BASIC DETAILS
Consultation title: Narrowband Market Review – Consultation on possible approaches to cost modelling for the Network Charge Control for the period 2013 - 2016
To (Ofcom contact): Paul Jacobus
Name of respondent: Xavier Mooyaart
Representing (self or organisation/s): Hutchison 3G UK Limited ("Three")
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Three's Response to Ofcom's Narrowband Market Review Consultation on possible approaches to cost modelling for the Network Charge Control for the period 2013 – 2016

9 November 2012



Registered Office: Star House, 20 Grenfell Road, Maidenhead, Berkshire, SL6 1EH Registered Number: 3885486 England and Wales

A Hutchison Whampoa Company

Hutchison 3G UK Limited ("**Three**") welcomes the opportunity to respond to Ofcom's Narrowband Market Review Consultation on possible approaches to cost modelling for the Network Charge Control ("**NCC**") for the period 2013 – 2016, published on 28 September 2012 (the "**Consultation**").

1. Legal Framework

Under the EU Recommendation of 7 May 2009 on the Regulatory Treatment of Fixed and Mobile Termination Rates in the EU (the "**2009 EC Recommendation**") the EU recommends a number of principles to Ofcom for consideration when setting call termination rates, including:

- The evaluation of efficient costs: this should be "based on current cost and the use of a bottom-up modelling approach using long-run incremental costs (LRIC) as the relevant cost methodology."
- On technology choice: "The cost model should be based on efficient technologies available in the time frame considered by the model. Therefore the core part of both fixed and mobile networks could in principle be Next-Generation-Network (NGN)-based."² In addition the Explanatory Note to the EC Recommendation observes, in relation to fixed networks, that:

"From a forward-looking perspective, a new operator would choose a packetswitched network with all services delivered over an IP core network. Given that regulating termination rates at the level of efficient costs aims at reflecting a situation which would prevail under competitive circumstances, this implies the selection of the most efficient technologies subject to the availability of such technologies in the timeframe considered by the model. In a competitive market, a new entrant would opt for the most efficient available technology, i.e. one based on NGN, for the purposes of building a core network. Hence, a BU model built today could assume that the core network is NGN-based, to the extent that the costs of such a network can be reliably identified."³

- Approach on network cost verification: "NRAs may compare the results of the bottom-up modelling approach with those of a top-down model which uses audited data with a view to verifying and improving the robustness of the results and may make adjustments accordingly." ⁴
- **Approach on asset depreciation**: "The recommended approach for asset depreciation is economic depreciation wherever feasible."⁵

Three supports the principles outlined in the EC's Recommendation as an important means of generating efficient outcomes consistent with those in a competitive market and believes that they should form the basis for Ofcom's approach to the NCC. In particular we agree that it is appropriate, as in the price control for mobile call termination, for the NCC to be based on a

¹ See paragraph 2 of the EC Recommendation.

² See paragraph 4 of the EC Recommendation.

³ See Section 5.1.1 of the associated Explanatory Note to the 2009 EC Recommendation (the "**Explanatory Note**").

⁴ See paragraph 3 of the EC Recommendation.

⁵ See paragraph 7 of the EC Recommendation.

pure LRIC model of efficient costs, which should be modelled on the basis of a core NGN network.

2. Fixed call termination - Preference for Pure LRIC

As set out above, and consistent with our response to Ofcom's Call for Inputs of 28 June 2012 ("**Three's CFI Response**"), Three believes that, in the absence of compelling reasons not to do so, the appropriate cost benchmark to adopt for fixed call termination should be that of a Long Run Incremental Cost (pure LRIC) model.

The use of pure LRIC, and Ofcom's approach to modelling for this cost, has been upheld by both the Competition Commission and the Competition Appeals Tribunal and in Three's view, the same reasoning underpinning those decisions applies equally to MTRs as FTRs.

In particular, Three considers that such an approach will deliver similar economic benefits to those identified in the MTR context. Accordingly, and in order to avoid high termination rates dampening retail price competition between CPs and distorting competition between mobile and fixed operators, FTRs should be similarly based on pure LRIC. A technology neutral approach needs to be applied to correct the existing inconsistency in the cost base for regulated FTRs and MTRs.

3. Choice of network technology

We note that Ofcom considers that "the time has come when NGNs can reasonably be considered as the MEA for voice services"⁶ in relation to the provision of a narrowband fixed voice service. We support Ofcom's approach on this and agree it is in line with the 2009 EC Recommendation that a cost model (for fixed termination) should "...be based on efficient technologies available in the timeframe considered by the model" and that the core part of a fixed network "...could in principle be Next-Generation-Network (NGN)-based." NGN core networks are already being deployed and will certainly be the benchmark of an efficient network come the end of the glide path of any proposed NCC. Although some operators may not have implemented full NGN core networks, this does not alter whether this is the appropriate benchmark if Ofcom is to implement a NCC consistent with the Recommendation.

4. Use of Points of Interconnection (POI) in Ofcom's model

In line with the EC Recommendation's aim of ensuring "*the cost model is based on efficient technologies available in the time frame considered by the model*" for fixed termination, a NGN-based network involves using fewer points of interconnection than an equivalent TDM network. We note that Ofcom also makes this observation of NGN models developed in other European countries, which typically support a relatively small number of POIs: "*…in France, ARCEP required IP interconnection to be made available at fewer than 24 POIs, compared to around 400 TDM interconnection points.*"⁷ Three believes a similar approach should be adopted in the UK.

⁶ See para. 3.59 of the Consultation.

⁷ See para. 3.68 of the Consultation.

5. Costs of conversion from TDM to IP

We note that in light of its proposal, from 2013 onwards, to identify NGN as the MEA for voice services, Ofcom goes on to consider the question of whether it should change from its current position of asking the operator of a NGN to bear the costs for conversion of traffic between TDM and IP⁸ to a regulatory position implying that TDM operators would bear their own costs of conversion (and those costs should not be included in the charge controlled rates)⁹. We support Ofcom's proposed regulatory approach on this at paragraphs 3.81 and 3.82 of the Consultation and agree that the costs of conversion should be dealt with separately from any charge controlled rates. This will set the right efficiency incentives for TDM operators to move to IP.

6. Use of a bottom-up cost model

We agree that Ofcom should adopt a bottom-up pure LRIC model for a NGN fixed network, in line with the EC Recommendation and its approach to MTRs. Ofcom's proposed model will need to be based on the most efficient technological developments and we therefore support Ofcom's objective of ensuring it achieves the best means of calibrating its model through using real-world network inputs.¹⁰

7. Proposed implementation of Ofcom's cost model design

Three's more detailed observations on particular aspects of Ofcom's proposed cost model design are set out in the Annex to this Response.

Three also has an observation on one of the assumptions Ofcom is looking to use in its cost model – namely, Ofcom's proposal to use a 25% market share assumption for the hypothetical NGN operator, on the grounds that it mimics the path of prices in a competitive market.¹¹ This proposal is included despite the fact that Ofcom also acknowledges that a higher market share assumption would be more consistent with the EC Recommendation, with its aim of setting cost-based charges.¹² We would appreciate a more detailed explanation of how Ofcom will balance these two considerations, and on how Ofcom's 25% market share assumption is considered to be consistent with both an avoidance of cost over-recovery (given that BT will be enjoying greater economies of scale than those assumed), and with Ofcom's approach to modelling costs in other markets (e.g. Leased Lines). In particular, we believe that the sensitivity of Ofcom's cost model to the market share assumption should be re-examined. Specifically, changes to the market share assumption in the model currently produce large differences in the LRIC outputs.

8. Non-network costs

Ofcom's 2011 MCT Statement found no clear relationship between administration costs and traffic volumes and so took the view that if there were traffic sensitive administration costs –

⁸ See Ofcom's 2011 FTR Guidance "Fair and reasonable charges for fixed geographic call termination, Statement and final guidance" – an approach taken on the basis that, as Ofcom explained at para. 4.84 of this Guidance: "At least while TDM technology is the basis of the Benchmark FTR, IP operators should ordinarily bear the costs of conversion, except where they are able to make reasonable requests for IP termination. This balances, on the one hand, the provision of efficient investment signals, and, on the other, ensuring that competition is not distorted and that consumers do not pay more for existing services as a result of the introduction of new technology."

⁹ See paras. 3.77 to 3.82 of the Consultation.

¹⁰ See para. 4.24 of the Consultation.

¹¹ See paragraph 5.21 of the Consultation.

¹² See paragraph 5.16 of the Consultation.

when call termination was modelled as the final increment – these were likely to be immaterial. As Ofcom has pointed out, this approach was recently supported by the Competition Commission in its 2012 MCT Determination. We agree with Ofcom's position that, as in mobile call termination, there is no clear link between traffic volumes and the cost of administration services and that administration costs should not be included within the pure LRIC call termination cost stack. We do not believe there is any valid basis on which to distinguish mobile and fixed networks on this point.

9. Proposed approach to cost recovery

In line with Three's CFI response, we support Ofcom's proposal in the new NCC model to adopt economic depreciation, rather than accounting depreciation. As noted previously, in our view, there is no good reason why MTRs and FTRs should adopt different approaches to cost recovery. Moreover, as Ofcom notes, this approach to economic depreciation was recently supported in the Competition Commission's 2012 MCT Determination.

Annex – Three's observations on Ofcom's proposed NCC Cost Model

Three has the following observations on the various modules of Ofcom's cost modelling design:

1. Network Cost Module

a. Exchange migration timing

The model currently assumes that exchanges in categories "b" through to "j" are migrated to NGN in order of size, with:

- The largest exchanges, "e" through to "j", migrated in 2005;
- "d" migrated in 2007;
- "c" migrated in 2012; and
- "b" migrated in 2014¹³.

The one exception to this pattern is "f", which instead of migrating in 2005 along with the rest of the group "e" through to "j", is assumed to migrate in 2010. The rationale for this out of sequence migration, if intentional, is unclear.

b. Output capex cost trends

The output capex cost trends in the "Output_Costs" sheet¹⁴, which feed into the Economic module, refer only to the trend in equipment unit capex and ignore the trend in total unit capex (including both equipment and implementation costs). Implementation costs can be significant relative to equipment costs for some assets, and the trend in implementation costs is not generally the same as that in equipment costs. The calculations in the Economic module as proposed therefore appear to be distorted by the fact that the assumed cost trends do not reflect all components of capex.

Three consider that the output cost trends should be corrected so that they reflect all capex components. This would then be consistent with Ofcom's MCT model, which implicitly includes implementation costs within an aggregated unit capex measure.

c. Output opex cost trends

We note that the output opex cost trends in the "Output_Costs" sheet¹⁵, which feed into the Economic module, refer only to the trend in "in-life" opex, and ignore the trend in total unit opex (including power and cooling costs as well as in-life costs). Power and cooling costs can be significant relative to in-life costs for some assets, and the trend in power and cooling costs is not generally the same as that in in-life costs. The calculations in the Economic module as proposed are therefore distorted by the fact that the assumed cost trends do not reflect all components of opex.

Three considers that the output cost trends should be corrected so that they reflect all opex components. This correction would then be consistent with Ofcom's MCT model,

¹³ Rows 12:20, Control, Network.Cost

¹⁴ Rows 415:614

¹⁵ Rows 617:816

which implicitly includes power and cooling costs within an aggregated unit opex measure.

d. Discounted total capex and opex

The calculations for discounted total network capex and opex in the "Calc_TotCapex" and "Calc_TotOpex" sheets¹⁶ are incorrect, as they discount the cashflows in year n by the cost of capital in year n, ignoring the possibility that the cost of capital might be different in preceding years (which it often is). However, this does not appear to affect modelled charges.

2. Economic module

a. Cost of capital

Three notes that the "Other inputs" sheet in this module assumes a real cost of capital for 2011/12 of 8.3%¹⁷. This is inconsistent with Figure 5 in the Consultation document, which shows a cost of capital of 6.5% for that year, in line with the rationale set out in the preceding paragraphs.

b. Element starting price references

Three notes that the cell references to element starting prices in the "Other inputs" sheet¹⁸ appear to be correct for opex, where they pick up total opex costs (in-life, power and cooling) from the "Calc_UnitOpex" sheet of the Network.Cost module. In the case of capex, however, the cell references pick up only implementation costs from the "Calc_UnitCapex" sheet of the Network.Cost module, and incorrectly appear to exclude equipment capex from the same sheet. In Three's view, these cell references need correcting so that they pick up total capex costs (implementation and equipment)¹⁹.

c. MEA cost trend references

The percentage cost trends in rows 11 and 15 of each Economic Depreciation ("ED") algorithm sheet (E1:E200) are ultimately sourced from the Input_CostTrends sheet of the Network.Cost module²⁰. We note that the trends in that source sheet are derived using the formula:

 $t_n = (c_n - c_{n-1}) / c_{n-1}$

where

t_n = cost trend in year n

 c_n = unit cost in year n

¹⁶ Rows 213:414 and rows 623:822 respectively

¹⁷ Cell M11.

¹⁸ Rows 431:630

¹⁹ Rows 413:612 of the "Calc_UnitCapex" sheet instead of rows 9:208

²⁰ Rows 287:486 and rows 760:959

This implies:

 $c_n = (1 + t_n) * c_{n-1}$

However, in rows 12 and 16 of the ED algorithm sheets, unit costs are calculated using the formula:

 $c_n = (1 + t_{n-1}) * c_{n-1}$

This inconsistency means that unit costs in the ED algorithm sheets are inconsistent with those in the Network.Cost module. For example, the Network.Cost module calculates a 2045/46 unit capex cost of £57.3m for network element 128, SVC_OSSBSS_Fixed²¹, but (once corrected for the element starting price reference issue above) the ED algorithm sheet E128 calculates a unit capex cost of £55.0m.

In Three's view, this inconsistency needs to be corrected by changing the unit cost formulae in rows 12 and 16 of the ED algorithm sheets so that they are consistent with those in the Network.Cost module.

d. Opex at final year MEA price references

Three understands that the formulae in rows 28 and 77 of each ED algorithm sheet are intended to calculate the capex/opex that would be incurred in every year if unit capex/opex costs were equal to their final year value.

The capex formulae at row 28 appear correct. However the opex formulae at row 77 appear inconsistent with the capex formulae and incorrect. Instead of applying the final year MEA / in year MEA ratio to the total opex identified at row 6, the ratio is applied to row 14, which is blank in most years. This appears to be a simple referencing error which needs correcting.

e. Treatment of retirement costs in ED algorithms

Three understands that the model currently treats the cost of retiring assets at the end of their useful lives as opex, and recovers these costs through the opex part of the ED algorithm. However, as the opex part of the ED algorithm is designed to recover the cost of annual ongoing expenditure, not one-off end of life expenditure, the inclusion of retirement costs creates some anomalies in the ED calculations. For example, the "opex at final year price" calculation referred to above will not in general be entirely accurate, because the opex at row 6 includes retirement costs in some years but not others, a variation not taken into account by the final year / in year MEA ratio. In certain circumstances this can lead to a failure of ED charges to match costs: for example, when run in LRIC+ mode, the current model does not recover opex correctly for network element 116, SVC_Call Server_Software licence.²² In Three's view, it may therefore be more appropriate to adopt an alternative approach to the recovery of retirement costs. One option to consider would be to remove retirement costs from opex, and instead uplift an asset's implementation capex cost by a suitably discounted allowance for that asset's eventual retirement.

²¹ Row 540, Calc_UnitCapex, Network.Cost

²² Row 118, E116, Economic