Cross-submission on Draft Determination in Section 30R review of Chorus' Unbundled Bitstream Access Service

15 December 2016

8 out of 10 homes and businesses around the country can now get VDSL

OUR SUBMISSION

Introduction and summary

1. This is Chorus' cross-submission on the Commerce Commission's *Section 30R review of Chorus' Unbundled Bitstream Access Service Draft Determination*, released on 9 November 2016.

2. There is a large degree of alignment amongst submissions. The industry generally agrees that:

    ▪ We are delivering a fit for purpose regulated service, one that keeps pace with demand for increasing throughput and supports retail competition for broadband services;

    ▪ The focus on network utilisation will ensure we continue to manage a congestion free network to meet increasing customer demand for high quality broadband;

    ▪ LAPs other than Ethernet fibre-based LAPs should be excluded from the utilisation standard and if we are to consider whether further requirements around the ATM network are appropriate, it is sensible to do so after the next round of RBI investment; and

    ▪ The procedures in clause 9 of the UBA General Terms are appropriate to address the operational concerns our customers have raised in this review.

3. There are a few minor areas of continued disagreement amongst submitters and we have focused our cross-submission on these. The industry appears to have different views on whether:

    ▪ 95% is the appropriate setting for the utilisation standard;

    ▪ Utilisation should be measured over 15 minute periods;

    ▪ Utilisation reporting should include packet loss; and

    ▪ The FPP TSLRIC model should be reopened to reassess the 10GigE handover price.

4. A number of comments raised in submissions seem to be a result of the separation of price and quality terms by the Part 2 processes. This reinforces to us the importance of the Government's current review of the regulatory settings, which has proposed bringing those issues together in a new form of regulation for our industry.

5. Where we have previously provided views on issues, we haven't repeated them in full here but instead refer back to our earlier submissions.

The 95% utilisation standard

6. We agree with the Commission that 95% is the right setting for the utilisation standard and that anything lower than this may lead to inefficient investment. We also note that 95% is consistent with the settings for the fibre network under our UFB arrangements.

7. Some submitters have asked for a lower standard. They are concerned we will target 95% utilisation and that customers may experience a degraded service. This isn't our intention, and we are strongly incentivised not to do so. With the variable nature of throughput growth and the lumpy nature of capacity upgrades, we would be putting ourselves at risk of regularly breaching the STD.

8. As we explained in our earlier submission, we already use 95% as a maximum threshold and plan our investment so that this threshold is not reached – it is not a trigger for operational activities. Appendix One sets this out in more detail. Absent exceptional circumstances, consumers should never experience our network at this level.[1]

9. If the 95% utilisation standard was lowered, we would need to lower our planning and investment thresholds by the same margin. For example, to achieve the same buffer zones for an 85% utilisation standard, we would need to complete upgrades at utilisation levels of 60-80%. Which means we'd need to start planning for proactive upgrades at around 50%.

10. This could lead to inefficient investment. Whether investment is necessary depends not only on utilisation, but also the anticipated demand growth on links. A lower threshold may see capacity unnecessarily augmented even where we see a diminishing demand increase, for example due to a shift to fibre.

11. Henderson is a good example of where this inefficiency could bite. One of the Henderson Ethernet LAPs is nearing 50% utilisation. The region is also experiencing high migration to fibre and high growth in fibre traffic. As customers continue to migrate, we expect to see lower relative throughput growth for these Ethernet LAPs. Under our current capacity planning rules, these Ethernet LAPs would potentially not need an upgrade for several years. But, if we were operating to a lower maximum threshold of 85%, we would need to upgrade those LAPs in the very near future. Given the impact of fibre migration on throughput, this would provide no change in service to customers and be years before it was needed (if it is needed at all).

12. We also do not agree with those submissions that suggest consumers will experience a degraded service at utilisation between 90-95%. Packet loss is a useful proxy for service degradation at the consumer level and we do not expect packet loss at utilisation levels below 95% utilisation to noticeably affect general internet use.

---

[1] Chorus Submission on Section 30R Draft Determination, 29 November 2016, at [14] – [17].

13. As shown in Figure 1 below, at utilisation between 90-95% maximum packet loss is around 0.2%. To put this into context, a recent study[2] shows that where Netflix operates under a 3% packet loss, throughput decreases from 4.3 Mbps to around 3 Mbps – a reduction which would be difficult to notice for most internet users.

Figure 1: Packet Loss at different Utilisation levels
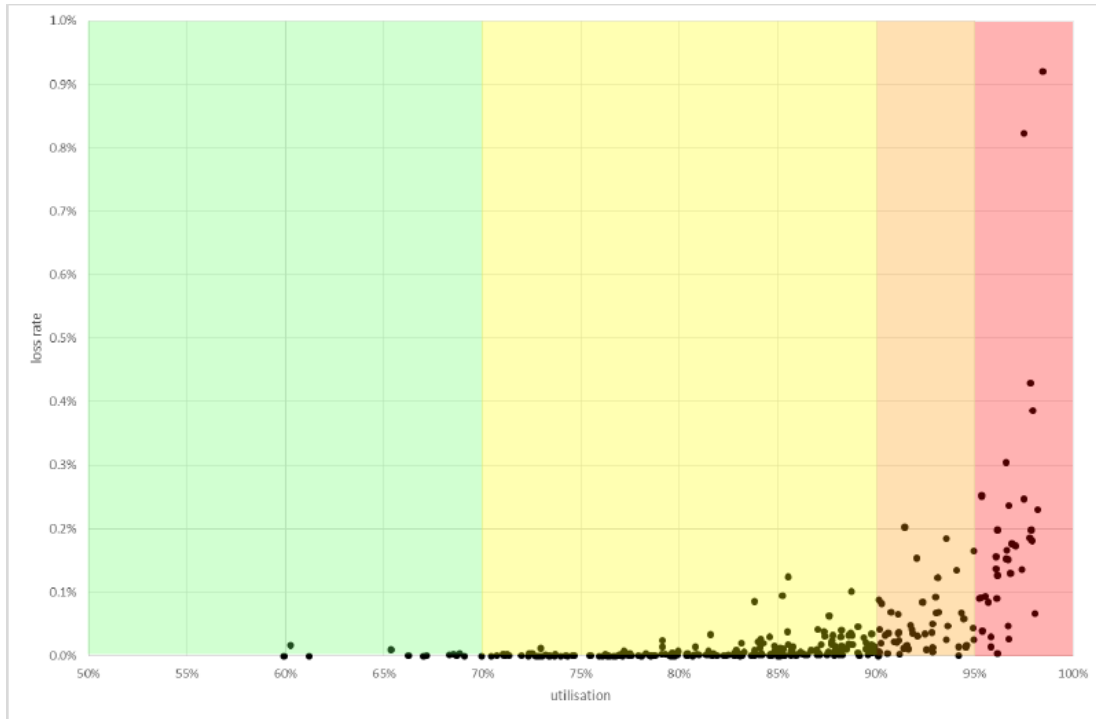
Utilisation measured over 15 minutes

14. We agree with the Commission that utilisation should be measured over 15 minute periods. This is what we and our customers do in practice, and it's an effective metric for identifying congestion.

15. Some submitters support five minute measurement of throughput but we think the cost[3] of implementation will outweigh the benefit. While five minute reporting may improve precision, the reporting will be no more accurate in identifying congestion. It will therefore make no difference to our investment planning or consumer experience.

---

[2] Characterizing Netflix Bandwidth Consumption, January 2013 (available at https://pdfs.semanticscholar.org/de53/260916c23e03f99e124b462aace3e67c1806.pdf).

[3] This would involve collecting, analysing, and reporting on three times the data re-design of data management systems, Chorus' management network and EMS to business intelligence load; and data storage.

Utilisation reporting

Reporting threshold

16. We agree with the Commission that we should provide increased transparency on links where utilisation is above 85%.

17. We acknowledge our customers' desire for transparency. To give our customers additional comfort that plans are in place to complete upgrades, we are willing to support a lower reporting threshold of 80%.

18. However, we think a threshold lower than 80% would impose additional reporting costs for no additional benefit, as it will make no difference to our investment planning or consumer experience.

Content of reporting

19. We are happy to provide most of the reporting information submissions have asked for, including:

- The links on which we have approved plans to augment capacity; and

- The estimated completion date of those plans.

20. But, we think the costs of reporting on packet loss outweigh the benefits. While packet loss is a useful proxy for service degradation, its usefulness is dependent on the type of traffic and the type of protocols in place to manage packet loss. And, given that 99.4% of our Ethernet-based LAPs have utilisation below 50% and none of the almost 8000 LAPs exceed 80%, packet loss will be negligible and the reporting would be meaningless.

Exclusion of the ATM network from the utilisation standard

21. We agree with the Commission and submitters that LAPs other than Ethernet fibre-based LAPs should be excluded from the utilisation standard. As most submitters acknowledge, if we are to consider whether further requirements around the ATM network are appropriate, it is sensible to do so after the next round of RBI investment.

22. We think that the framework for any future review should also be left until we know how RBI2 plays out – we don't yet know the context of that review. However, our objections to mandating upgrades of non-Ethernet fibre-based LAPs go beyond the relationship between the Commission's process and RBI2, as set out in our earlier submissions.[4]

---

[4] Chorus Cross-submission on Process and Issues paper, 1 July 2016, at [43] - [45].

10 GigE handovers

23.   We support the Commission's draft determination to include 10 GigE handovers in the STD and to price those handovers at the TSLRIC price modelled during the FPP.

24.   A number of submitters believe the FPP price is too high and that the TSLRIC model should be reassessed against UFB pricing. We disagree and we've previously explained why we don't think that's appropriate.[5] The TSLRIC model stands as a whole, and is not susceptible to reconsideration of its constituent parts. If the FPP model is reopened to reflect one change, it will be necessary to reopen the whole model to ensure consistency.

25.   The model was also the subject of extensive consultation and submissions as part of the FPP process, including specific comments by Spark and Vodafone's expert cost-modeller on the price of 10 GigE handovers.[6]

BUBA (L2TP)

26.   Spark and 2Degrees have restated their concern over charges associated with BUBA (L2TP) instances of UBA (which they refer to as ATM UBA).

27.   Decommissioning the L2TP network presents a number of challenges including around the availability of legacy handovers. We're confident our approach to transitioning away from this legacy network is both reasonable and consistent with the STD, and we're open to discussing this with them.

28.   In our earlier submissions we proposed amendments to the STD to facilitate replacement of legacy technology.[7] We continue to believe those changes would be helpful.

---

[5] Chorus Cross-submission on Process and Issues paper, 1 July 2016, at [72].

[6] WIK Consult "Submission on the Further Draft Pricing Review Determination for Chorus' UBA Service" (August 2015) at [127].

[7] Chorus Cross-submission on Process and Issues paper, 1 July 2016, Appendix A (suggested changes to s 17 Operations Manual).

APPENDIX ONE

1. The utilisation standard is a bright-line maximum limit, not a trigger for operational activities. As illustrated in Figure 2 below, we already use 95% as a maximum threshold and plan our investment so that this threshold is not reached – absent exceptional circumstances, consumers should never experience the network at this level.

2. To ensure we do not breach this 95% threshold we forecast link utilisation quarterly, based on a revolving two-year view of predicted traffic, and generally start planning for proactive upgrades when utilisation reaches around 60% (the Target Point). We also monitor link utilisation on a weekly basis, capturing unforecasted variations in bandwidth growth. If utilisation reaches around 70% (the Trigger Point), we investigate the risk our network will enter the yellow zone prior to the planned investment cycle and adjust our investment plan if needed. This is not necessarily a trigger to immediately invest – consumer experience is still good in the yellow zone – our investment decision is based on the likely bandwidth growth for that link and the likelihood it could move above 95% utilisation.

Figure 2: LAP utilisation and investment planning