

Ethernet Quality of Service

Openreach comments on the Upper Percentile QoS Standard and other QoS matters during the Fixed Telecoms Market Review

NON-CONFIDENTIAL VERSION

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Upper Percentile QoS Standard

Summary

Openreach considers that the current Quality of Service ("QoS") Standard¹ for Upper Percentile Time to Provide ("Upper Percentile") for Ethernet services² does not work as a QoS Standard and should be replaced in the Fixed Telecoms Market Review ("FTMR") with an appropriate set of Key Performance Indicators ("KPIs"), supported by regular senior level reviews between Openreach and Ofcom.

Making this change would introduce a proportionate regulatory remedy without undermining the incentives on Openreach to deliver good service for Ethernet circuits that have the most complex delivery requirements.

The long duration of the period covered by the FTMR (5 years) makes it particularly important that the Ofcom remedies imposed are proportionate and sustainable across the period covered by the market review. Openreach sets out its current thinking on this topic in this short paper, which it would like Ofcom to acknowledge in the forthcoming FTMR consultation.

Background

Ofcom has commenced consultation on the FTMR, which will set the regulatory framework across a wide range of markets for a 5-year period between 2021 and 2026³.

In relation to QoS for Ethernet services, Ofcom's early thinking, as described in the March 2019 Consultation⁴, is to largely maintain the arrangements that will exist in compliance year 2020/21 across the period covered by the FTMR. This would mean, based on the existing Business Connectivity Market Review ("BCMR"), that those FTMR remedies would include an Upper Percentile QoS Standard that would be measured annually, with a target of no more than 3% of overall circuits being delivered in more than 133 working days.

Openreach performance

Openreach's performance in relation to Ethernet QoS has markedly improved since 2015, and this has been recognised by various stakeholders, including Ofcom and Communication Providers ("CPs")⁵. This improvement has included how Openreach manages the installation of circuits with the most complex delivery requirements that make up the "tail".

¹ QoS Standards were previously known as Minimum Service Levels or "MSLs."

² Covering Ethernet Access Direct, Ethernet Backhaul Direct and Cablelink.

³ The FTMR is due to run from April 2021 to March 2026 inclusive.

⁴ "Promoting competition and investment in fibre networks. Initial proposals – Approach to remedies." Consultation 29 March 2019. https://www.ofcom.org.uk/data/assets/pdf_file/0018/142533/consultation-promoting-competition-investment-approach-remedies.pdf

⁵ For example, CP satisfaction has improved markedly over time, judging by the Ethernet customer satisfaction programme that Openreach has been running in recent years. See also paragraph 4.7 in Ofcom's remedies consultation of 29 March 2019.

As shown in Figures 1 and 2 below, Openreach has significantly reduced the size of the tail workload over time since its peak during 2015/16 and has also reduced the average age of the provision workload. Openreach has also made significant improvements to performance that is within its own control against factors that impact on tail circuits, for example delays associated with traffic management and wayleaves. Figure 3 below also shows that when tail circuits are completed, Openreach is completing them on average more quickly now than was previously the case. All these KPIs are indicative of greatly improved performance for circuits that are the most difficult to deliver.

Figure 1 – Tail workload⁶

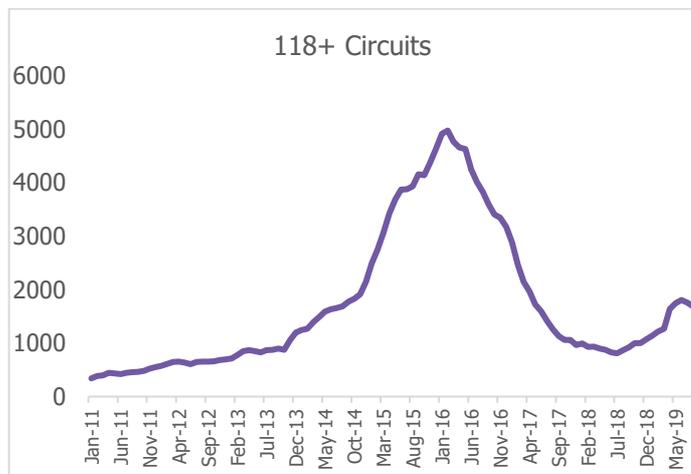
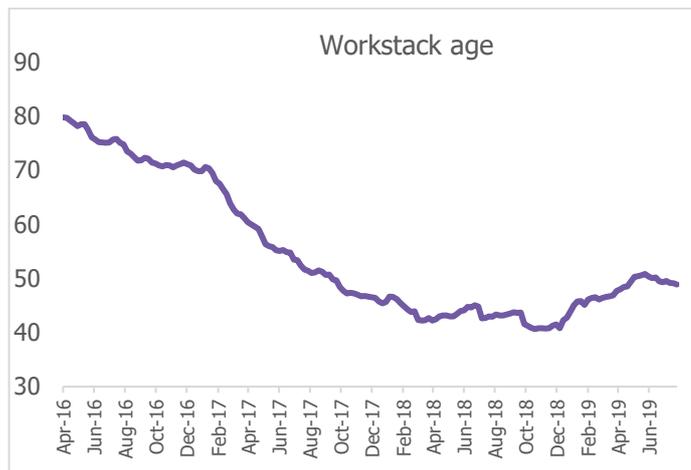
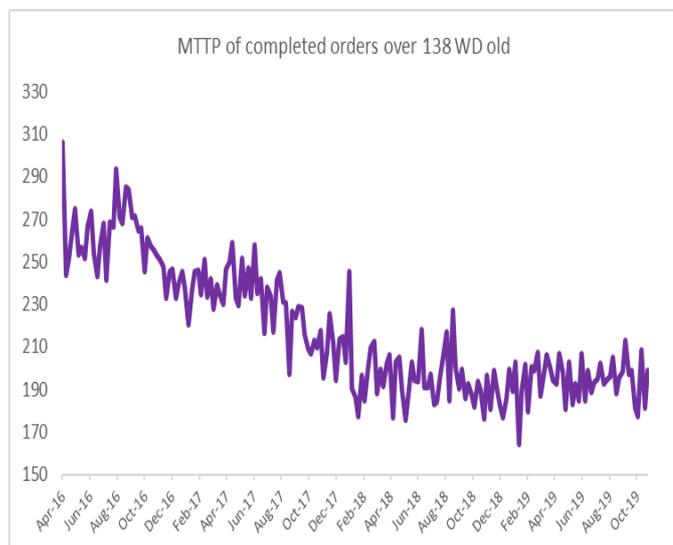


Figure 2 – Average provision workload age



⁶ Figure 1 looks at orders which are over 118 days in age (the BCMR Temporary Conditions Upper Percentile MSL), rather than the volume over 138 days in age (the BCMR 2019 Upper Percentile QoS standard) as data at this measurement point was readily available.

Figure 3 – Mean time to provide of completed circuits over 138 working days old

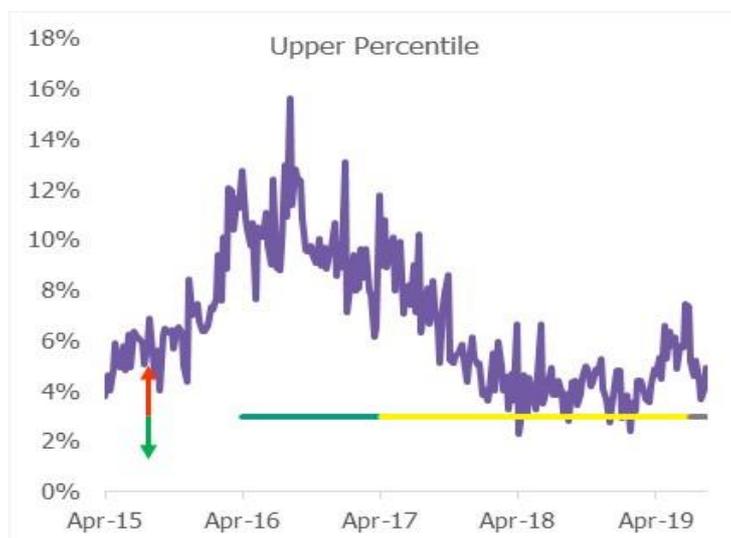


Despite these improvements, Openreach has never successfully met the Upper Percentile QoS Standard (previously known as MSL) since it was first introduced in 2016, even during periods of time when Openreach performance was operating at optimal levels (for example, during 2017/18) when stakeholders were very satisfied with the level of performance that they were receiving⁷.

As shown in Figure 4 below, which shows Openreach performance against the prevailing Upper Percentile QoS Standards, which were first imposed by Ofcom on Ethernet services in 2016, Openreach has typically delivered performance levels above the QoS Standard, even during times when performance – including performance against the most complex circuits – has been at very good levels. Openreach considers that this is indicative of a measure that is not proportionate, in that it cannot be reliably met even when performance is strong.

⁷ This is judging by, for example, CP feedback at the time – whether via bilateral or industry sessions. Openreach also notes that the most recent customer satisfaction performance, for example as expressed in Openreach's Net Promoter Score, has continued to be positive.

Figure 4 – Upper Percentile QoS Standard performance⁸



Problems with the Upper Percentile QoS Standard

The principal problems with the Upper Percentile QoS Standard are discussed below.

(i) Volatility

The Upper Percentile QoS Standard is too sensitive to environmental impacts that are themselves volatile and hard to predict. This makes specification of a sensible QoS Standard target level problematic in the first place and means that luck / chance plays too big a part in whether the QoS Standard can be met. Openreach considers that for a QoS Standard to be proportionate, there needs to be more than a fair chance for Openreach to meet the target imposed through its own agency. That test is not met by the Upper Percentile QoS Standard in its current form.

The volumes of Ethernet circuits that are subject to the provision QoS Standards are, compared to the volumes covered by the Wholesale Local Access (WLA) QoS regime for example, relatively tiny at around 45,000 per annum⁹. This makes them more subject to distortion from prevailing market forces such as, for example, the profile and level of demand coming through and whether it has been forecast or not.

Because the Upper Percentile QoS Standard deals with yet smaller volumes, this problem of volatility is then exacerbated. For example, in the current 9-month BCMR 2019/20 compliance period, given the current forecast for

⁸ The different coloured horizontal lines on Figure 4 show the different Upper Percentile standards across different time periods. Green = 159 days (BCMR 2016, Year 1); Yellow = 118 days (Temporary Conditions); Grey = 138 days (BCMR 2019, Year 1).

⁹ Between 1 April 2018 and 31 March 2019, Openreach delivered [Confidential] circuits regulated under the BCMR Temporary Conditions. This is a lower number than the c.52.2k Ethernet completions quoted to Industry due to different products, order types, and deregulated geographies.

Ethernet completions, we estimate that only around 1,100¹⁰ circuits of over 138 working days age can be provisioned before the QoS Standard is breached.

This leaves very little room for manoeuvre and can mean that the QoS Standard becomes impossible to hit in circumstances where prevailing market conditions aren't all optimal (which they frequently aren't). For example, in September 2018, Openreach was hit with an un-forecast spike of orders of 700 additional orders in one week, and this contributed to us entering the 2019/20 compliance period for Upper Percentile in a suboptimal position.

In addition, the Upper Percentile QoS Standard is extremely sensitive to the complexity of orders received in a geography, especially where incremental network build is required. Where a large number of orders requiring network build are placed within a short time period, it is likely that a significant proportion of those orders will impact the QoS Standard. For example, where mobile operators choose to bulk order circuits to new mobile masts, this can drive significant volatility within the QoS standard.

The degree of sensitivity to market conditions, whether they are controlled by Openreach or not, makes the Upper Percentile QoS Standard an unreliable (and in consequence unfair) test of Openreach performance and means that luck / chance play a big role in determining whether the measure can be met. For a measure that is intended to be a gauge of Openreach performance, this cannot be right.

Looking forward into the period covered by the FTMR, it is difficult (if not impossible) to forecast how market changes will play out, and the degree to which they will affect Openreach's service performance, or how they will impact the propensity for circuits to become tails¹¹. [Confidential]

In this context, it is likely that a measure that is so sensitive to environmental factors will continue to be impacted by market volatility, and in consequence Openreach's ability to meet the target imposed will continue to be overly influenced by chance in addition to its own underlying performance.

(ii) Target level

Given the conditions that Openreach has in fact been facing in the market, where change and volatility have been the norm, it has been apparent that the target level applied to the Upper Percentile QoS Standard has been more akin to (or beyond) "stretch" levels of performance than backstop levels of good performance (which is what the QoS Standard should be set at). Even during periods where Openreach has, in its view, been operating at optimal levels of performance, such as during 2017/18, the QoS Standard for Upper Percentile has never been met (see Figure 3, above). In Openreach's view, this has been because the QoS Standard was too tough in the first place, particularly given its sensitivity to environmental factors as discussed above¹².

¹⁰ This is a relatively small number in the context of overall completion volumes.

¹¹ This is particularly challenging given the "ask" is to forecast outcomes up to 6 years into the future.

¹² Openreach notes that the Upper Percentile QoS Standard was initially based on repeating performance delivered in 2011, which, as Openreach has previously pointed out, was not a typical year and so not a sound basis for setting performance targets.

The sensitivity of the Upper Percentile measure (as discussed above) – which there is no obvious way to address – also makes picking the right target level for the QoS Standard extremely difficult, since it implicitly requires the ability to forecast future market conditions, and how they will impact Openreach’s ability to hit the measure.

(iii) Perverse incentives

As a measure that is based on closed orders (along with the other QoS Standards), one problem with the Upper Percentile QoS Standard is that, once the measure becomes at risk of being breached or has already been breached, a perverse incentive arises. That is, in order to either hit the measure, or to minimise the level of the breach, the best way to do that would be to not complete any more circuits that are in the “tail” (e.g. over 138 working days old in 2019/20).

This is a problem with the design of the measure since, from an end customer and market perspective, it seems obvious that the right behaviour for Openreach to adopt in such circumstances would be to continue to complete tail circuits to the best of its ability¹³.

Proposals

The basic idea of the Upper Percentile QoS Standard is to ensure that Openreach remains focussed on delivering consistently good performance for circuits with the most complex delivery requirements, and to minimise the number of end customers that are subject to a tail order.

Openreach supports these intentions, and indeed in recent years Openreach has significantly improved its performance in relation to delivery of the most complex circuits. However, as noted above, Openreach considers that the current Upper Percentile QoS Standard doesn’t work because of its sensitivity to market forces (which tend to be volatile in nature and are frequently outside of Openreach’s ability to control) and this needs to be addressed.

Openreach suggests that best approach would be to remove the current QoS Standard and instead rely on a set of “lead” and “lag” KPIs to monitor performance against aged / tail orders on a regular basis¹⁴. These measures are already in place in the form of the following KPIs which are reported monthly to Ofcom: Time to Provide Upper Percentile limit (lag measure), Monitoring the tail (average) – closed orders (lag measure), Monitoring the tail (%) – open orders last day of month (lead measure), Monitoring the tail (average) – open orders last day of month (lead measure), and Monitoring the 97th percentile time to provide of the tail extremities (lag measure).

In addition, Openreach supports a continuation of the more detailed bi-annual tails report which Ofcom introduced as a reporting obligation in the 2019 BCMR. To further support this arrangement, Openreach would propose to complement the bi-annual tail report with a meeting, with operational MD-level representation from Openreach, to ensure ongoing focus, and to address any concerns arising.

¹³ In fact, Openreach has done precisely this, even in circumstances where this has undermined its ability to comply with the Upper Percentile QoS Standard.

¹⁴ A lead measure gives an indication of the likely outcome for lag measures based on the status of the open workstack. A lag measure reflects the performance of completed orders.

Openreach considers that continuation of a detailed set of reporting obligations would provide sufficient incentives to maintain good performance for tail circuits, especially given that the nature of the Mean Time to Provide ("MTTP") QoS Standard, which is set to remain in place during the FTMR, independently places significant incentives on Openreach to minimise the number of circuits that take the longest time to deliver, and to complete circuits as quickly as possible¹⁵.

Openreach also notes that, in any event, it will continue to discuss service performance for Ethernet, including tail circuits, at industry and CP bilateral meetings on a regular basis, and this will also provide further ongoing stakeholder oversight into Openreach's performance.

Finally, should Ofcom become concerned that Openreach tails performance was not at required levels, it would retain the ability to intervene and impose other remedies should that be needed.

Alternative approaches to changing rather than removing the Upper Percentile QoS Standard could be to relax the target level imposed and to extend the period of compliance assessment. Both steps would in theory decrease the vulnerability of the measure to volatility in the market. However, as noted above, the sensitivity of the measure itself makes picking the right QoS Standard target in the first place a difficult exercise, so it is not obvious what the basis for selecting a proportionate target level would be. Also, it is not clear that extending the compliance period would fix the underlying problem with the measure, certainly not in isolation from other amendments.

Should Ofcom want to explore these ideas further, further assessment would be required. Openreach's view is that removal of the Upper Percentile QoS Standard is the best option available, given the inherent issues with the measure itself.

Conclusion

Openreach supports the need to deliver good service for circuits that are the hardest to deliver – and indeed in general its performance in this regard has significantly improved in recent years. However, the operational experience gathered since 2016 suggests that the current Upper Percentile QoS Standard doesn't work because it is too sensitive to market forces that are likely to remain volatile during the period covered by the FTMR.

It is right that Ofcom remove this QoS Standard and move to a regime of detailed monitoring supplemented by regular senior level engagement. This will create a proportionate set of remedies (where the current arrangement is not proportionate or sustainable across the period covered by the FTMR), whilst maintaining strong incentives on Openreach. This will also help to avoid a potentially annual cycle of compliance assessment and investigation involving detailed (avoidable) work for Openreach and Ofcom.

Openreach is highlighting this issue now so that Ofcom can take due account of this issue in the ongoing FTMR consultation. Openreach will provide further details on the matters covered here as the consultation proceeds.

¹⁵ This is because tail circuits can have a disproportionate negative impact on overall MTTP performance.

Other general comments in relation to QoS proposals during the FTMR

[Confidential]

(i) [Confidential]

[Confidential]

(ii) [Confidential]

[Confidential]

(iii) [Confidential]

[Confidential]

(iv) [Confidential]

[Confidential]