A note to Ofcom:
BT positions on Interconnect migration

18 February 2021

Non - Confidential version

BT

Introduction

1.1. Following our response to Ofcom's Wholesale Voice market review consultation (the consultation), Ofcom raised a number of further questions with us. It was brought to our attention that some respondents requested more extensive migration periods than those laid out in points 7.77 of the consultation. In particular, they asked for:

    A. A longer period (three months instead of one) of simultaneous WCT availability on TDM and IP (dual billing)

    B. Ofcom reported that the vast majority of CPs indicated they would happily share their plans once BT firmed up and communicated its own. Ofcom therefore raised whether it was necessary for them to require larger CPs to share their migration plans to enable smooth industry migration

    C. A longer notice period for the proposed migration of a specific numbering range/s (six months instead of three)

1.2. In light of the above, we believe that it may be useful to clarify BT's position / response. We discussed some of these during our call on the 22nd January:

An extension of the simultaneous WCT availability on TDM and IP from one to three months would delay the start of the migration and cause BT significant and unnecessary costs with no clear benefit to stakeholders. BT strongly urges Ofcom to retain the current one month period.

1.1. During this one-month period CPs will only need to ensure that they have the adequate IP capacity in place - there is no need of a physical change of interconnection. BT believes that one month is a reasonable period of time within which to carry out the logical (not physical) switch, especially given that CPs will have had twelve months' notice to plan for it.

1.2. It is unclear to BT why CPs need more than one month and what evidence have they provided to justify such a request. Further, we note that we have not received any requests from CPs to extend the one-month period which BT first proposed to the industry in May 2020.

1.3. Extending to a period longer than a month will impose significant and unnecessary costs on BT:

    • Although we have yet to start the low-level design analysis, we believe we can adapt the system to cater for one-month dual billing without any major software developments by exploiting a feature of the system based on the fact that EBC matrix is updated monthly.[1]

    • However, extending the dual billing period to three months would be a significant challenge for BT. It would require manipulating the software and writing new source code. In order to do so BT would have to hire a specialist to modify a system which would be decommissioned immediately after the migration.

1.4. BT effectively lacks the expertise to carry out this work. The EBC system has not been modified since 2012 and effectively there are no longer software designers within BT who have an intimate knowledge of its functioning. Contracting a 'pro C' programmer will be challenging given this is an obsolete 90' software language for which it is difficult to find experts.

1.5. BT will need an additional testing period for the new source code to avoid billing errors, this will require a beta testing period of six to nine months.

We believe Ofcom should impose an obligation on larger CPs to share their migration plans. To address CPs views, that they want some visibility of BT's migration plan first, we propose adapting the current proposal in paragraph 7.79 of the consultation to include an obligation on CPs to share their migration plans two months after BT's initial publication.

1.6. Currently other CPs control about 60% share of voice lines. Without knowing their plans, BT is obliged to plan its interconnect migration under significant and unnecessary uncertainty;

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[1] This will not give CPs any technical or commercial benefits other than to effectively give them even more notice before the hard stop where the IP is the FTR POC for the number range.

1.7. Correctly predicting the industry migration timing and volumes is important for BT as it helps ensure that we have installed sufficient IP/TDM conversion capacity to enable traffic to flow both ways between the TDM and the IP platform, without calls being dropped. This requires investment in network gateway kits which will become stranded assets once migration is completed. It is therefore important that BT is able to efficiently plan this investment.

1.8. Conversely, CPs have an individual incentive to retain flexibility by not disclosing their own migration plans whilst aiming to optimise their plans with respect to others.

1.9. We understand that most CPs have reported to Ofcom that they are inclined to share their plans once BT has shared its own. However, the evidence suggests otherwise:

- BT has engaged with CPs in both industry discussions as well as in one-to-ones, despite BT's numerous requests CP have not shared with BT their plans to migrate, nor have they promised to share them after BT's publication.

- This attitude has persisted even after BT has shared its migration plan in May 2020 which gave the entire industry an approximate time range reference to CPs.

1.10. BT is not aware of the reasons behind each CPs lack of communication. We are nonetheless conscious of the cumulative impact of this information asymmetry. Only encouraging CPs "*to work together and provide each other with their own timetable*"[2] will be insufficient to drive the right behaviours. Without any mechanisms to require co-ordination the entire industry will end up with in a sub-optimal outcome in the same way as in the Prisoner's Dilemma[3] . We therefore encourage Ofcom to take steps to resolve this co-ordination issue and ensure other CPs share their plans and timetables.

1.11. We understand from Ofcom that CPs feel unable to provide an indication of their plans as they believe it will be influenced by BT's migration plans. If Ofcom is not inclined to introduce symmetric transparency obligations on CPs, we would propose imposing an obligation where first BT shares its migration plans, and two months later other CPs share their migration plans.

1.12. Based on the current timelines outlined in the paragraph 7.79 of the consultation BT is to share its own migration plan by 1st April 2022 and publish the revised version by 1st June 2022 following consultation with industry.

1.13. BT suggest modifying the content and the proposed calendar in paragraph 7.79 to include an obligation for major CPs to share their plans as well, for example:

- 1st March 2022- BT share its migration plan and timeline for consultation

- 1st May 2022 – CPs submit response for consultation and their own migration plans and timeline

- 1st July 2022 – BT published its revised plan considering CPs input, migration plans and timelines

1.14. BT is currently exploring the right forum for ensuring that migration can be managed smoothly and optimally across industry especially with the larger CPs.[4] Ideally this would be an open forum with a regular calendar and one where Ofcom participates as an observer. We nonetheless welcome any proposal for such forum from Ofcom or the rest of the industry.

Extending the notice period from three to six months does not improve the overall migration for the industry and negatively impacts BT's ability to act upon short notice changes. BT urges Ofcom to maintain the current proposed three months period.

1.15. On its own initiative, in its May 2020 migration plan, BT proposed the rest of the industry to have a three months' notice period, after which the migration date of numbering ranges could no longer be postponed.

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[2] Ofcom consultation paragraph 7.82

[3] A situation where individual decision makers (in this case CPs) always have an incentive to choose in a way that creates a less than optimal outcome for the group. A regulation-driven co-ordination of the various decision makers can instead lead to a superior outcome for the same group.

[4] BT would expect at least the [CONFIDENTIAL] Is representing the total of [CONFIDENTIAL]% of the voice market to take part to the forum

1.16.	The rationale for this proposal was, and always has been, for BT to be able to adapt between forecasted and the actual migration trends, so to have the ability to adjust to significant and unexpected CPs changes of plans.

1.17.	As indicated in the previous sections, most of the activities related to migrating BT numbering blocks are upon BT. Other CPs network work should be limited in ensuring that they have an appropriate IP capacity. A significant number of CPs already have IP connectivity with BT.

1.18.	It is therefore unclear what the benefits will be to extend the notice period to six months. CPs have never expressed such request in talks to BT and do not clearly articulate the reasons or provide any evidence how these benefits would materialise in their responses to the consultation. In any case other CPs already have twelve months' notice to plan for any operation.

Appendix A.1   Extract of relevant BT answers to Ofcom WVMR consultation

For convenience we report here our answers to Ofcom WVMR which are relevant to the interconnect migration.

The key messages in our response were as follows:

- BT welcomes Ofcom's FTR POC migration proposed measures (7.77- 7.79 of the consultation)
- BT believes other CPs, and not just BT, should face the same transparency rules and migration backstop deadlines.
- 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.

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.[5]

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[6] 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 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

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

[6] We define "larger" as being above a size threshold of 350 TDM ranges plus prefixes, as of 1 April 2021. This would capture [CONFIDENTIAL] , without placing any requirements on the smallest CPs.

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%[7] 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 .

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 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

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[7] 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

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 (…).

BT