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Response to Ofcom's Wholesale voice markets review 2021-26

October 2020

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Executive summary

BT welcomes the opportunity that Ofcom has provided to comment on its 'Wholesale voice markets review 2021-26 consultation' and to contribute in shaping the rules that will govern these markets in 2021-26.

In this crucial period BT is committed to deliver an ambitious set of transformation programmes. We will profoundly simplify and innovate our business, delivering greater value and a better customer experience to all our customers, including wholesale voice customers. We will migrate our legacy TDM infrastructure to an All-IP network. We will roll out an ambitious FTTP investment programme for which we have suspended the distribution of dividends to our shareholders for the next five years, effectively committing all our available investment resources.

To carry out these ambitious programmes, BT needs a forward-looking, innovation-oriented set of rules, which recognises BT's evolution from legacy incumbent to lean, innovative technology outfit competing, in most cases, on equal footing with others in the UK digital communication markets.

BT agrees with Ofcom's approach when they have indeed recognised the above trends, for example by suggesting the deregulation of Wholesale call origination, introducing the principle of reciprocity for non-UK calls or simplifying financial reporting requirements.

However, in other areas Ofcom has not taken a sufficient forward-looking view. BT believes that Ofcom should reconsider its analysis and approach in the following ways:

- Calls to mobiles sit within a wider product market including OTT calls and potentially other forms of communication on social media, we discuss this in Chapter 2;
- The weighted average cost of capital is set too low in the mobile cost model, we discuss this in Chapter 3;
- Pricing and non-pricing remedies for BT IP interconnection services are unnecessary and disproportionate, we discuss this in Chapter 4;
- Migration remedies imposed on BT should be extended to the rest of the industry; we discuss this in chapter 4

BT welcomes Ofcom's views on these proposals and remains available to work through them together with Ofcom should any clarification be needed.

A more detailed summary of our responses is provided below:

BT supports the deregulation of the Wholesale call origination (WCO) market

BT supports the deregulation of WCO market; it no longer meets Ofcom's Three Criteria Test and so we propose, similar to the approach adopted in respect of the WLR markets, the implementation of voluntary agreements to ensure other communication providers ("CPs") will be guaranteed access at fair and reasonable terms up to 2025, when the product will be decommissioned.

OTT should be included in the market for calls to mobiles

BT considers that Ofcom's market definition analysis and findings are incorrect given that there may be a wider product market for calls to mobiles that includes OTT (e.g. FaceTime and WhatsApp calls). This is especially likely to be the case for international calls to mobiles.

The proposed UK MTR is set below the efficient level required to support continued investment and innovation in the provision of the wholesale MCT service (including mobile WACC)

As set out in our wholesale fixed telephony market review ("WFTMR") response we believe that Ofcom underestimates the Mobile WACC. We invite Ofcom to review the way they estimate the 'expected market return', the cost of debt and the applicable tax rate. Taken together these changes would increase the pre-tax real WACC from Ofcom's current estimate of 5.8% to 6.3%.

UK consumers will benefit from the reciprocity condition for Non-UK call termination rates but, to ensure its correct functioning, further clarity is needed

BT agrees with Ofcom's assessment that a reciprocity condition is likely to deliver the best outcome for UK consumers in relation to both fixed and mobile call termination, and to all international calls (EEA and non-EEA). In order to ensure a successful, industry-wide implementation, we urge Ofcom to consider some technical aspects on surcharge blending, malformed CLIs, porting and non-geographic international numbers. Given the UK's imminent departure from the EU, these issues should be addressed as soon as possible, potentially using an industry-wide workshop co-ordinated by Ofcom.

The proposed non-pricing remedies on BT's IP interconnection services are disproportionate

BT disagrees with proposals to introduce access and non-discrimination requirements in respect of its IP interconnection services. We believe these remedies are unnecessary because BT is already subject to General Conditions on interconnection and a specific end-to-end connectivity obligation. Were any transparency requirements to be imposed, these would need to be amended so that they avoided capturing unregulated services such as transit and conveyance traffic.

Ofcom's pricing remedies on BT's IP interconnection services are not justifiable and introduce unnecessary technical complexities

BT disagrees with Ofcom on the need to regulate IPEX interconnection and accommodation services. Ofcom's competition concern that "*BT's high share of WCT volumes and its importance as a partner for other fixed providers means that the impact of discriminatory conduct by BT would have greater effect on downstream competition than similar conduct undertaken by other telecoms providers*" is an unsubstantiated market power assessment which fails to capture the differences with the legacy world and the future benefits that IP interconnect will bring to other CPs. As CPs move to an IP environment, the number of Points of Connection that they need to establish with BT will be significantly lower and so will be the cost of these services as a proportion to the traffic value. Also, BT has no commercial leverage in practice, given the existing GCs and End to End connectivity obligations. As such we believe this measure is not justifiable and disproportionate.

In any case, the proposed measures on port charges need further consideration as each port doesn't distinguish between transit and termination traffic. Port charge regulation for termination traffic introduces a technical complexity and forces an inefficient technical solution. Conversely, extending the fair and reasonable charges requirement to all port services would be disproportionate.

BT welcomes Ofcom's FTR POC migration proposed measures, but believes other CPs, and not just BT, should face the same transparency rules and migration backstop deadlines

BT agrees with Ofcom's approach to the FTR POC migration. These measures are in line with what BT has already proposed during the May industry workshop attended by Ofcom. However, for BT to efficiently deliver a smooth migration experience for CPs, BT needs to have visibility of larger CPs' migration plans. This will enable BT to effectively cater for CPs' needs, including conducting significant, complex re-pointing work. Enhanced transparency measures will also assist with lower cumulative industry migration costs. In relation to backstop dates, we consider it is disproportionate to impose costs on BT by requiring it to keep its TDM open until the last CP has chosen to migrate – imposing symmetric backstop dates on all CPs to migrate to IP would address this issue. As such, we propose that all CPs should be subject to the same transparency and migration conditions that BT faces.

Ofcom should further clarify existing obligations in case of hosting

BT believes current rules are not as clear as they should be in defining the responsibilities of the originating, terminating, transit and hosting parties. To this end, we ask Ofcom to provide additional clarity to the existing rules.

BT supports Ofcom's proposals on reporting requirements

BT broadly support Ofcom's proposals on reporting requirements. In the section "Regulatory reporting requirements" we make specific proposals in line with the points raised above and we would also like to engage with Ofcom to discuss some of the details.

BT supports Ofcom's principles on interconnection standards, but believes further guidance is needed

BT supports Ofcom's approach not to mandate compliance with NICC standards. We also agree that a CP not using NICC standards must pay any interoperability costs. However, we believe that Ofcom's proposal does not go far enough and should provide additional guidance if CPs are unable to agree commercial negotiations. We believe Ofcom guidance will be helpful to ensure appropriate cost recovery and promote better quality of service for consumers.

1 Wholesale call origination

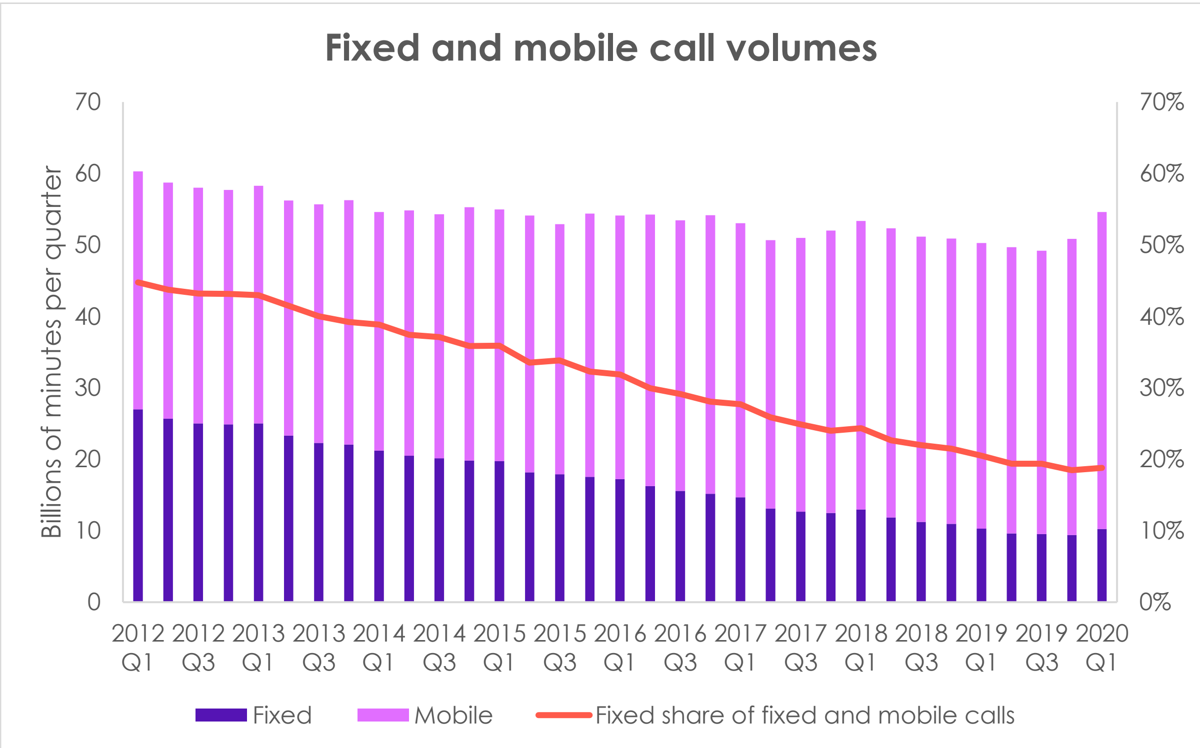
BT supports Ofcom proposal to deregulate WCO

Ofcom question 4.1: Do you agree with our proposal not to regulate the WCO market on the basis that it no longer fulfils the three-criteria test set out in the 2014 EC recommendation? Please set out your reasons and supporting evidence for your response.

BT supports Ofcom's proposal. BT believes that the migration to All-IP will lead to:

- A rapid decline in WCO usage, making existing regulation disproportionate;
- A range of providers offering managed VoIP services, effectively **lowering barriers to market entry** (Test 1 of the Three Criteria Test used by Ofcom) and
- A **market structure tending towards competition** (Test 2 of the Three Criteria Test used by Ofcom), as per Ofcom findings in its analysis. As Ofcom states in paragraph 4.33 of its consultation, there will be material improvement in competition in the next review period, as services that replace those provided over WLR will be supplied by a range of providers, driven in part by significant growth in the use of managed IP-based voice services. On this basis the market for WCO will, therefore, tend towards effective competition over the review period.

Fixed call volumes have dropped further since 2017, in absolute and relative terms, indicating **continued substitution** from fixed to mobile.



Source: BT analysis of data from Ofcom's Telecommunications market data update Q1 2020, which includes estimates where Ofcom does not receive data from providers.

Mobile call prices have effectively dropped to zero with the widespread provision of unlimited minutes tariffs, suggesting **increasing competitive constraints** on WCO.

Source: Comparethemarket, comparison of SIM Only plans, accessed on 6th October 2020; emphasis added.

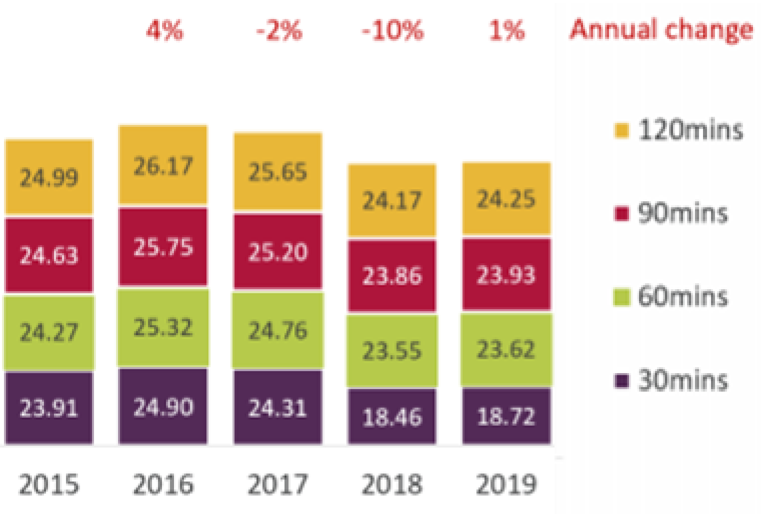
		Contract length	Minutes	Texts				
talkmobile	Uswitch exclusive; Promoted	12 months	Unlimited	Unlimited		12GB data	£8.00 per month	See Deal
Virgin media	Promoted	12 months	Unlimited	Unlimited	Data rollover	30GB data	£13.00 per month	See Deal
O2	Uswitch exclusive; Promoted	12 months	Unlimited	Unlimited		10GB data	£10.00 per month	See Deal
giffgaff	Promoted	No contract	Unlimited	Unlimited	Extra GB on us*	9GB data	£10.00 per month	See Deal
EE	Uswitch exclusive	12 months	Unlimited			10GB data	£10.00 per month	See Deal

Source: Uswitch, comparison of SIM Only plans, accessed on 6th October 2020; emphasis added.

Unmanaged VoIP calls (on WhatsApp, Viber, etc) have become more common, suggesting additional substitution away from traditional calls and further **increasing competitive constraints** on WCO.

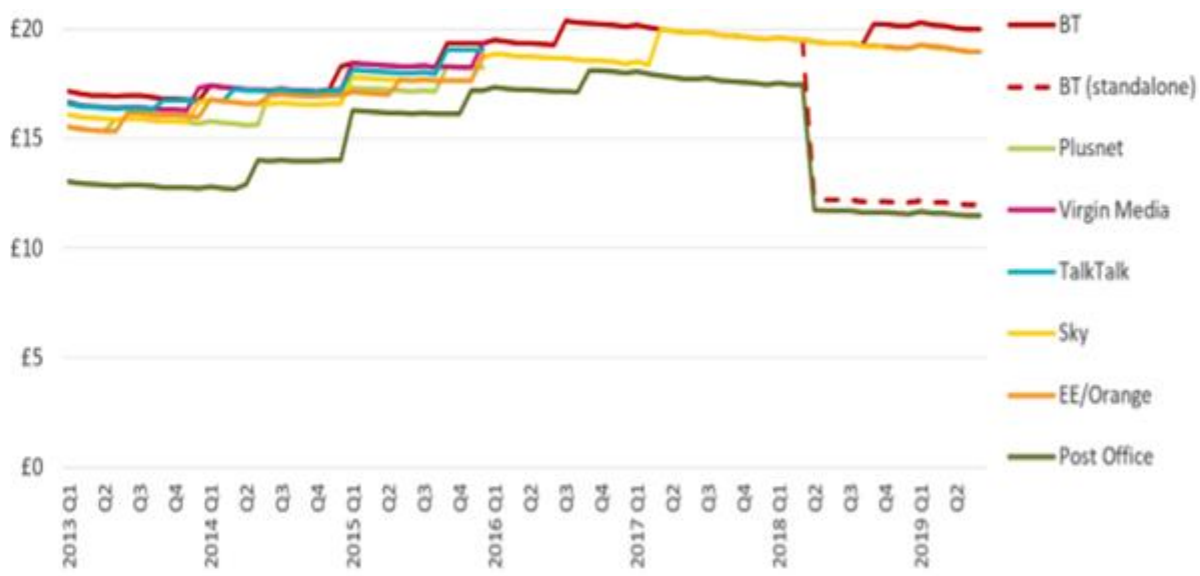
Retail prices for voice-only standalone tariffs have also fallen, driven by a fall in residential standalone line rental prices**, benefitting those who are most likely to be dependent on their landline**.

Monthly price of voice-only standalone tariffs



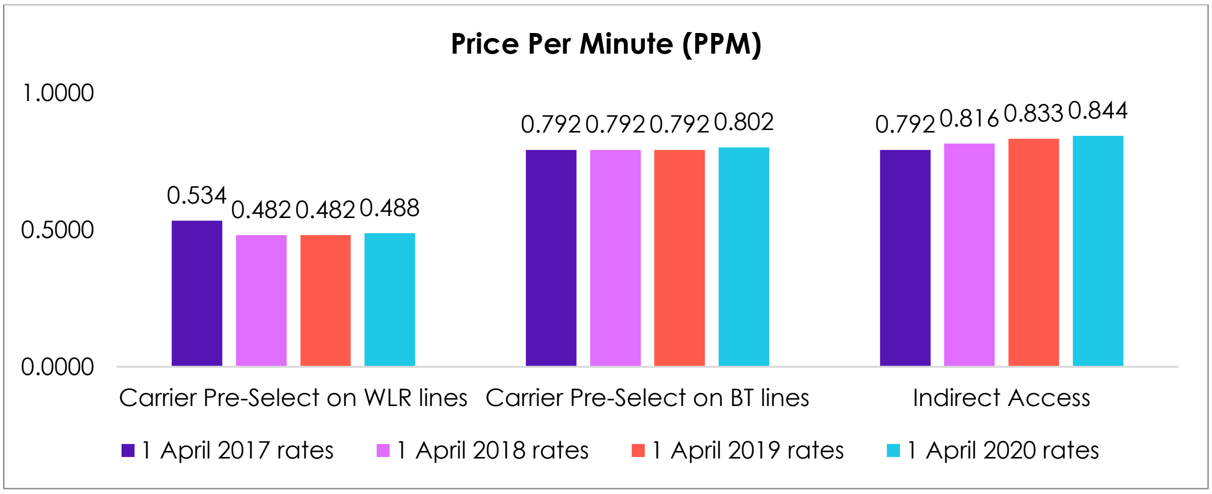
Source: Ofcom, Pricing trends for communications services in the UK, 9 January 2020, Figure 34. Note: tariffs cannot be used with fixed broadband; tariff data collected in July each year; includes promotional discounts where available; July 2019 prices

Residential line rental prices

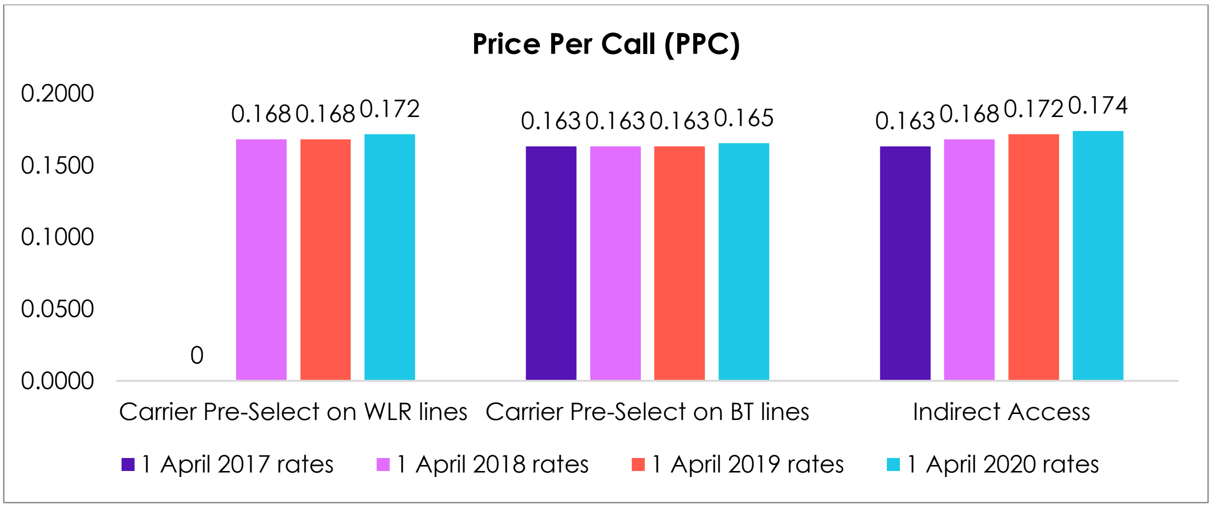


Source: Ofcom, Pricing trends for communications services in the UK, 9 January 2020, Figure 31. Note: Adjusted for CPI; excludes line rental saver pre-payment tariffs.

WCO rates have risen by **no more than the rate of inflation**[1] since 2017. BT has not increased WCO real prices over the past few years.



Source: BT analysis. Prices shown are for local exchange call origination. For the 2017 PPM for Carrier Pre-Select on WLR lines, we had different rates for daytime, evening and weekend calls, so we have shown just one rate (the daytime rate).



Source: BT analysis. Prices shown are for local exchange call origination.

WCO is a dwindling market for BT, diminishing incentives for us to raise prices; our FY19/20 revenue of CONFIDENTIAL is expected to fall to CONFIDENTIAL by FY24/25. If BT was not regulated at all on WCO and chose to raise prices by an arbitrary amount (e.g. 20%), this would lead to extra revenues of CONFIDENTIAL per year; which, after accounting for costs, would result in an even smaller extra profit. The customer relationship damage and increased churn caused by a sharp price increase would offset any commercial benefits.

[1] Although there was a large rise in the PPC for Carrier Pre-Select on WLR lines between 2017 and 2018, this was offset by a fall in the PPM.

2 Wholesale call termination and mobile call termination definition and assessment

BT does not support Ofcom's overall approach to WCT and MCT markets definition and assessment

Ofcom question 5.1: Do you agree with our proposed market definition in relation to WCT? Please set out your reasons and supporting evidence for your response.

Yes.

Ofcom question 5.2: Do you agree with our proposed market definition in relation to MCT? Please set out your reasons and supporting evidence for your response.

No.

BT considers that Ofcom's market definition analysis and findings are inconclusive such that there may be a wider product market for calls to mobiles that includes OTT calls (e.g. FaceTime and WhatsApp calls) and potentially other forms of communication on social media (e.g. Facebook, Instagram and instant messaging apps).

Ofcom proposes to define MCT markets as "*product markets for mobile call termination services that are provided by a named mobile communications provider [MCP] to another communications provider, for the termination of voice calls to UK mobile numbers in the area served by that named mobile communications provider [MCP]*".2

Based on this definition, Ofcom identifies a total of 78 separate markets for wholesale MCT services, corresponding to each named MCP. Importantly Ofcom's definition includes the termination of all mobile voice calls by an individual MCP, regardless of where such calls originate including calls from overseas.

Ofcom notes that "*a [10%] SSNIP*[3] *would equate to a price increase of up to 0.05ppm*" and "*a SSNIP in the termination rate [c. 0.5ppm] would be unprofitable if passed through to retail prices*".[4] Ofcom then finds that there are "*no sufficiently close substitutes at the retail level to broaden the retail market beyond the focal product of calls to a specific UK mobile number*".

Specifically, Ofcom argues: "*we do not think that OTT is a sufficient constraint to broaden the market given the small impact a SSNIP would be likely to have, as described above*".[5]

For some types of calls, such as international calls that are priced higher relative to other call types, any increase in the retail price from these levels due to the SSNIP could result in substitution to OTT calls noting that FaceTime WhatsApp are popular choices for communicating with family and friends overseas. Even if the average customer making mobile calls may not switch to OTT this is irrelevant for the hypothetical monopolist test (HMT) which is designed to assess whether there are sufficient customers at the margin that may switch to OTT to render the SSNIP on international calls unprofitable. We consider that customers that make international calls are more likely to represent the marginal customer in any HMT SSNIP test. For example, international call volumes fell a

[2] Ofcom WVMR 2020, para 2.26 and 2.27.

[3] A small, significant non-transitory increase in product price.

[4] Ofcom WVMR para 5.27

[5] Ibid., para 5.28

further 17% in 2018 due to the growing use of OTT compared to a 5% overall increase in mobile calls suggesting customers are likely to be switching to OTT for international calls.[6]

Moreover, where competition takes place across non-price factors, such as call quality or reliability, an alternative approach to defining product markets may be warranted.[7] For example, where traditional carrier grade mobile calls are offered in unlimited bundles, i.e. at a zero incremental price, and where substitutes such as OTT calls are also supplied for a zero monetary price this could mean the traditional SSNIP test framework may be less relevant for defining markets. For instance:

> *"A cautious approach to the SSNIP test is indeed advisable. A price-related test must fail in situations where the price is not the decisive parameter for the purchasing decisions of the clients… the SSNIP test is designed for conventional markets where monetary charges apply. It does not work where the remuneration takes another form, for example attention or personal data."*[8]

> *"…the SSNIP procedure for market definition is focused on 'small' price changes whereas competition in new economy markets focuses much more on product features that have proven to be of enormous value to consumers. These differences in features or functionality are often of such value that they totally dominate small changes in prices."*[9]

Where competition occurs in areas other than price, a potential modification of the SSNIP test would be to consider whether a hypothetical monopolist could reduce the quality of its service (to reduce competition), or in the case of OTT calls increase its data collection (as an indirect price to be paid by the consumer). Where this is the case, recent literature advocates the use of a Small but Significant and Non-transitory Decrease in Quality test (the SSNDQ test), which, like the SSNIP test, asks whether a decrease in quality would be profitable.[10,11]

The reduction in call quality could arise where an HMT operator invests less in the wholesale MCT service platform. This could result in lower call reliability whereby customers cannot make or receive calls during the busy periods or when at the mobile cell edge leading to a greater number of dropped calls and lower call set-up success rates. It could also result in greater latency and jitter as well as poorer calling acoustics making it harder to communicate properly. We consider that it is more likely that a SSNDQ test would lead to product market definition inclusive of OTT calls given the importance of these non-price factors.

In conclusion, we consider that calls to mobiles may sit within a wider product market including OTT calls and potentially other forms of communication on social media (e.g. Facebook, Instagram and instant messaging apps).

Ofcom question 5.3: Do you agree with our provisional conclusion that each provider or WCT has SMP in the market served by that provider? Please set out your reasons and supporting evidence for your response.

Yes.

Ofcom question 5.4: Do you agree with our provisional conclusion that each provider of MCT has SMP in the market served by that provider? Please set out your reasons and supporting evidence for your response.

Retail mobile consumers already make OTT calls using Facetime and WhatsApp as these represent substitutes to calling traditional mobile numbers. OTT calls offered by competing third party providers provide an indirect

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[6] Ofcom Communications Market report 2019

[7] See GSMA policy paper "Resetting competition policy frameworks for the digital ecosystem October 2016, pp 12-18 https://www.gsma.com/publicpolicy/wp-content/uploads/2016/10/GSMA_Resetting-Competition_Report_Oct-2016_60pp_WEBv2.pdf.

[8] A. Gebicka and A. Heinemann (2014), "Social Media & Competition Law', World Competition, 37(149), p. 157.

[9] Office of Fair Trading (2002), supra note 3, paragraph 4.58.

[10] See, for example, Gebicka/Heinemann (2014), supra note 55, p. 156. See also M. Gal and D. Rubinfeld (2015), "The hidden cost of free goods: Implications for antitrust enforcement", p. 35.

[11] In Tencent vs. Qihoo, China's Supreme Court recognised that competition was based on non-price factors and suggested the use of a SSNDQ test. For example, in analysing whether emails and SMS are in the same relevant market, the Supreme Court considered whether instant messaging users would switch to other types of services if there was a decline in quality.

competitive pricing constraint on the traditional wholesale MCT service and therefore currently mitigate - and potentially in the future eliminate - any SMP concerns in the supply of the service.

We also consider that competition from OTT players in the retail mobile market may in the future justify relaxing SMP remedies imposed on providers of the wholesale MCT service, including the removal of the more intrusive SMP remedies such as cost based price controls.

3 Wholesale call termination and mobile call termination remedies

BT believes that MCT cost model WACC should be higher to reflect the correct long-term return, the cost of debt and tax rate.

Ofcom question 6.1: Do you agree with our proposal to maintain a network access obligation on all WCT providers? Please provide reasons and evidence in support of your views.

Yes, however this requirement should not be extended to BT's IP interconnection. Please refer to our answer 7.1.

Ofcom question 6.2: Do you agree with our proposed remedies that would be specific to BT's provision of WCT? We welcome evidence on all aspects of our proposals and whether we should maintain BT's obligation of no undue discrimination. Please provide reasons and evidence in support of your views.

No. Please refer to our answer 7.1.

Ofcom question 6.3: Do you agree with our proposed charge control on WCT and the analysis that informed this proposal? Please provide reasons and evidence in support of your views.

Yes.

Ofcom question 6.4: Do you agree with our proposal to maintain and access obligation on all MCT providers? Please provide reasons and evidence in support of your views.

Yes.

Ofcom question 6.5: Do you agree with our proposed charge control on MCT and the analysis that informed this proposal? Please provide reasons and evidence in support of your views.

Ofcom proposes to continue to set caps on charges for terminating mobile calls that originate and terminate within the UK at the pure Long Run Incremental Cost (LRIC) standard. Under Ofcom's proposals, the mobile call termination (MCT) price cap will be lower than the current rate (estimated 16.8% reduction in the base case). In the first year of the market review period, 2021-22, Ofcom proposes this cap to be set between 0.257ppm and 0.485 ppm (base case 0.389ppm).

Ofcom must ensure that the proposed regulated maximum MTR for national mobile calls promotes future price stability, regulatory certainty and continued investment and innovation in the provision of the wholesale MCT service.

BT considers that the proposed MTR based on the output LRIC of the 2020 MCT model is set below the level required to support these key objectives primarily because Ofcom has underestimated the mobile WACC.

First, BT considers that Ofcom should set the UK MTR for national traffic at no lower than the top of the output LRIC range given the asymmetric risk inherent in setting MTRs at the pure LRIC cost standard.

Setting MTRs at pure LRIC carries asymmetric risk since any errors in output LRIC resulting in an under-estimation of the actual level of LRIC would result in a significant negative impact on economic efficiency and investment by forcing operators to incur a loss on every minute of voice termination. Ofcom should only adopt values in relation to uncertain parameters where it has a high degree of confidence that the values so adopted will not lead to charges below the actual level of pure LRIC.

Second, Ofcom underestimates the mobile WACC by using unreliable methods for estimating some of the WACC parameters and should adjust its approach to ensure that a reasonable return can be made on its investments in the wholesale MCT service.

Third, BT considers that the final MTR rate (in 2020/21 real prices) will need to be adjusted by inflation in each year (e.g. by taking the CPI in months preceding the start of each year of the control).

In this section we assess the updates to the 2020 MCT model including the mobile WACC (which underestimates output LRIC) and traffic volumes (which has a neutral impact on output LRIC).

WACC

In its MCT cost model, Ofcom uses a pre-tax real WACC estimate of 5.8% to calculate the output LRIC.3 This WACC estimate of 5.8% is based on Ofcom's analysis from the Wholesale Fixed Telecoms Market Review consultation (WFTMR). In the WFTMR, Ofcom disaggregates BT Group's WACC estimate into three constituents: 'Openreach', 'Other UK Telecoms' and 'Rest of BT'. Ofcom categorises BT's mobile activities under 'Other UK Telecoms' and estimates a pre-tax nominal WACC of 7.9% for 'Other UK Telecoms'. This translates to a pre-tax real WACC estimate of 5.8%, assuming CPI of 2%.

We have set out our views on Ofcom's WFTMR WACC estimates in our WFTMR consultation response in annex 6[12]. In that annex, we argued Ofcom underestimated the WACC for 'Other UK Telecoms' because of too low estimates of some of the parameters in the WACC calculation. In summary, Ofcom's estimates of the following parameters are too low.

Expected market return

Ofcom estimates a real expected market return of 6.7%, which is based on a range of empirical datasets and approaches. We believe Ofcom's use of dividend growth models (DGMs) to estimate the expected market return is inappropriate, because it is based on subjective assumptions on dividend growth, and where alternative reasonable assumptions would lead to much higher estimates. The use of DGMs to estimate the expected market return has been recently rejected by the CMA in NATS' appeal of air traffic charges.[13]

We recommend Ofcom bases its estimate of the expected market return on long-run historical returns. The expected market return tends to be relatively stable over time. This means that long-run historical returns are the most reliable method for estimating the expected market return going forward, as they capture, more accurately than other methods, this long-run stability. Long-run historical returns also provide objective evidence, in the sense they are realised returns, as opposed to an estimate based on judgement. The risk of estimation error is therefore smaller than for alternative approaches.

Based on long-run historical returns, BT estimates an expected market return of 7%[14], which is higher than Ofcom's estimate of 6.7%.

Cost of debt

Ofcom estimates BT Group's cost of debt as 3.5%, based on a weighted average of the cost of embedded debt and cost of new debt. Ofcom places equal weight on both embedded and new debt in its calculation. In our WFTMR response, we argued Ofcom should place more weight on embedded debt based on our analysis of the maturity date of BT's existing bonds[15]. We calculated that only 22% of BT's existing bonds would mature during the upcoming regulatory period, implying 78% of BT's overall cost of debt is driven by its embedded debt. Placing more weight on embedded debt, up from 50% to 78%, leads to a higher cost of debt estimate of 3.8%.

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[12] BT, 29 May 2020. Annex to the BT response to Ofcom's consultation on promoting competition and investment in fibre networks –Wholesale Fixed Telecoms Market Review 2021-26. Annex 6. p23.

[13] CMA, 29 September 2020. Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations – Provisional findings. Paragraphs 9.208, 9.212. p554-555.

[14] BT, 29 May 2020. Annex to the BT response to Ofcom's consultation on promoting competition and investment in fibre networks –Wholesale Fixed Telecoms Market Review 2021-26. Annex 6. Paragraphs A6.10-6.20. p24-25.

[15] BT, 29 May 2020. Annex to the BT response to Ofcom's consultation on promoting competition and investment in fibre networks –Wholesale Fixed Telecoms Market Review 2021-26. Annex 6. Paragraphs A6.29-6.32. p26-27.

Tax rate

Ofcom assumes a 17% corporate tax rate in its pre-tax WACC calculation, which does not reflect the current Government's decision to freeze corporate tax rates at 19%. Ofcom should use a 19% tax rate in its WACC calculation.

Based on our estimates of the above parameters, we estimate a real pre-tax WACC of 6.3% for 'Other UK Telecoms', higher than Ofcom's estimate of 5.8%, as shown in Table 1 below. Ofcom should apply this change to its MCT cost model.

Table 1 – Comparison of Ofcom and BT estimate of WACC for 'Other UK telecoms'

Item	Ofcom estimate	BT estimate	BT comment
CPI	2.0%	2.0%	
Nominal risk-free rate	1.5%	1.5%	
Nominal ERP	7.3%	7.6%	
Nominal TMR	8.8%	9.1%	Ofcom estimate of real expected market return (TMR) of 6.7%, which gives weight to DGM evidence. BT estimate of 7.0% based on long-run historical returns.
Debt BETA	0.1	0.1	
Asset BETA	0.65	0.65	
Forward-looking gearing	40%	40%	
Equity BETA	1.02	1.02	
Cost of equity (post-tax)	9.0%	9.3%	
Cost of equity (pre-tax)	10.8%	11.4%	
Corporate tax rate	17%	19%	Ofcom uses incorrect tax rate and should instead use latest UK corporate tax rate of 19%
Cost of debt (pre-tax)	3.5%	3.8%	Ofcom places equal weight on embedded and new debt. BT estimate based on profile of BT's debt maturities and gives more weight to embedded debt.
WACC (pre-tax, nominal)	7.9%	8.4%	
WACC (pre-tax, real)	5.8%	6.3%	

We refer Ofcom to annex 6 of our WFTMR consultation response for the full detail of our arguments.[16]

We also note that Ofcom has not updated some of its estimates of individual parameters that make up its current WACC calculation from its 2019 BCMR statement. We have concerns with our and other stakeholders' ability to review and comment on any amendments Ofcom makes to WACC parameters at this later time. Consistent with Ofcom's obligations to consult, if Ofcom makes material changes to its estimates based on new evidence, we would expect to be given ample opportunity to review and comment on such evidence in advance of a draft or final statement being published.

Traffic updates

BT supports updating the 2020 MCT model for the latest handset and data device subscriber figures, 4G penetration rates, 4G data usage (to ensure total data usage is consistent with the increase in modelled 4G penetration), and monthly voice usage. This will ensure that any changes in actual traffic patterns and levels compared to the 2020 MCT model forecasts are reflected in the output LRIC range.

BT notes that Ofcom has significantly increased its 4G penetration assumptions including the proportion of customers on 4G devices from 57% (at the start of 2020) to 77%.[17,18] The updated 4G penetration estimate increases the output LRIC by 0.061ppm or 13%.

While the total cost of operating a 4G network will be lower than operating a 2G/3G network the 2020 MCT model shows higher 4G penetration (and higher proportion of customers on the lower cost 4G network) leads to a higher incremental blended 2G/3G/4G output LRIC.

One explanation for this result is that the MCT model generates output LRIC using the subtraction method. Using this method, Ofcom estimates the total cost of supplying all mobile network services (data, voice and SMS) and subtracts the total cost of supplying the same services less the increment of MCT traffic. In this way the MCT model estimates the mobile network costs that are avoided by not serving MCT traffic.

However, MCT traffic represents a smaller layer of traffic relative to overall network traffic such that the estimation of output LRIC can lead to 'modularity effects'. For instance, if assets are fully utilised then adding incremental traffic will give rise to new assets and costs immediately. However, if assets are underutilised, where traffic is added then spare capacity will be used before any additional costs are incurred (or alternatively where traffic is removed costs will not be avoided straight away). This provides one possible explanation for why higher 4G penetration generates a higher blended 2G/3G/4G unit cost.[19]

We consider it is also appropriate to look at the traffic updates in the round. Taking the updates to 4G penetration, data and voice usage[20] together, BT notes that the net impact of the aggregated traffic updates on the output LRIC is broadly neutral (an increase of 0.001ppm).

[16] BT, 29 May 2020. Annex to the BT response to Ofcom's consultation on promoting competition and investment in fibre networks –Wholesale Fixed Telecoms Market Review 2021-26. Annex 6. p23.

[17] Ofcom WVMR 2020 para A6.28(b).

[18] BT also notes that for their base case Ofcom assume that the proportion of gross additions that subscribe to 4G is constant at 85% throughout the review period up to 2025/26. This has been revised down from the 95% assumption used in the 2018 MCT cost model. Ofcom also assumes the proportion of customers on 4G devices by the end of the period therefore remains largely unchanged compared to the 2018 MCT cost model assumption of 90% (see Ofcom WVMR 2020 para A6.30).

[19] BT notes Ofcom has previously considered modulatory effects in the 2015 MCT consultation, paragraph A16.19, footnote 173.

[20] BT notes that Ofcom's inclusion of increased mobile (4G) data traffic reduces the output LRIC by 0.034ppm (or 7%) and increased mobile voice traffic reduces the output LRIC by 0.025ppm (or 6%).

BT agrees with Ofcom's proposal to grant reciprocity for international termination rates

Ofcom question 6.6: **Do you agree with our proposal to introduce a reciprocity condition on the termination of international calls and the analysis that informed this proposal? Please provide reasons and evidence in support of your views.**

BT agrees with Ofcom's assessment that a reciprocity condition is likely to deliver the best outcome for UK consumers in relation to both fixed and mobile call termination, and to all international calls (EEA and non-EEA). However, BT asks Ofcom to consider convening an industry forum or workshop prior to implementation in April 2021 in order to ensure a common understanding of how international termination and associated UK surcharges will be implemented. We provide below a list of areas that the industry should get an agreement on

Common understanding is required on implementation

Reciprocity of the surcharge rates between UK CPs

Not all UK CPs have international gateways. Those who do not have one, will be using services of a UK transit CP and would have no knowledge of which surcharge rate is being applied by the foreign carrier. As such they would not hold the information necessary to establish the reciprocal termination rate for traffic from that foreign carrier. We believe Ofcom should consider how this might be addressed. One potential option that could be considered is whether CPs with international gateways (UK transit CPs) should register as such and publish their surcharge rates where they choose to apply a surcharge.

The mechanism by which CPs with an international gateway should calculate the surcharge for charging another UK CP

Each country may have multiple CPs, each with different fixed and mobile termination rates. For ease of billing, the UK CP may choose to charge a 'blended rate' to other UK CPs when handling their international transit. Guidance on the calculation of such blended rates would help to ensure a consistent and fair approach across the industry.

Avoiding a fixed porting differential

CPs charging different surcharge rates for fixed calls will create a porting differential. For example, if a call originating in Australia is terminated by the UK CP who is the 'range holder' of the UK CLI and charges £0.02/min for the call, but the number is ported to another UK CP who charges £0.03/min for calls from Australia. In order to address this differential, BT suggests that industry should consider whether the interconnect model for ported fixed calls should move to the "donor pays all" model used by mobile CPs (i.e. where the donor CP pays out what they receive for the call).

The termination rate to charge for malformed/missing CLIs

BT suggests that Ofcom allow CPs to apply the highest rate (of all international origins) where they transit a call with a malformed or missing CLI. This will discourage CPs from deliberate manipulation of CLIs to reduce their international transit costs.

Treatment of Crown dependencies

BT recommends the inclusion of number ranges used by the Crown dependencies of Jersey, Guernsey and the Isle of Man in the proposed reciprocal charging model. This would ensure consistency in the treatment of non-UK CPs and will further benefit UK consumers.

Non-geographic fixed termination

BT seeks clarity from Ofcom on the treatment of 03, 070 and 08 non-geographic number ranges. While international call volumes terminating on UK non-geographic numbers are currently low, we believe that the exemption of these number ranges from reciprocal charging could lead to growth in demand for such services from CPs wishing to bypass the cost associated with offering geographic international transit. BT recommends that international termination to non-geographic ranges is included in the reciprocity arrangements and asks Ofcom to confirm whether the Fixed or Mobile termination rate should be applied to each range.

4 Wholesale call termination – interconnection

Ofcom question 7.1: Do you agree with our proposed non-pricing remedies specific to BT? Please set out your reasons and supporting evidence for your response.

Requirement to provide network access at reasonable request and not to unduly discriminate

BT disagrees with the introduction of these requirements. The obligation to provide network access upon reasonable request is already sufficiently addressed under Ofcom General Condition A1 – Obligation to negotiate interconnection - as well as by the end-to-end connectivity obligation condition 1[21]. As such BT considers the access obligation to be unnecessary.

Furthermore, as Ofcom set out in the consultation (para 7.47), the scope for harm is significantly reduced because IP interconnection is simpler and cheaper than TDM interconnection. As such BT believes that the obligation not to unduly discriminate is unnecessary and unjustified.

Transparency requirements

As set out in the regulatory reporting requirements section below, where BT has regulatory reporting obligations, we would welcome the opportunity to discuss the details with Ofcom. We refer here in particular to the new obligations for IP interconnection applicable to BT only. BT believes that significant work will have to be carried out for the new requirements to be reflected in the current Reference Offers and Contracts, as well as set up a new monitoring system for KPIs on port capacity and faults performance. As such we invite Ofcom to ensure that any data request to BT is proportionate to its objectives as set out in the regulation.

It is also worth noting that ports are generally used for both-way traffic and not just for WCT into BT. Other non-regulated traffic types are exchanged on these and we do not 'separate' the routes and traffic in an IP world, unlike some situations in the TDM world / on DLE interconnects due to the nature of the network architecture. Further, to meet some CPs' redundancy requirements we provision a higher volume of ports than are used.

The detailed costs for IP interconnection services[22] will therefore need to be reported on the basis of cost allocation, as these are not necessarily operationally exclusive to each other (unlike TDM interconnect costs).

Ofcom question 7.2: Do you agree with our proposals relating to BT providing transparency on its migration timetable? Please set out your reasons and supporting evidence for your response.

BT agrees with Ofcom's proposed approach to FTR POC migration and its request to BT to provide a migration timetable by June 2022. As previously set out to Ofcom, BT believes that this approach is significantly better than imposing on a fixed date migration which would have extremely negative effects on BT and the industry[23].

Nonetheless, BT disagrees with Ofcom arguments at paragraph 7.82. Imposing a transparency obligation only upon BT and just encouraging other CPs "*to work together and provide each other with their own timetable*", will not be enough to secure the efficiency benefits needed to deliver a smooth industry migration.

For BT to efficiently deliver a smooth migration experience for CPs, BT needs to have visibility of larger[24] CPs' migration plans. This is important as at an individual CP level there is a co-ordination problem - individual CPs may rely on other CPs to disclose their migration timetable whilst not disclosing their own (see below). In addition

[21] Ofcom 2006: End-to-end connectivity – Schedule – part 2

[22] Table 8.3

[23] BT letter -response to Ofcom IP migration questions letter of 27th July 2020

[24] We define "larger" as being above a size threshold of [CONFIDENTIAL] TDM ranges plus prefixes, as of 1 April 2021. This would capture [CONFIDENTIAL]% of number ranges and GNP prefixes, without placing any requirements on the smallest CPs.

to enabling a smooth industry migration experience, transparency of larger CPs' migration plans will also result in lower cumulative industry migration costs (e.g. improved resource co-ordination, shorter migration timeline, reduced IP-TDM conversion costs) with resulting benefits for all CPs and indirectly lower costs for their customers.

In addition, requiring larger CPs to share their migration plans will enable BT to effectively cater for CPs' needs, including conducting the vast and complex re-routeing work required to move each of their lines across to the IP interconnect point (see below).

Other CPs are unlikely to share their migration timetables early enough to enable BT to plan a smooth migration experience for the whole of industry

Without a transparency requirement applying to all CPs, the efficiency benefits to enable a smooth migration plan for industry will be not be realised. This is because each CP individually has an incentive **not** to share its own migration plan and yet optimise with respect to others' migration plans – this results in a co-ordination problem across CPs (in the same way as in the Prisoner's Dilemma).

In practice, it will be very difficult for BT to convince other CPs to share their migration plans, in the absence of Ofcom regulation requiring them to do so. As a matter of fact, as of today no other CPs have shared with BT their plans despite our requests.

BT needs to carry out significant re-routeing work and agree dates with other CPs

Other CPs account for over 60%[25] of exchange lines which will need to be re-routed, demonstrating the significant size of the undertaking.

To illustrate this, consider that:

- BT has c. 360 geographic TDM routeing plans showing how CP ranges (or porting prefixes) should be delivered to CPs. Each routeing plan contains different numbers of number ranges.
- To change a routing plan to route the numbers to the CP via an IP interconnect, the CP owning the plan would raise a Data Management amendment (DMA) request and a "re-point date" would be agreed with BT.
- BT will not carry out a re-point for more than one CP on any given day so as not to compromise any roll-back should this be required. Whist some DMAs can be grouped into a single re-point date, others containing a large number of ranges must be split across multiple dates.
- Agreeing re-point dates to move all CPs TDM traffic (including non-geos ranges) to IP is a significant volume of work, given the volume of routeing plans involved. This highlights the importance of all CPs to start engaging with BT and sharing their full migration plans so that we can align resources and smooth out workload.

DMA requests and re-point dates need to be mutually agreed between BT and other CPs. BT has no ability to accelerate CPs migration process or to 'force' them to a specific time slot. The only way for this to happen is to enable appropriate planning to take place. Ofcom should therefore enable a smooth industry migration experience by imposing the same transparency of migration plans that BT faces.

On a separate note: for consistency with existing regulation BT proposes that in paragraph 7.77(c) "30 days" is changed to "one calendar month" because the Element Based Conveyance table is published monthly, not every 30 days. Ofcom set this frequency in the 2004 INCA/CLI final determination[26].

Finally, in Annex 9, proposed Condition 7.3 in Ofcom's consultation, Ofcom states that "*The dates specified in the Migration Timetable must be no earlier than [1 January 2023] and no later than [31 March 2025], or such*

[25] Ofcom Telecom market data update Q4 2019 Table 2 shows that BT has 38.3% of exchange lines meaning that collectively other CPs have 61.7% of exchange lines

[26] Ofcom (2006): Determination to resolve a dispute between BT and various communications providers about INCA/CLI - para 3.11

other dates as Ofcom may direct, and must, as far as is reasonably practicable, be evenly spread between that date range." We request that Ofcom changes the date of "1 January 2023" to "1 April 2022", so that we are not constrained in when we can begin migration, subject to the obligations Ofcom proposes in paragraph 7.77 including giving CPs 12 months' notice of migration.

Ofcom question 7.3: Do you agree with our proposal to require BT to provide WCT for all geographic calls as if its migration to IP is complete, from 1 April 2025? Please set out your reasons and supporting evidence for your response.

BT agrees with Ofcom's proposal and believes that the same approach should be extended to include all CPs to provide FTR at an IP POC by 1 April 2025. Without this, Ofcom would be imposing disproportionate costs on BT – since it would be required to keep its TDM network open until the last CP has chosen to migrate. This would impose significant costs on BT, including an unjustified increase in risk and uncertainty about the closure of its TDM network.

Other CPs may be able avoid this risk and rely on transit and media conversion services offered by third parties, whereas BT, given our end-to-end connectivity obligations, is unable to adopt the same approach. Imposing symmetric backstop dates on all CPs to migrate to IP interconnect by April 2025 would address the issue of disproportionate costs and risks being borne by BT.

In addition, by giving greater certainty of the TDM closure, such a requirement would enable the whole industry to more efficiently: (i) route traffic during the migration period by reducing the period during which TDM-IP media conversion services are necessary (ii) plan more efficiently their own TDM network closures. These would both help to avoid potentially higher prices for end-users.

In discussions, Ofcom has suggested that backstop dates on other CPs may not be necessary because they want to move to IP as quickly as possible. If this is the case, then imposing the backstop requirement will not impose any costs on them but would mitigate the risk that BT and industry would have to bear significant and disproportionate costs if even one CP didn't manage to hit the April 2025 deadline.

Alternatively, if Ofcom didn't want to impose the restrictions on other CPs, we believe it would need to provide explicit, written comfort to BT that BT would not be required to provide TDM interconnection to any CPs after April 2025 (or earlier when the FTR POC is migrated before that date - see answer to 7.4 below).

Ofcom question 7.4: Do you agree with our proposal to subject BT's provision of TDM interconnection circuits to a charge control which expires on 1 April 2025? Please set out your reasons and supporting evidence for your response.

BT agrees with the principles set out in Ofcom's proposal as detailed in the consultation. BT notes that the charge control could expire ahead of 1 April 2025 when the FTR POC is migrated to IP as Ofcom sets out at 7.103 first bullet: "*Duration: the charge control for the Interconnect Service Basket (should) be implemented at any DLE from 1 April 2021 until 1 April 2025 or one month from when WCT at the regulated FTR for number blocks for which the DLE was the nominated POC, is made available at an IP POC, whichever is earlier*[27]. "

BT requests Ofcom to discontinue the entire set of remedies applicable to the TDM Interconnection, as well as non-pricing remedies, in line with the same principle established at 7.103. Effectively once a number block is migrated to IP it is unnecessary to provide TDM interconnection for that number block.

Ofcom question 7.5: Do you agree with our proposal to require BT to provide IP interconnection on fair and reasonable terms, conditions and charges supplemented by guidance? Please set out your reasons and supporting evidence for your response.

[27] Emphasis added

Ofcom's rationale for requiring BT to provide IP interconnection on fair and reasonable terms, conditions and charges is mainly twofold:

a) Ofcom believes that BT would have the ability and incentive to refuse access to its network and/or to apply unfair or unreasonable terms;
b) Ofcom believes that BT's high share of WCT volumes and its importance as a partner for other fixed providers means that the impact of discriminatory conduct by BT would have a greater effect on downstream competition than similar conduct undertaken by other telecoms providers;

BT disagrees with Ofcom's analysis and believes that introducing measures on its IPEX accommodation and interconnection services is disproportionate. In respect of (a), as already discussed in our answer to question 7.1., BT already needs to comply with GC A1 and the end-to-end connectivity obligation. In practice this restricts its ability to negotiate charges for connecting to its network.

Ofcom's assessment in (b) is not substantiated. Ofcom qualitative judgments are insufficient to impose new measures particularly when, compared to the TDM world, there are low barriers to entry enabling the market to be more competitive. As Ofcom itself states in paragraph 4.33 of its consultation, Ofcom expects a material improvement in competition in the next review period, as services that replace those provided over WLR will be supplied by a range of providers, driven in part by significant growth in the use of managed IP-based voice services. Similarly, as Ofcom states in paragraph 5.8 of its Future of Interconnection and Call Termination consultation, "*the transition from TDM to IP networks may lead to further changes in the pattern of interconnection between networks, for example by making call routing more flexible, and by reducing the cost of interconnection, thereby reducing the barrier to direct interconnection between networks*".[28] On this basis, we expect interconnection to see a material improvement in competition over the next review period.

If despite the above, Ofcom decides to regulate IPEX accommodation and interconnection services, BT notes that:

- Each port carries transit and termination traffic which can't be distinguished. So, introducing port charge regulation for termination traffic introduces a technical complexity and forces an inefficient technical solution. Ofcom should instead consider alternative approaches such as regulating port services based on the proportion of terminating traffic to the total.
- Co-location, electricity and external cable link services are currently purchased by CPs directly from Openreach which sells accommodation for MPF, SMPF, NGA or Ethernet and are not provided by BT Enterprise (a downstream division of BT Group). IPEX effectively requires Ethernet capacity and as such CPs can continue to purchase these regulated services through Openreach without the need for BT Enterprise to modify its current portfolio or develop an ad-hoc co-location product just for IPEX. It is worth noting that a CP can nonetheless purchase Co-location related services from other CPs who already have Direct, Indirect or Peering access to BT network.

Ofcom question 7.6: Do you have any concerns regarding the existing obligations, which do not require a hosting party to ensure that hosted providers can make WCT available at an accessible POC? Please set out your reasons and supporting evidence for your response.

BT agrees with the principles set out by Ofcom in 2017 as reported in the consultation at 7.143. However, it has become evident that 'hosting' is not clearly defined and there are risks of different interpretations that could cause some confusion about charging.

BT is of the view that every CP[29] should be accountable for providing FTR POCs for their own number ranges. This is consistent with our understanding of Ofcom's network access requirement for WCT which mean that CPs must make available, on request, at least one POC where they will only have to pay the regulated FTR, as Ofcom

[28] Ofcom, "First consultation: Future of interconnection and call termination", paragraph 5.8, published on 11 April 2019.
[29] In this context, a "CP" is defined as anyone with number ranges allocated by Ofcom who has an interconnect agreement with at least one CP, or offers an FTR POC to at least one CP, or has a license to operate a network in the UK.

notes in paragraph 7.141 of its consultation. It should **not** be the ultimate responsibility of any other CP that they connect with (including a transit provider or so-called "hosting CP") to respond to requests for an FTR POC on that CP's behalf, or to provide an FTR POC on that CP's behalf, unless this has been explicitly requested by that CP.

BT suggests Ofcom to review and clarify the definition of 'hosting' in this context.

5 Regulatory reporting requirements

Ofcom question 8.1: Do you agree with our proposed regulatory reporting requirements on BT?

We broadly support Ofcom's proposals on regulatory reporting requirements detailed in the consultation.

We have commented on many items that are common to both this and the February 2020 Reporting Consultation[30] such as the directions and SMP conditions proposed[31] and do not intend to replicate those included in our response[32].

Considering the reduced market size and a higher degree of focus on Openreach within the Regulated Financial Statements (RFS), we support the proposal to reduce reporting requirements[33] for Wholesale Call Termination (WCT) and TDM interconnection.

Where BT has regulatory reporting obligations, we would welcome the opportunity to discuss with Ofcom the possibility of the information relating to the Wholesale Voice Markets being published in a separate document to the RFS, leaving the latter as an Openreach only set of statements.

Since CSI and ISI circuits are connected at the non-DLE, and there are zero volumes at the DLR, we cannot report them as Ofcom proposes. Instead we suggest that they are removed altogether in the -proposed TDM interconnection service schedule[34].

Reporting on IP interconnection services[35] needs further consideration. The ports are generally used for both-way traffic and not just for WCT into BT. Other non-regulated traffic types are exchanged on these and we do not 'separate' the routes and traffic in an IP world due to the nature of the network architecture (unlike some situations in the TDM world / on DLE interconnects). Further, to meet some CPs' diversity requirements we provision a higher volume of ports than are used.

The detailed costs for IP interconnection services[36] will therefore need to be reported on the basis of cost allocation, as these are not necessarily operationally exclusive to each other (unlike TDM interconnect costs). We welcome the opportunity to work with Ofcom to agree the basis of allocation of costs for these services based on available operational data[37].

Where BT has regulatory reporting obligations, we would welcome the opportunity to discuss with Ofcom the possibility of the information relating to the Wholesale Voice Markets being published in a separate document to the RFS, leaving the latter as an Openreach only set of statements.

The costs associated with IP interconnection services are expected to be low and therefore we support Ofcom's proportionate approach for estimating and publishing costs for these regulated services.

We concur that it is far more sensible to have a single column for 'Rest of BT' (i.e. revenues and costs related to BT's non-Openreach operations)[38] with relevant notes in the performance summary.

[30] Promoting competition and investment in fibre networks: BT Regulatory Financial Reporting requirements covering wholesale fixed telecoms markets 2021-26, published 6 February 2020

[31] Para 8.11 and 8.12

[32] BT's response to Ofcom's consultation document: Promoting competition and investment in fibre networks: BT Regulatory Financial Reporting, Reporting requirements covering wholesale fixed telecoms markets 2021-26

[33] Para 8.16

[34] Table 8.2

[35] Table 8.3

[36] Table 8.3

[37] Para 8.70

[38] Para 8.63

As indicated in our response to the Regulatory Reporting Consultation[39] we agree that charges for accommodation, power and Cablelink reported in a 'Shared Ancillaries' Schedule in the RFS.

Ofcom refers to its proposals to maintain consistency on assurance requirements between those set out in the WFTMR and this WVMR document in paragraph 8.79. While we have no issue with that concept per se, we have expressed our concerns and issues with some of the proposals in the WFTMR over audit requirements provided in our response to the WFTMR consultation. We do not intend to repeat that here but refer to our response [40]

[39] BT's response to Ofcom's consultation document: Promoting competition and investment in fibre networks: BT Regulatory Financial Reporting, Reporting requirements covering wholesale fixed telecoms markets 2021-26

[40] Paragraph 5.6-5.11 BT's response to Ofcom's consultation document: Promoting competition and investment in fibre networks: BT Regulatory Financial Reporting, Reporting requirements covering wholesale fixed telecoms markets 2021-26

6 WCT IP interconnection standards

Ofcom question 9.1: **Do you agree with our initial view that the risks associated with IP interconnection standards should be manageable by industry?**

Yes. As Ofcom notes (at paragraphs 9.12 and 9.20), mandating compliance with the NICC standards could lead to delays and impose large unnecessary costs on telecoms providers who deployed IP interconnects before the NICC IP interconnection standards were finalised and who have already effectively mitigated the risks. Such unnecessary costs could lead to higher prices for consumers. The industry has put a great deal of effort into developing the NICC standards and telecoms providers have a strong incentive to manage the risks on a bilateral basis (when establishing interconnection), minimising costs which should lead to lower prices for consumers.

Ofcom question 9.2: **Do you agree with our proposed guidance concerning IP interconnection? Please set out your reasons and supporting evidence for your response.**

We agree that a CP not using NICC standards must pay any interoperability costs (traffic in both directions).

However, we feel that Ofcom's guidance does not go far enough because, as Ofcom acknowledges in paragraph 9.9 bullet point 3, some CPs who **do** use NICC standards use different configuration parameters to each other, potentially affecting compatibility of call setup and mid-call features. We ask Ofcom to issue guidance that every CP using NICC standards should, if they are unable to reach commercial agreement, be able to specify the only configuration parameters values that they will interconnect with at the FTR/MTR/NGCS, by issuing a table of compliance ranges. In the event of non-specified parameters being used by another CP, the party paying for the resulting interoperability service would be the CP who pays for any other conveyance costs associated with the call, including conversion between the two CPs' configuration parameters. This is to ensure that the CP causing the cost to be incurred is the one paying for it, in line with Ofcom's "cost causation principle"[41] which states "*costs should be recovered from those whose actions cause the costs to be incurred at the margin*".

41 See, for example, Ofcom's "Wholesale Local Access Market Review: Recovering the costs of investment in network expansion" consultation, 9 August 2017, paragraph 6.11(b)

7 - 070 – 'follow me' numbers regulation

Ofcom question 10.1: **Do you agree with our proposed market definition and SMP assessment for termination on the 070-number rage? Please set out your reasons and supporting evidence for your response.**

Yes.

Ofcom question 10.2: **Do you agree with our proposed remedies for operators holding SMP for termination on the 070-number range? Please set out your reasons and supporting evidence for your response.**

Yes.

8 Donor conveyance charge

Ofcom question 11.1: Do you agree with the analysis and conclusion of our general position on not renewing the DCC price cap? Please provide reasons and evidence in support of your views.

Yes.

Appendix A List of acronyms

CMA: Competition and markets authority

CP: Communication provider

CPI: Consumer Price Index

DGM: Dividend Growth model

DLE: Digital Local Exchange

DMA: Data management amendment

EEA: European Economic area

EBC: Element based conveyance

ERP: Expected market return

FTR: Fixed termination rate

FTR POC: Fixed termination rate Point of Connection

GC: General Conditions

INCA/ CLI: Inter-Network Call Accounting ("INCA") billing using Calling Line Identification ("CLI")

IPEX: IP Exchange – refers to IP platform product which enables IP interconnection

MCT: Mobile Call termination

MCP: Mobile communication provider

MPF: Metallic path facility, Openreach service enabling Local loop unbundling

MTR: Mobile termination rate

NICC: Network interoperability consultative committee

NGA: Next Generation access

NGCS: Non-Geographic call services

NATS: National Air traffic services

OTT: Over the top providers- refers to alternative comms services such as WhatsApp, skype etc.

RFS: Regulated financial statement

TMR: Total market return

TDM: Time division multiplexing -refers to traditional circuit switched telephony network

RLAH: Roam like at home

SMPF: shared metallic path facility, Openreach service enabling shared unbundling

WACC: Weighted average cost of capital

WCO: Wholesale Call Origination

WCT: Wholesale call termination

WFTMR: Wholesale fixed telephony market review

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