Robert Kenny

A review of Labour's broadband policy

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About the author

Rob Kenny has extensive experience on issues of broadband policy and regulation, and has undertaken numerous projects in this area for governments, regulators, trade bodies and telcos. He was an advisor to Malcolm Turnbull, then Australia's Minister for Communications. Previously he headed strategic planning for Hongkong Telecom, and corporate development for Level 3.

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Executive Summary

Labour recently announced its broadband policy. It proposes to nationalise Openreach and other parts of BT, in order to deploy fibre-to-the-premise (FTTP) nationwide, and offer free broadband services to customers (consumers and businesses). However, there are serious problems with this policy:

Labour has underestimated the cost to the taxpayer. While it suggested a one-off cost of £10bn and ongoing costs of £0.6bn annually, these figures omit a number of significant items. The true figures are likely to be at least £40-50bn and £2.5bn respectively.

There will be significant damage to the rest of the telecoms industry. Broadband is critical to the business model of most fixed operators. Without it, there will be bankruptcies and price hikes for services such as voice and TV. Commercial FTTP investment is likely to cease.

While free FTTP is superficially attractive, the benefit of 'free' to customers is likely to be offset by increases in prices for other telecoms services. Further, because of the time required to nationalise much of BT, the arrival of FTTP will be delayed for many customers. (Absent the policy, rapid commercial deployment already under way will deliver FTTP to most). Historic evidence of state-owned telecoms monopolies suggests that customers will likely receive worse service levels.

From a social perspective the policy has significant regressive aspects, in that those benefitting most from FTTP will be large, prosperous households with many devices. Conversely, those without broadband (often disadvantaged households) will see no benefit but will see public money spent on FTTP. The policy is unlikely to make material difference to broadband uptake, since the key barriers are lack of skills and interest, not price.

BT employees transferring into the new British Broadband may benefit from greater security, perhaps offset by lower pay. Employees of other broadband providers face a significant risk of redundancy.

The policy is likely to lead to a politicisation of broadband, as happened with Australia's National Broadband Network.

In sum, Labour's policy is a radical solution to an issue (lack of FTTP) which is already being addressed by commercial players, largely without the need for government funding. The risk of damaging unintended consequences is high.

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Introduction

On 15th November the Labour Party announced its broadband policy.[1] Key points of this policy are:

- Nationalisation of a substantial part of BT (specifically Openreach and parts of BT Technology, BT Enterprise, and BT Consumer)
- Deployment of fibre-to-the-premise nationwide by 2030
- Free broadband service for all consumers and businesses

Labour proposes a new entity, British Broadband, with an infrastructure arm (British Digital Infrastructure) and a services arm (British Broadband Service). Deployment of FTTP would begin in areas with the worst broadband today, and work through to the large urban areas that are generally better served.

While Labour's policy has been welcomed by some, it has also been criticised, particularly on the grounds of cost and its impact on the telecoms industry.

This paper considers the policy in the round, looking not just at cost and industry issues, but also at the impact on consumers, business customers, employees and so on.

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[1] Labour, *Full Text of John McDonnell's Speech on Labour's British Broadband announcement*, 15 November 2019; Labour, *Full text of Rebecca Long Bailey's speech on Labour's British Broadband announcement*, 15 November 2019

Current state of UK broadband

To understand the impact of the proposed policy, it is important to understand the starting point - the current state of play for UK broadband.

Market structure

UK consumers have a wide choice of broadband providers. The four largest ISPs are (in descending order) BT, Sky, Virgin and TalkTalk. Virgin uses its own cable network to provide service, while the other three use the access network of Openreach, an independent subsidiary of BT.

Openreach provides the 'last mile' – the connection between the customer premise and an exchange. The ISPs using Openreach lease this last mile, and then combine it with an array of other elements in order to provide broadband to the end user. These elements include:

- Backhaul (the connection from the relevant exchange to the ISP's national network)
- Caching (local storage of content to improve service)
- Transit (connection to other ISPs nationally and internationally)
- Network management (ensuring traffic flows smoothly)
- Customer care (signing up new customers, disconnecting departing customers, handling reported faults etc)
- Pricing
- Billing
- Marketing

In addition to the large four, there are also many smaller players, some with their own networks (the 'alt-nets') and some making use of Openreach. In aggregate these represent 12% of the market. [2]

Note that while Openreach provides critical inputs for broadband, its network also underpins many other telecoms services, including fixed and mobile voice.

Broadband availability

Both Openreach and Virgin have invested substantially in faster broadband over a number of years. More recently, alt-nets have started to make a material contribution too. Today over 95% of households can access superfast (30 Mbps+) broadband, and 54%

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[2] Ofcom, *Communications Market Report – Interactive Data* (p16), 4 July 2019
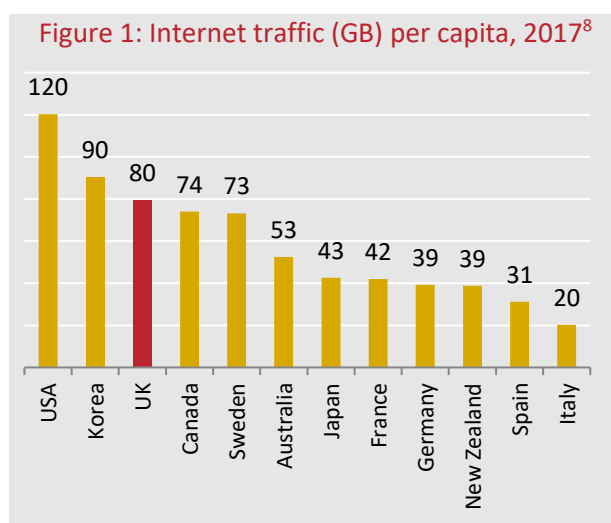
can access ultrafast (300 Mbps+).[3] Over the last three years, the average line speed used by customers has roughly doubled.[4]

The UK has not deployed FTTP as fast as other countries, however. Coverage is currently around 8%[5] compared to an EU28 average of 36%.[6] That said, rapid roll-out of FTTP is now under way, with announced deployment targets by various operators totalling 30m premises. (This roughly equals the number of UK premises, but does not translate to 100% coverage, since there will be some overlap between the networks and not all targets will be met). Openreach alone has an ambition to pass 15m premises by the mid-2020s.[7]

Broadband usage

While the UK lags on availability of FTTP, this does not appear to have been a constraint on internet usage, which is ultimately more important. Indeed, the UK's internet traffic per capita is well above that of a number of countries with substantial uptake of FTTP, notably Spain, France, Japan and Sweden.

Usage of online applications overall is high in the UK (#5 in the EU28, according to the EC[9]). The UK also leads Europe in e-commerce, with online sales almost as great as France, Germany and Spain combined.[10]

Figure 1: Internet traffic (GB) per capita, 2017[8]

Country	GB per capita
USA	120
Korea	90
UK	80
Canada	74
Sweden	73
Australia	53
Japan	43
France	42
Germany	39
New Zealand	39
Spain	31
Italy	20

Conclusion

This is not to say there are no issues to address in UK broadband. On the contrary, there are significant pockets where broadband remains very poor. However, overall the market is performing well for the great majority of UK citizens, and it is this context that a proposed radical and comprehensive intervention needs to be assessed.

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[3] Ofcom, *Connected Nations Update, Summer 2019*, 17 September 2019
[4] Ofcom, *Communications Market Report – Interactive Data* (p16), 4 July 2019
[5] Ofcom, *Connected Nations Update, Summer 2019*, 17 September 2019
[6] FTTH Council Europe, *New Market Panorama and Forecast data at the FTTH Conference 2019*, 14 March 2019
[7] BT, *Results for the full year to 31 March 2019*, 9 May 2019
[8] Cisco, *VNI forecast highlights tool* [accessed 29 November 2019]
[9] EC, *Use of Internet Services*, 2019
[10] Elias Jahshan, "Mainland Europe to outstrip UK in ecommerce growth", *Retail Gazette*, 19 July 2019

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Impact on taxpayers

At announcement, Labour said regarding the cost of the policy:

> "The full-fibre network will be paid for with £15.3 billion out of our Green Transformation Fund. That's based on a £20.3 billion national monopoly costing by Frontier Economics, taking off £5 billion from the Government's not-yet-spent commitment. The maintenance costs of the network [will be] around £230 million a year." [11]

Labour subsequently acknowledged[12] that this £230m figure (derived from a Prism & Tactis report) was on an unconventional annualised discounted present value basis, and that on a more typical cash basis the figure would be £579m per year.[13] Even this cost is likely to be an underestimate, for reasons discussed below.

However, the cost to build and maintain the fibre network is only a small part of the cost of Labour's policy. In addition, the tax payer will have to carry the cost of:

- Acquisition of Openreach and other parts of BT
- Services currently provided by ISPs (as described above)
- Tax from Openreach and other ISPs foregone

That said, there will be some offsetting income from non-broadband-related services provided by Openreach. These issues are discussed in turn below.

Sources of funds are outside the scope of this paper. Labour has said sources will include taxes on multinationals, further debt and so on. Whatever funds are received from these sources will be fungible, and could instead be spent on the NHS, housing, social care and so on. Thus the broadband policy needs to stand on its own merits – indeed, it needs to be a better use of government funds than further investment in these other areas.

(Some nationalisations can be seen as an investment, with the government acquiring an entity, and then enjoying the profits generated by that business. However, Labour's proposal is to acquire an entity and then destroy its business model by giving away its main product for free).

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[11] Labour, *Full Text of John McDonnell's Speech on Labour's British Broadband announcement*, 15 November 2019

[12] Labour, *Funding real change*, November 2019

[13] For a fuller discussion, see Full Fact, *Labour corrects broadband cost figure*, 25 November 2019

Cost to deploy UK-wide fibre

Labour takes its cost of nationwide FTTP from a report for the National Infrastructure Commission, a credible source. [14] That said, any such figure is inevitably an estimate, and opinions differ. BT Chief Executive Philip Jansen has suggested a cost of £30-40bn.[15] (While clearly an interested party, BT do have direct knowledge of FTTP costs, since they are actively deploying it now).

Cost to maintain and operate the network

As noted, Labour uses a revised figure of £579m as an annual operating cost of the fibre network, drawn from a report by Prism & Tactis.[16] This figure is based on the direct costs for a fibre network, and 'relevant' overhead. In practice, in taking over Openreach the government would be taking on greater costs than this.

First, it would be responsible for all overheads, not simply those deemed relevant for the purposes of Prism & Tactis' analysis. Second, Openreach spends substantially to operate a copper network. While this would ultimately (by 2030) be replaced by fibre, in the meantime it will need to be operated and maintained to ensure continuing service for customers.

Openreach currently attributes £1.2bn per year[17] of its operating costs to its 'wholesale local access' (WLA) offer - broadly, the copper and fibre access networks.[18] In the early years before the national transition to fibre, this will be a much more relevant cost figure than the £579m 'fibre + relevant overhead' estimate. Even once copper is switched off, the fully loaded cost may be closer to £1.2bn (or more) than £579m.

Indeed, such a figure would be consistent with the Frontier report that Labour used as the source of its £20.3bn capex figure. The same report provided a figure for opex of £22.8bn over 25 years, or £910m per year.[19] (Again, this figure excludes any copper costs). It is not clear why Labour chose to use different sources for its capex and opex assumptions.

[14] Frontier (for DCMS), *Future telecoms infrastructure review: Annex A*, 13 July 2018

[15] Andrew MacAskill, "BT CEO says: Labour's plan for free broadband may cost £100 billion", *Reuters*, 15 November 2019

[16] Prism Business Consulting Ltd & Tactis (for NIC), *A Cost Analysis of the UK's Digital Communications Infrastructure options 2017- 2050*, 20 December 2017

[17] BT, *Regulatory Financial Statements 2019*. Figure excludes depreciation

[18] This is probably an underestimate of the total of the total maintenance cost of the network, since some of this is likely to attributed to Openreach's 'WFAEL' voice product, which makes use of the same network

[19] Frontier (for DCMS), *Future telecoms infrastructure review: Annex A*, 13 July 2018

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Even the higher £1.2bn is less than half of Openreach's total operating costs, but the remaining costs are generally associated with products other than broadband, and thus will bring offsetting revenues.

Finally, all the above actual and estimated costs are for commercial operators. It is entirely possible that a state-owned monopoly would see costs drift upwards. Certainly when BT was privatised, there was sufficient excess cost from the period of state ownership that it was able to cut staff from 238,000 to 124,700 fifteen years later (virtually all in the UK), while at the same time improving service standards.[20] Cuts have continued, and today BT has just 84,300 UK employees.[21]

Mr McDonnell has suggested that "workers, consumers and other stakeholders" will manage British Broadband.[22] Whether this management group could maintain the continued downward pressure on costs (not least staff costs) is open to question.

Acquisition of Openreach and other parts of BT

The value of Openreach is perhaps in the region of £15bn,[23] though estimates run as high as £25bn.[24] Labour is also proposing to nationalise parts of BT Technology, BT Enterprise, and BT Consumer. The cost of these additional acquisitions would obviously depend on the how much of each entity was being acquired. However, the operating profit of each of BT Enterprise and BT Consumer is higher than that of Openreach. Thus acquiring a material part of these enterprises (plus Technology) is likely to substantially increase the cost of nationalisation. As a crude estimate, let us assume a total acquisition cost of £20-30bn,[25] which compares to the current £39bn enterprise value of BT as a whole. (This acquisition cost is on top of the £20.3bn cost of deploying fibre mentioned above).

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[20] David Parker, "The UK's Privatisation Experiment: The Passage of Time Permits a Sober Assessment", *CESifo Working Paper* No. 1126, 2004

[21] BT, *Annual Report 2019*, 8 May 2019

[22] Labour, *Full Text of John McDonnell's Speech on Labour's British Broadband announcement*, 15 November 2019

[23] Jeffries estimate £13.5bn, and New Street £16.5bn. Steven Frazer, "Labour's BT Openreach nationalisation plan faces massive obstacles", *Shares Magazine* , 15 November 2019; John Ralfe, "BT nationalisation: pension deficit is the easy bit", *FT*, 26 November 2019. A £15bn valuation would imply an EBITDA multiple of 6.3x, a relatively low figure

[24] Dinesh Nair, Ruth David, Thomas Seal & Manuel Baigorri, "BT's U.K. Fixed Network Openreach Draws Buyer Interest", *Bloomberg*, 24 May 2018

[25] This sets aside any market premium that would be typically paid in the event of a private acquisition – this might be of the order of 30% on top

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Labour has said that the price paid will be set by Parliament, and may not reflect this market valuation. While a material discount would provide a saving for tax payers, it would bring other costs:

- *Losses for general shareholders* including pension funds and BT staff
- *Greater likelihood of legal challenge*, with resulting delay and cost. According to Clifford Chance, overseas investors from countries with an investment treaty with the UK, such as China, Hong Kong and Singapore, might be in the strongest legal position. Would a Labour government choose to pay a higher price to overseas shareholders than to UK shareholders?[26]
- *Greater disincentive for inward investment* since potential investors would worry that their shares or operations might be privatised in future at a mandatory discount
- *Damage to international relations.* BT's largest shareholder, with 12%, is Deutsche Telekom. The German government may not welcome what could be seen as arbitrary taking of value from one of the country's largest companies

The above suggests that in practice, the government would end up paying near to full price (or potentially more, if it wished to move quickly).

Labour has also hinted that its nationalisation might not be limited to BT. According to the BBC:

> "Mr McDonnell said that if other broadband providers did not want to give access to British Broadband, then they would also be taken into public ownership."[27]

What access Labour is seeking is not clear here. Perhaps the intent is to lease access to FTTP networks deployed by non-BT telcos. If so, that is an operating cost Labour has not factored in. Conversely, if British Broadband were to purchase these telcos outright, this would be a further substantial upfront cost, plus ongoing opex.

Cost of services currently provided by ISPs

Labour considered the cost of maintenance for the fibre network, but this is only a fraction of the operating costs associated with providing broadband. As mentioned, ISPs provide other components in

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[26] Clifford Chance, *UK Nationalisation: The law and the cost*, March 2018
[27] BBC, *General election 2019: Labour pledges free broadband for all*, 15 November 2019

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addition to the broadband access network, such as connections to local exchanges, international connectivity, customer care and so on.

A reasonable estimate of these costs might be £8 per line per month. Across 30m UK premises (assuming universal uptake of broadband, per Labour's ambition) this works out to an annual cost of £2.88bn.

Taxes foregone

Labour's proposal would have a drastic impact on the telecoms industry, discussed in more detail in the next section. However, at minimum it will deprive the industry of all revenues associated with broadband. By extension, it will deprive the Exchequer of all taxes associated with these revenues, most notably corporation tax.

Openreach makes a return of £650m per year on its WLA products. [28] At a corporation tax rate of 19%, this suggests around £120m of lost corporation tax if these services were offered for free.

The ISPs will also lose revenue and profit, and hence reduce their tax payments. The impact on revenue is complicated by the fact that broadband is generally bundled with other services such as line rental, and operators do not report broadband revenue as such. However, assuming a £10 incremental cost per month for broadband plus line rental over the cost of line rental alone,[29] and a margin of 25%, then the profit reduction is £2.50 per line. Corporation tax on this (at 19%) will be £0.48 per month, or (across 25m broadband lines) £144m of lost tax revenue from ISPs. Combined with the Openreach reduction, this gives a loss to the Exchequer in the order of £260m per year.

The Exchequer will also see a reduction in VAT receipts from the industry, although the net effect is complex (not least because consumers will spend their money elsewhere, potentially on other goods and services that carry VAT).

A reduction in tax take is more than hypothetical, since there was a reverse effect when BT was privatised (though this was due to its increased efficiency as a private entity, rather than due to charges to services). According to NERA, writing in 1996:

> "Whereas in the four years before privatisation BT contributed up to £625 million a year to public sector funds, since

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[28] BT, *Regulatory Financial Statements 2019*. Figure excludes depreciation. Note that these statements are on a current cost accounting basis, and so are not directly comparable to BT's statutory accounts

[29] Based on BT's £29.99 standard price for line rental plus 36 Mbps broadband compared to £19.99 for line rental only. BT website, 30 November 2019

privatisation it has generally contributed between £1 billion and £2.4 billion a year in addition to privatisation proceeds"[30]

Income from non-broadband businesses of Openreach

Labour is proposing to nationalise Openreach, but Openreach has other products besides those that support broadband.[31] The government would receive profits from these (since presumably they would still be charged for). These generate a return of £839m, though today the government already receives some of this value via corporation tax. After allowing for this, the net benefit to the government from ownership of these other products may be in the order of £680m per year.

Conclusion

Labour proffered (revised) costs of its policy as £20.3bn one-off to deploy fibre, and £579m manually for network opex. It did not offer a figure for the cost to acquire Openreach and other elements of BT.

Based on the above analysis, more realistic estimates (albeit still crude) are as follows:

Figure 2 Estimated Labour broadband policy costs (£bn)		
	One-off	*Annual*
Cost to acquire Openreach + BT elements	20-30	
Cost to deploy FTTP	20	
Cost to operate network		1.0
Cost of ISP services		2.9
Corporation tax foregone		0.3
Benefit of non-broadband Openreach income		(0.7)
Total	40-50	3.5

(These figures exclude any further costs associated with acquiring non-BT FTTP providers).

Put another way, the actual costs are likely 2-2.5x the one-off costs Labour has acknowledged, and 6x the annual costs. To put the annual estimated cost of £3.5bn in context, it is roughly equivalent to the entire spend of the Department of Transport, across roads, rail, buses, shipping and aviation.

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[30] NERA for CPS, *The Performance of Privatisation Vol. II: Privatisation and its Effect on the Exchequer*, 16 September 1996

[31] Depending on when broadband is made free, British Broadband may receive income from legacy broadband products, though it seems likely that broadband of all types will need to be made free quickly. See page 15

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Impact on industry

Labour's policy would clearly have an immediate impact on BT, but the impact on the rest of the telecoms industry is likely to be at least as significant.

Impact on business models

Labour is proposing to offer a free, premium (FTTP) product to all UK households and businesses. There will be no practical way to compete with this, and as a result all commercial players - Sky, Virgin, TalkTalk and many smaller ISPs and alt-nets - will be forced out of the broadband business (unless they have been acquired by British Broadband).[32]

For many, broadband is their entire business, and having to leave it will simply bankrupt them, with consequences for shareholders, employees and other stakeholders.

Others, particularly the larger players, typically offer voice and TV services as well as broadband. In theory at least they could continue to offer these services. Labour has said it "wouldn't want to interfere in that market in any way… [P]roviders who are already providing those enhanced services, we'd welcome that continuation."[33]

However, in some instances these services are there in large part to defend or grow the broadband business. BT Sport, for instance, was launched to retain BT's broadband customers. However, without a broadband business, this rationale falls away, and BT Sport may no longer be justifiable.

More generally, TV and voice services have increasingly been sold as a bundle with broadband. Such bundles help retain customers and reduce costs (since, for example, the customer acquisition and care costs are spread across more products). Without broadband included in the bundle, it is not clear that providers will still be profitable.

For example, Virgin Media has 5.5m customers, of which 5.2m take internet services. (3.9m take TV, and 4.6m take telephony).[34] If, as assumed above, incremental revenue from broadband is £10 per

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[32] It is not impossible to compete with a free government service – private healthcare in the UK competes with the NHS for example. But it is only possible by providing a premium offer. Presuming British Broadband is offering free gigabit broadband, there is no meaningful way to provide a premium offering beyond this

[33] Peter Walker, Rajeev Syal and Heather Stewart, "Labour's free broadband plan fires up the election battle", *Guardian*, 15 November 2019

[34] Virgin Media, *Consolidated Financial Statements, December 31 2018*

customer per month, then losing broadband would reduce Virgin Media's revenue by £624m per year. There would be very little associated cost saving, since Virgin Media would still need to care for the great majority of these customers, maintain its network to provide voice and TV, and so on. (There would be some savings for internet connectivity such as transit).

Thus much of this £624m revenue loss would translate directly into a profit loss. However, Virgin Media's total operating profit is just £207m, suggesting it would be thrown into material operating loss. Potentially it could increase its voice and TV prices to compensate, but this would be a hidden cost to consumers of the Labour policy.

Even this analysis likely understates the impact. Broadband is a key driver to bring customers to Virgin, and without it, it seems likely that many telephony and TV customers would drift away, doing further damage.

Broadly similar logic applies to Sky and TalkTalk, albeit with some differences because they lease components of their network from Openreach rather than owning their own access.

In sum, the proposal seems likely to do significant damage to the entire consumer telecoms industry in the UK, dependent as it is on broadband as a critical element of the bundles it sells.

Impact on FTTP investment

A more immediate and direct impact will be on commercial FTTP investment. Why would an investor fund FTTP if it will later have to compete with a free offer from government?

Indeed, this impact is already being felt, even before the election. TalkTalk operates an FTTP business, FibreNation, that has ambitions to pass 3m premises. This business is currently for sale, but talks have stalled as a result of the Labour policy announcement.[35]

Were Labour to be elected, the impact would be even greater. Commercial FTTP deployment, currently under way at a brisk pace, would cease.

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[35] Alistair Smout, "TalkTalk says FibreNation sale stalled after Labour broadband pledge", *Reuters*, 15 November 2019

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Impact on consumers

The policy will have several impacts on consumers. Free broadband is a clear benefit. It will also affect the broadband people receive, and service levels.

Free broadband

While 'free' is certainly attractive to consumers, it is perhaps not as exciting as it first seems. As noted, the incremental cost of a bundle of broadband and voice line over the cost of a voice line alone is relatively modest. (Of fixed broadband customers 86% also have a landline).[36]

Indeed, depending on your choice of operator and broadband speed, the incremental cost can be nil - compare, for instance, BT's current £19.99 for landline only, and TalkTalk's £19.95 for landline plus ADSL. A customer with a voice line can gain basic broadband for no extra cost. Conversely, if the customer is given free broadband by British Broadband but still needs to pay for a landline, they may not save any money at all.[37] (This sets aside for the moment the benefit of higher speed broadband).

Further, as we have seen, the loss of broadband revenues may cause ISPs to increase their cost of voice and TV services. Thus our hypothetical TalkTalk customer may find that a voice line costs more than £19.99 as a result of Labour's policy. Far from saving her money, her bills may increase (in addition to any further cost she incurs in her tax bills).

Indeed, if the customer doesn't take broadband at all (even if it is free), then there is *only* the possibility of a bill increase. Today 19% of people do not have fixed broadband at home.[38] Amongst those aged 16-64 the figure is 13%, but amongst those aged 65 and over it is 47%. These offline, older people are particularly at risk of the Labour policy simply meaning higher phone bills, without compensating broadband savings.
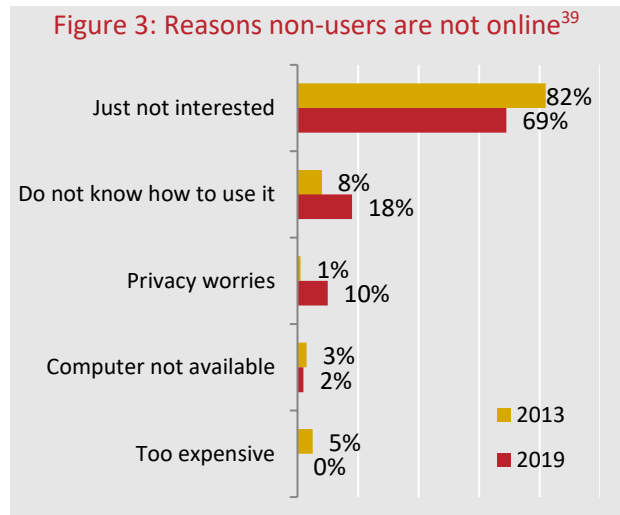
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[36] Ofcom, *Summary of UK telecoms metrics*, 4 July 2019
[37] Our hypothetical TalkTalk customer given free broadband may be forced to switch to BT for voice services, since if it is possible to buy voice services only from TalkTalk, it is not evident from their website
[38] Ofcom, *Core switching tracker 2019, 17th July to 21st August 2019*, 31 October 2019

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Of course, if these people chose to go online as a result of the policy, then that could bring them material benefits. However, for those who are offline, price is not a primary reason. Indeed, the Oxford Internet Survey found that a statistical 0% said that price was the most important reason (Figure 3). Simple disinterest or lack of knowledge were far more important.

For such users free broadband brings little benefit. Even for those with expense as a secondary reason for being offline, a free broadband offer only solves part of the problem. The challenge of the one off- cost of a computer will remain, and may well be a bigger. For a single person on Universal Credit, even the most basic Chromebook could represent three weeks' income.

Figure 3: Reasons non-users are not online[39]

Reason	2013	2019
Just not interested	82%	69%
Do not know how to use it	8%	18%
Privacy worries	1%	10%
Computer not available	3%	2%
Too expensive	5%	0%

Faster broadband

While it has not been made explicit, it seems likely that British Broadband would offer free gigabit services. Thus all consumers who do take broadband will receive the highest speed. (Without the policy, only those with commercial deployment of gigabit speeds who also choose to pay for it will receive a gigabit).

However, the practical benefit of this additional speed may not be that great. Ofcom figures show that above 30 Mbps (and potentially less), extra speed appears to make no difference to the amount of traffic a household uses per month.[40] Put another way, once a typical household has 30 Mbps, their broadband is not a material constraint on how they use the internet. However, 95% of UK households already have 30 Mbps or more available (though not all will have chosen to buy it).

Delayed broadband deployment

For those that *are* interested in the faster speeds of FTTP and who do not already have it available, the effect of the Labour policy is likely to be to delay its arrival.

Since commercial investment in expanding FTTP coverage will grind to a halt, how long it takes British Broadband to roll-out its FTTP

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[39] Grant Blank & William Dutton (OII), *Perceived Threats to Privacy Online: The Internet in Britain* [Oxford Internet Survey 2019], 9 September 2019
[40] Ofcom, *Connected Nations 2018: Interactive report* (p9), 18 December 2018

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becomes critical. The first issue is how long it takes to establish British Broadband. This may take some while after the election of a Labour government. The following steps will be necessary:

- Labour will need to secure a working majority after the election (if it has not won an outright victory)
- Time will need to be found in the parliamentary calendar
- The bill will need to be drafted and passed
- Advisors will need to be appointed for the nationalisation
- The practicalities of nationalisation will need to be worked through (several of which – such as the splitting of BT Technology,[41] which provides the company's IT systems – are likely to be extremely complex)
- Legal challenges will need to be worked through
- Nationalisation will need to be executed
- The acquired retail operations will need to be reconfigured as British Broadband Services
- Openreach's strategic plan will need to be reconfigured, to switch to an outside-in approach
- Deployment planning for these remote areas will be needed

Only after all these steps have been completed (some of which could potentially run in parallel) could the first home be passed with British Broadband FTTP. It is easy to imagine this taking two years or longer.

At the front of the queue (rightly) will be the households in remote areas with very poor broadband today. However, it is worth noting that these are likely to be the same households targeted by the current government's Rural Gigabit Connectivity Programme.[42] Thus it's not clear that they would receive gigabit speeds any quicker under Labour's policy than they would otherwise. Indeed, the dislocation caused by nationalisation may mean even this group waits longer to receive better broadband.

However, customers in more urban areas will definitely see a significant delay in FTTP availability. Commercial deployment is well under way for these customers. Under Labour's policy, these customers would have to wait for nationalisation, and then for the outside-in deployment to eventually reach them. Thus whatever the benefits of FTTP, these customers may have to forgo them for a number of years.

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[41] Labour proposes to acquire parts of BT Technology, presumably those aspects which relate to broadband. However, it seems highly unlikely that BT Technology and the myriad IT systems it operates split neatly in this way

[42] DCMS, _Rural Gigabit Connectivity Programme – Key Information Update_, October 2019

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Finally, aside from the initial delay and the impact of prioritisation, there is a question as to whether British Broadband's pace of deployment will match the aggregate pace of today's commercial players. Firstly, today's players are in a race, each keen to be the first to deploy to a given neighbourhood (since there is significant first mover advantage). British Broadband will face no such competitive spur. Second, the diversity of players today means that there is also a diversity of approach. Different companies are using various techniques to deploy fibre, and this experimentation means the industry is getting smarter. This vibrant diversity will be lost, replaced with a monoculture.

In aggregate, these various effects mean that the Labour policy is likely to lead to an appreciable delay in availability of FTTP to the average household.

Inconvenience of switching

Customers currently with BT for their broadband will presumably be able to stay with their current connection, since British Broadband Service will be acquiring BT Consumer. However the great majority of customers will – sooner or later – be required to change broadband providers. Indeed, if their current provider is forced into bankruptcy by British Broadband, this could happen precipitously.

This will require the customer (who may have been quite content with their current provider) to make arrangements with British Broadband; to take time off work to be home for a visit by a British Broadband engineer; and to set up a new router and wifi network.

If (say) a bankruptcy of a local provider is the prompt for the switch, then there may be a surge of demand in that region, meaning that installation engineers are in short supply. It is possible that customers could find themselves without broadband for a period as a result.

In exchange for the inconvenience of switching, consumers will receive free broadband, but as we have seen the net financial benefit may only be modest.

Postcode lottery?

One issue that is not clear from Labour's announcements is the pricing of non-FTTP broadband. As soon as it establishes British Broadband Services, the government will be providing ADSL and fibre-to-the-cabinet (FTTC) broadband to several million consumers. What will they be charged for this service?

The explicit policy promise is 'free full-fibre broadband' rather than simply free broadband, and Labour has said British Broadband "will coordinate the delivery of free broadband in tranches as the full-fibre network is rolled out".[43] However, it would seem somewhat perverse to give those reached with FTTP a free *and* superior service, while those whose only option is FTTC (or even ADSL) continue to pay full price.

As a practical matter, continuing to charge for FTTC/ADSL would mean that the great majority of households (particularly those in urban areas) would see no benefit from this policy in the lifetime of the next parliament.

Thus it seems likely that British Broadband may come under pressure to price all broadband services at £0. While this would bring forward benefits to consumers, it would also accelerate the damage to the rest of the industry. Bankruptcies and abandonment of broadband as a product could begin well before FTTP from British Broadband is available, increasing customer frustration and needless disruption.

Service levels

When BT (then Post Office Telecommunications) was previously in state ownership, service levels were often woeful. To take one example, there was a waiting list to receive telephone service, which peaked in 1972 at 450,000 customers.[44] Network faults were also common. In 1983 (just prior to privatisation) the national call failure rate was 5.9%. By 1993 this had dropped to 0.1%.[45]

Mr McDonnell asserts that "British Broadband will not represent a return to the 1970s in how it operates. They didn't have broadband in the 1970s".

Of course it is true there was no broadband in the '70s, but what made the BT of that era horrendously inefficient was not that it was providing voice services, but that it faced neither competition nor discipline from shareholders, and its capital was constrained by the government. British Broadband will face exactly these challenges.[46]

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[43] Labour, *The Labour Party Manifesto 2019*, November 2019

[44] John Harper, *Monopoly and Competition in British Telecommunications*, 1997

[45] G Ganesh, *Privatisation Competition and Regulation in the United Kingdom: Case Studies*, 1999

[46] Labour's policy will provide British Broadband with substantial funds for FTTP deployment, but the access network is just one component of a telco's asset base. IT systems, for example, are vital to good performance

Impact on business customers

Sufficient broadband is essential for many businesses, and under Labour's policy, free fibre broadband will also be available to business customers.

However, many of the issues discussed above in the context of consumers also apply to businesses. For instance, to the extent to which faster broadband improves productivity, this benefit for businesses will be delayed due to the slower roll-out of FTTP discussed above. Indeed, since most businesses are in the urban and suburban areas that will receive FTTP last under Labour's plan, the impact will be particularly acute. Equally, if British Broadband falls prey to the quality failures of Post Office Telecommunications, then this will badly affect businesses.

There are also some issues that are specific to businesses. For example, BT provides a plethora of business-relevant services, quite apart from those that are relevant to broadband. Presumably these will not be provided free. (If they were, it would wipe out another set of competitors).

How will these services compete for government funds for investment, both against government's ambition for rapid FTTP for consumers (voters), and the wider calls on government funding?

If these business services do see underinvestment, then businesses across the economy will suffer, since BT remains a critical supplier.

Mobile operators are a particularly important set of non-consumer customers of BT and Openreach, since they use its services to connect to their base stations. If Openreach is disrupted by the process of nationalisation or subsequent underinvestment, then this will have knock-on effects to mobile services and the deployment of 5G

Impact on society

The biggest gain for society from broadband would be getting more people online. It is far more significant to get someone from 0 Mbps (offline) to 10 Mbps, than it is to take them from 10 Mbps to 1 Gbps.

Once someone is online, even with basic broadband, they can be better connected to friends and family, can engage digitally with government services, can access cheaper prices for their shopping and so on.[47] Digital inclusion is a worthy and legitimate goal for governments.

However, as discussed, the Labour policy is unlikely to make much difference to digital inclusion, since price is not generally the reason people are offline. Skills or lack of interest are far more important.

Thus the Labour policy is – at least as far as digital inclusion goes – wildly inefficient. Investment in training (perhaps via groups such as the Good Things Foundation) and highly targeted financial support would be far better.

For those who *are* online, the 'free' aspect of the policy will have the virtue of disproportionately benefitting less well-off households. However, the particulars of the Labour policy also have highly regressive aspects (disproportionately benefiting the better off). There is a clear case for improving broadband for those with bad service today, such as those in remote areas. But this is already a feature of UK and Nations broadband policy. What is new in the Labour policy is free FTTP for all, combined with government ownership.

Who benefits most from this? Those households with the greatest need for gigabit speeds – that is, large households with many people and many gadgets, who can make use of the extra bandwidth. Console games are a key requirement of need for higher speeds, for example.[48] However, such households are likely to be better off, and are odd targets for a programme of government subsidy.

Conversely, who suffers? Those most acutely disadvantaged by the policy are those who do not use broadband, but will need to subsidise (via taxation) FTTP for those who are online. This group is

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[47] For a more detailed discussion, see Robert Kenny & Claire Milne, *Mobile : A powerful tool for Digital Inclusion*, 12 May 2014

[48] For a detailed discussion of the drivers of bandwidth requirements, see Robert Kenny & Tom Broughton, *Domestic demand for bandwidth - An approach to forecasting requirements for the period 2013-2023*, 5 November 2013

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disproportionately older and poorer. Even those who do take broadband but do not need higher speeds are likely to be net-losers. As we have seen, the bill reduction will be minimal for such households, but they too will carry the tax cost.

Impact on employees

Levels of employment

John McDonnell, in announcing the policy, stated "we will guarantee workers currently in broadband infrastructure and retail jobs employment in British Broadband" [49] It is not entirely clear whether this includes those working for companies beyond BT.

If it does, then British Broadband will have to take on far more staff than those currently at BT. Given the catastrophic effect on the wider industry, there will be many working at BT's competitors in need of jobs. Will British Broadband offer them jobs on the same terms, at a similar location? How will all these additional employees be productively employed? How will their cost be funded? (Such costs do not appear in Labour's financial figures, or indeed in our own above).

Conversely, if the employment guarantee only applies to current employees of BT, then many staff at other telcos are likely to find themselves unemployed. (In total the UK industry employs 177,000 people).[50]

There are also categories of job that will become redundant in British Broadband. For instance, will a free, monopoly service need marketers or pricing experts? If not, will the jobs guarantee still apply for these individuals?

There is also the question of the duration of the guarantee. BT is currently part way through a redundancy programme affecting approximately 9,000 UK employees.[51] Once Openreach and the other components of BT are nationalised, will the relevant parts of this programme cease? If so, British Broadband will already be locking in the inefficiencies that were part of the problem with Post Office Telecommunications prior to the creation and privatisation of BT.

Levels of compensation

Those who work within British Broadband may see lower pay over the long run. Firstly, they will be public sector employees, with all the pressure on pay levels that implies. Secondly, many of them will face negotiation with a monopsony (sole customer) employer. If you are

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[49] Labour, *Full Text of John McDonnell's Speech on Labour's British Broadband announcement*, 15 November 2019

[50] DCMS, *DCMS Sectors Economic Estimates 2018: Employment*, 26 June 2019

[51] Mark Sweney, "BT to axe 13,000 jobs and move out of central London HQ", *Guardian*, 10 May 2018

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trained as an FTTP planner, for example, British Broadband will be your only possible employer. You will either have to accept the salary offered, or seek a new career.

Finally, there is the challenge of BT's pension scheme. This has a £5bn deficit. How will the pensions of current and past employees be secured in the context of the break-up of BT? Given that Openreach underwrites the pension deficit, will the government take on responsibility for some or all of it after nationalisation?

Overall, it seems likely that Labour's policy would create winners and losers amongst employees. Current BT employees might enjoy greater job security (perhaps at the expense of lower pay), but employees of other broadband providers might well lose their jobs.

Impact on politics

Broadband is already contentious politically, and is a post-bag issue for MPs. However taking it into state ownership makes this much worse, as Australia's experience with its National Broadband Network has shown.[52] There, consequences have included:

- *Politicisation of the deployment plan*, with suspicion that favoured constituencies are being prioritised
- *Politicisation of the technology plan*, with technical approaches subject to change on a change of government
- *Politicisation of management*, with the CEO subject to replacement with a change of government and constant parliamentary hearings taking the time of senior executives
- *Politicisation of all network problems*. Consumers' bad experiences with broadband become 'government's fault'
- *Decision-making on government time scales,* with hearings, commissions, consultations and so on all (necessarily) delaying decisions for an industry that needs to move ever faster
- *Politicisation of capital budgets.* How much funding should be made available to NBN is now also a matter of parliamentary debate

The UK has already experienced some of these issues in the pre-privatisation era of Post Office Telecommunications:

> "Until the late 1970s [Post Office Telecommunications] was frequently in a struggle with Parliament to increase investments – most often without success. As a result, the degree of automation was among the weakest in Western Europe and long waiting lists for the installation of telephones remained throughout the 1970s and early 1980s".[53]

There are also some potentially toxic issues that the government would take on via nationalising broadband. ISPs work together with the Internet Watch Foundation to block images of child abuse. While this is effective, it is not perfect. Under the British Broadband model, presumably ultimate responsibility for any failure to block such images would sit with a government minister.

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[52] For a discussion of the sorry history of the NBN, see Robert Kenny (for BSG), *Australia's NBN as a precedent for UK broadband policy*, November 2019

[53] Johan From & Kjell A. Eliassen, *The Privatisation of European Telecommunications*, 2007

International precedents

In announcing British Broadband Mr McDonnell spoke of South Korea's "mission-oriented government investment" to deliver FTTP. [54] However, while Korea has pursued FTTP, its methods have been entirely different from those proposed by Labour. In particular, it has relied on private companies to deploy FTTP, providing them with a variety of incentives to do so (much like the existing BDUK and RGC programmes in the UK).

Japan, another FTTP pioneer, took a similar approach. However, while this did secure widespread FTTP, it wasn't seen as an entirely successful programme. After the network's completion, incumbent telco NTT noted that:

> "Japan truly has one of the world's leading broadband environments. However, Japan lags behind other countries in the use of ICT in such areas as education, medicine and government services". [55]

NTT went on to note that the US and UK were well ahead in areas such as school LAN deployment, online income tax filing and electronic medical records.

The only significant country that has pursued a nationalised approach to FTTP deployment is Australia,[56] although even there this was limited to the underlying access network. Commercial ISPs continued to be the providers of broadband.

Further, Australia is hardly an encouraging precedent, since NBN has resulted in significant delays to improvements in broadband and substantial cost over-runs.

Finally, Australia took the radical step to create the NBN to address a failure of commercial players to upgrade broadband, in stark contrast to the situation in the UK where commercial deployment of FTTP is proceeding apace.

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[54] Labour, *Full Text of John McDonnell's Speech on Labour's British Broadband announcement*, 15 November 2019

[55] NTT, *Annual Report 2010*, 24 June 2010

[56] Qatar has deployed a state-owned duct and dark fibre network

Conclusion

There are important issues to address in UK broadband. Certain locations ('the last 5%') still lack adequate connectivity and a material number of households remain off-line. Some also argue that the UK needs more widespread FTTP (as opposed to other forms of faster broadband).

However, the Labour policy does not appear to be the solution to any of these problems. The last 5% are already being addressed by a range of programmes, both public and commercial. Nor is the policy likely to have a material impact on the number of households online, since this the barriers are primarily a lack of skills and interest, not cost. Finally, brisk commercial FTTP is already under way.

A policy of nationalisation and free FTTP for all is a radical and disruptive solution to what are a set of relatively narrow problems. Indeed, given the disruption it is likely to cause to the market, it may well make matters worse for consumers and businesses, even before its cost to the Exchequer is taken into account.

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Appendix: Labour's rationale

Labour offered several rationales for its policy when it was announced by John McDonnell (JM) and Rebecca Long Bailey (RBL).[57] However, a number of these rationales have material flaws.

In many instances, Labour has made the mistake of confusing the benefits of FTTP with the *incremental* benefits of FTTP. Basic and superfast broadband bring many benefits. Investment in FTTP can only be justified based on the unique additional benefits it provides.

	Figure 4 Rationales offered for the policy	
Source	*Rationale*	*Comment*
JM	"will provide a step-up for people with 5G connections and businesses developing 5G-based products"	The logic is not clear at all here. Labour is proposing a different means to deploy improved fixed broadband. The impact on mobile services will be minimal
JM	"will literally eliminate bills for millions of people across the UK"	As discussed, benefit of free broadband may be materially offset by price increases for telephony and TV
RLB	"the UK is lagging behind the rest of the world on technology diffusion. …. The UK currently has 71 installed robots per 10,000 manufacturing sector employees, below the world average"	There is no reason to believe that a lack of robots is due to a lack of FTTP. The International Federation of Robotics (the source for this figure) suggest that a lack of investment is the problem, possibly exacerbated by Brexit[58]
RLB	"a full fibre broadband network could boost productivity by £59 billion by 2025"	This figure (for GVA) needs to be considered in the context of the change due to Labour's policy. If (for example) Labour's approach delays availability of FTTP to many businesses, then the policy may have a *negative* impact on productivity
RLB	"a 10% increase in broadband connections could result in 1% GDP increase per year."	This is not relevant, since UK already has wide adoption of broadband, and the policy is unlikely to increase it
RLB	"All businesses will have free full fibre broadband, lowering costs, facilitating the latest developments in technology and software, and supporting 5G technology"	For businesses cost savings are likely to be immaterial. For businesses bandwidth requirements are often surprisingly low (though reliability is important). Typical business uses are not bandwidth intense[59] Relevance of 5G again unclear

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[57] Labour, *Full Text of John McDonnell's Speech on Labour's British Broadband announcement*, 15 November 2019; Labour, *Full text of Rebecca Long Bailey's speech on Labour's British Broadband announcement*, 15 November 2019

[58] IFR, Robot density rises globally, 7 February 2018

[59] For a detailed discussion see Robert Kenny (for BSG), *The broadband requirements of small businesses in the UK*, August 2015

Source	Rationale	Comment
RLB	"For those business people operating in rural communities, or people who want to start out companies from their homes but aren't in town or city, this will provide the infrastructure they so need"	Rural connectivity is undoubtedly an issue, but a range of programmes are in place to address this gap, and are likely to do so quicker than a nationalisation combined with an FTTP-only approach
RLB	Reports have estimated that a million more people in the UK could work from home with a full-fibre network. Imagine if all those currently shut out of the labour market, such as those with childcare or caring responsibilities, those unfairly disadvantaged due to disability or older people, could participate fully through free, fast internet access from wherever they are.	The source for this figure is unclear, but is perhaps a Frontier report[60] that noted that certain professions such as video editing and statistical analysis of large files can benefit from the highest speeds at home. However, the vast majority of jobs do not require such speed for home working, and thus it is unlikely that anyone with access to reasonable broadband (FTTC or good ADSL) will be shut out of the labour market as a result. In reality lack of skills or interest is generally the main barrier to broadband use for those in disadvantaged groups
RLB	"the roll out of free full fibre broadband can improve everybody's quality of life. From families all being able to stream what they want at the same time, to children being able to take part in interactive homework."	A family of 5 all simultaneously streaming different HD videos need just 15 Mbps, well within the capabilities of existing superfast networks. Interactive homework needs even less bandwidth
RLB	"From access to online education and services, through to older people being able to communicate with family and friends from the comfort of home. Every single person across the UK should have a right to these services, which have become a fundamental part of modern day life the world over."	The very fact that these services are fundamental to modern life demonstrates that *they are possible with current broadband.* For those without broadband, the challenge is not a lack of FTTP, nor even of free broadband, but rather (for most) a lack of skills and interest

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[60] Frontier, *Future benefits of broadband networks*, 12 December 2017. This report assumes large files must be uploaded by the home worker. However, if the relevant file is in the cloud and manipulated remotely, home work may require no more bandwidth than basic web surfing

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+44 773 858 2227
info@commcham.com
www.commcham.com

+44 773 858 2227
info@commcham.com
www.commcham.com