct connection to the local network, or local loop. CPs can install their own equipment in, or near to, our exchanges, and use it to provide phone and broadband services to their customers.

#### Fibre access

Our wholesale fibre product is called Generic Ethernet Access. We offer a number of versions:

- **Fibre-to-the-cabinet (FTTC)** uses fibre from the exchange to the street cabinet and the existing copper network for the final link to the customer.
- **Fibre-to-the-premises (FTTP)** uses fibre all the way from the exchange to the property and offers ultrafast speeds from 100Mbps up to 1Gbps. We've launched 500Mbps and 1Gbps speed tiers for smaller businesses needing ultrafast speeds at lower price points than Ethernet.

This allows us to offer superfast broadband (speeds over 24Mbps) via FTTC and FTTP and ultrafast broadband (speeds over 100Mbps) via G.fast and FTTP.

## Lines of business continued

### Openreach continued

#### Ethernet and Optical

CPs use these high-speed fibre connections to build and extend their networks and provide high-quality, high-bandwidth services to businesses and the public sector.

- **Ethernet Access Direct (EAD)** offers competitive services, from 10Mbps to 10Gbps, to all UK businesses and infrastructure markets.
- **Optical Spectrum Services (OSS)** are scalable wavelength solutions offering up to 100Gbps at any distance.



#### Infrastructure solutions

Our infrastructure solutions let CPs build their own networks. They allow third parties to request rearrangements of our network and for us to work on their networks.

- **Flexible Co-mingling** allows CPs to place their equipment in our exchanges.
- **Physical Infrastructure Access (PIA)** lets CPs use our ducts and telephone poles to deploy their own fibre networks. PIA has been available since 2011.
- **Mobile Infill Infrastructure Solution (MiiS)** lets CPs install their radio equipment in special cabinets linked to antennas on telephone poles and use their spectrum to improve mobile coverage.
- **Network rearrangements** help third parties to progress their projects by moving or removing our network.

## Performance in the year – strategic

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### Delivering great customer experience

The internet is an essential part of modern life. Every year, customers expect more from the service we provide, and we're committed to meeting their needs.

The table on page 87 shows Openreach's service performance on a number of key measures known as Minimum Service Levels (MSLs). These are quality of service standards for installation and repair which are set by Ofcom and increase annually. In May 2016, six Ethernet MSLs were added to the existing set of 60 copper MSLs. We publish this data quarterly with additional levels of detail.

This year we exceeded all 40 of Ofcom's copper MSLs that were due in the year, for the third year in a row. And we remain ahead on the other 20 which are measured to March 2018.

We keep making progress with our Ethernet delivery, improving quality of service, providing more Ethernet circuits than ever before, and reducing the average age and number of jobs in our workstack.

Even so, we're disappointed that we've missed one of the Ethernet MSLs due to the impact of our most complex Ethernet orders, where we experience delays that aren't fully within our control such as road traffic management.

We launched the 'Better service' campaign to make real improvements in our customer service. We halved missed appointments by the end of the financial year. And we invested £3.2m to improve resilience and halt a historical rise in network faults. We also cut the number of customers waiting over 90 days for new orders by 60%<sup>a</sup>.

Our Customer Satisfaction Score is provided by end customer surveys from our CP customers. The CPs' sampling strategy has changed through the year making a like-for-like comparison difficult and has resulted in our performance being under reported. We're working with the CPs to standardise sampling to enable future year-on-year comparisons.

Right First Time, improved by 5.1% (down 6% in 2015/16), focusing particularly on time to repair. We completed 79% of repairs on time<sup>b</sup>, a four percentage point increase compared with last year, and reduced the average time to restore service by five hours. We see the MSLs as a baseline and set ourselves a more challenging RFT target because we know there's more to be done to deliver the service our customers expect.

We've proactively improved our PIA processes by providing greater flexibility and self-service options. These include a digital map of our network which makes it quicker and easier for CPs to understand where our ducts and poles can help them to roll out fibre.

<sup>a</sup> For copper-based services.

<sup>b</sup> For LLU, WLR, PSTN and NGA services.

- ^ Improvement
- > Steady performance – maintaining focus
- ∨ Further improvement needed – plans in place to get back on track

## Openreach performance against service responsibilities

	Movement		Q4 2016/17	Q4 2015/16
<b>Home and smaller businesses</b>				
Average time to install with an engineer (working days)	^		13.22	14.44
Average time to install without an engineer (working days)	>		9.64	9.49
Installation requiring an engineer where wait is 22 days or longer for an appointment	^		0.37%	1.12%
Average time for first available appointment date for new installation (working days)	^		6.82	8.51
New lines requiring an engineer visit not installed 31 days past target date	∨		1.65%	1.34%
Average time to fix faults Maintenance level 1 (working days)	^		1.99	2.82
Average time to fix faults Maintenance level 2 (working days)	>		1.72	1.94
Faults not cleared after 31 days or more Maintenance level 1	^		0.62%	1.60%
Faults not cleared after 31 days or more Maintenance level 2	^		0.94%	1.79%
	Movement	Ofcom minimum standard	Q4 2016/17	Q4 2015/16
<b>Home and smaller businesses Minimum Service Levels</b>				
New lines installed on time (WLR3)	^	89%	94.55%	93.84%
New lines installed on time (MPF)	^	89%	94.14%	93.02%
First available appointment date for new installation (working days) 12 days or less (WLR3)	^	79%	92.91%	86.54%
First available appointment date for new installation (working days) 12 days or less (MPF)	^	79%	95.38%	89.65%
Faults fixed within agreed time Maintenance level 1	^	77%	86.54%	74.53%
Faults fixed within agreed time Maintenance level 2	^	77%	81.87%	76.14%
			Ofcom minimum standard	2016/17 full year
<b>Larger business Minimum Service Levels</b>				
Average time to install (working days)			46	41.4
Delivery date certainty			80%	85.4%
Circuits provided in 30 working days			40%	57.4%
Circuits provided in more than 159 working days			3%	3.2%
Average time to initial CDD <sup>a</sup> (working days)			61	40.2
Faults fixed within agreed time			94%	94.2%

### Notes:

The homes and smaller businesses tables compare performance in the quarter and are not annual measures.

The larger business measures have had an 'adjustment' applied to them in line with the Ofcom measurement methodology.

<sup>a</sup> Contractual Delivery Date.

2

### Investing for growth

We've invested £11bn in Britain's digital infrastructure over the last ten years, committing over £3bn to create a fibre network that provides affordable high-speed broadband to the vast majority of the UK.

Our ambition is to deliver ultrafast speeds to 12m homes and businesses by 2020 using FTTP and G.fast. Our G.fast technology can deliver ultrafast speeds of 300-500Mbps over existing copper wires with minimal disruption. This technological capability will allow us to offer speeds of over 100Mbps to 10m homes by 2020. After a successful trial we're rolling out G.fast to 17 locations as part of our pilot deployment phase.

We keep extending, upgrading and maintaining our copper network which underpins most of our services in the UK. We've raised preventative maintenance spend by 104% compared to last year and this will make our network more weather resilient in future.

Our new Dark Fibre product will launch in October 2017 (subject to CAT ruling<sup>a</sup>). This will provide a dedicated, unmonitored, unlit optical fibre path between two sites up to 86km apart. CPs can use this to build connectivity solutions.

### Investing in our people

We've a workforce of 30,400 people, including skilled network engineers and planners who maintain our access network.

This year we invested in hiring over 1,500 people including around 250 apprentices and graduates. Our apprentices are trained on a wide range of skills relating to provision and repair activities to improve customer service. Our graduates complete a variety of project roles in order to learn the business, before taking on roles within our operational teams.

Most of our new recruits, including 50 apprentices, have moved into front-line customer service engineering roles across the country. Another 75 will increase our in-house civil engineer capability. We're training 100 apprentices on fibre jointing to improve Ethernet delivery and another 65 have been trained on connectorised fibre for our superfast broadband network build.

We also launched our Fibre Academy and showcase to give our apprentices and engineers the training and hands-on experience they need.

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### Transforming our costs

We keep reviewing the way we work, simplifying our business to cut the cost of delivery while improving customer experience.

This year we:

- completed a 'civils insourcing trial'. As a result we're now insourcing certain civils activities to improve customer experience;
- consolidated desk-based teams from over 400 locations down to 32 larger 'centres of excellence'. This will better support the sharing of best practice and create better working environments; and
- cut the number of Ethernet orders awaiting completion by improving our operational processes.

### Performance in the year – operating

This year we made our fibre network available to a further 1.1m premises. We achieved 1.8m fibre broadband net additions, with a total of 7.7m homes and businesses in the UK choosing to take a fibre service. We grew our Ethernet base by 13% and exceeded all the increased copper MSLs set by Ofcom.

External CPs accounted for 923,000 of the 1.8m fibre broadband net additions, an increase in share of 4% from last year, demonstrating the market-wide demand for fibre.

The physical line base decreased by 153,000 following a 29,000 increase the year before<sup>b</sup>.

### Investing in fibre

We keep investing heavily in our fibre network which now passes more than 26.5m premises nationwide.

This year we launched new ultrafast products for SMEs and business parks. Our FTTP network is the largest in the UK and we delivered more FTTP this year than in any previous year.

In May 2016 we launched our offer to connect fibre-to-the-premises for free to all developments of new sites with over 100 plots, then lowered the threshold to over 30 plots<sup>c</sup> in November 2016.

<sup>a</sup> This relates to our appeal to the Competition Appeal Tribunal of Ofcom's BCMR market review decision – see page 40. 'Other regulatory decisions and activities – Business connectivity market and cost attribution'.

<sup>b</sup> Last year's report stated a 2,000 line increase and this has been amended to include FTTP lines.

<sup>c</sup> New sites with over 30 plots registered from 10 November 2016.

### Extending our reach

We're still working in partnership with the BDUK programme to bring fibre broadband to communities who can't currently access it, completing 39 of our 45 contracts this year. We're also deploying our Superfast Extension Programme (SEP) in partnership with the Government.

We're committed to working with local communities to deploy co-funded solutions under our Community Fibre Partnerships programme. To date we've worked with over 200 communities, and have over 100 more in the pipeline for upgrades

In last year's report we set out our top priorities for this year. In the table below we report back on what we've achieved.

### Review of last year's priorities

WHAT WE SAID	WHAT WE DID
<b>We said we'd achieve our goal of 95% on-time installations by the end of December 2017, ahead of Ofcom's minimum service level.</b>	We're on track to hit this RFT goal.
<b>We said we'd work with Government to help take fibre broadband to 95% of the country by the end of December 2017.</b>	We've made our fibre network available to another 1.1m premises this year, bringing the total to 26.5m across the UK.
<b>We said we'd get ultrafast broadband to 10m premises, with an ambition of 12m, by the end of 2020.</b>	We've built ultrafast broadband to 500,000 premises and have more than 98,000 customers, a 77% increase compared to last year.
<b>We said we'd recruit 1,000 frontline engineers to deliver further improvements in service.</b>	We recruited over 1,500 people, mostly engineers, to enable faster repairs and provide greater contingency. Around 250 of these new recruits were apprentices and graduates.
<b>We said we'd work to deploy FTTP using microfibre technology.</b>	We've introduced connectorised FTTP technology and halved the mean time to provide on our existing network this year.

### Ofcom investigation into historical use of Deemed Consent

On 26 March 2017 Ofcom published the findings of its investigation into the historical use of Deemed Consent by Openreach. Deemed Consent is an agreed process between Openreach and its communications provider (CP) customers, which allows Openreach to halt the installation and reschedule the delivery date for providing dedicated business services (known as Ethernet) in a number of specific circumstances which are beyond its control. Ofcom found that Openreach had breached its contractual and regulatory obligations by inadequately and retrospectively applying Deemed Consent to reduce compensation payments to CPs between January 2013 and December 2014.

As a result of the findings, Openreach has agreed to compensate CPs and Ofcom has imposed a fine of £42m, reflecting the seriousness of the failings. This includes a 30% maximum discount for BT admitting its liabilities and agreeing to compensate the affected CPs in full. The precise amount of these compensation payments will result from discussions with the affected parties and is currently estimated at £300m. The fine and associated compensation payments are treated as a specific item charge in this year's income statement, with the cash expected to be paid in 2017/18.

We take this matter very seriously and we've put in place additional controls to safeguard against this happening again and to make sure that we're providing the highest standards in serving our customers.

## Performance in the year – financial

Despite around £230m of regulatory price changes, we held revenue flat thanks to strong demand for fibre products.

Year ended 31 March	2017 £m	2016 £m	2015 £m
Revenue	5,098	5,100	5,011
Operating costs	2,465	2,441	2,414
EBITDA	2,633	2,659	2,597
Depreciation and amortisation	1,369	1,301	1,348
Operating profit	1,264	1,358	1,249
Capital expenditure	1,573	1,447	1,082
Free cash flow	1,349	1,415	1,497

Revenue was flat (2015/16: 2% increase) with a 35% increase in fibre broadband revenue being offset by regulatory price drag which had an overall negative impact of around £230m, equivalent to 5% of our revenue.

Operating costs were up 1% (2015/16: 1%) reflecting the investment we made to deliver our copper minimum service levels, halve missed appointments by the end of the financial year and upskill our workforce. We also saw higher service level guarantee costs associated with the delay in fulfilling a number of older and more complex Ethernet orders.

EBITDA decreased 1% (2015/16: 2% increase). With depreciation and amortisation up 5% (2015/16: down 3%), operating profit was down 7% (2015/16: up 9%).

Capital expenditure was £1,573m, up £126m or 9% (2015/16: up £365m or 34%) reflecting our ongoing investment in fibre coverage and speed, and the delivery of more complex Ethernet circuits. This was after gross grant income of £159m (2015/16: £320m) directly related to our activity on the BDUK programme build and offset by the deferral of £185m of the total grant income (2015/16: £227m) due to strong levels of fibre broadband take-up. This is primarily because we increased our base-case assumption for take-up to 39% in BDUK areas and under the terms of the programme, we have a potential obligation to either re-invest or repay grant funding depending on factors including the level of customer take-up achieved.

Operating cash flow decreased 5% (2015/16: 5% decrease) largely due to the timing of BDUK funding receipts and other working capital movements.

## Priorities for the year ahead

Over the next 12 months, we'll continue to invest in our fibre network and ensuring a great customer experience.

Our top priorities for 2017/18 are:

### Connecting Britain to the future

- getting ultrafast broadband to 10m premises using G.fast and an ambition to reach a further 2m via FTTP, by the end of 2020; and
- working to deploy FTTP using microfibre technology.

### Delivering a great customer experience

- achieving our RFT goal of 95% on-time installations by the end of 2017, ahead of Ofcom's minimum service level;
- recruiting 1,500 frontline engineers to deliver further improvements in service; and
- driving higher investment in fibre skills and growing our Fibre Academy.

### Working with Government and industry

- working with the Government to support its objective for a Universal Broadband Commitment; and
- launching a consultation with industry to inform on future FTTP planning.