# TELSTRA CORPORATION LIMITED

## Telstra Submission - Review of the Measuring Broadband Australia program

### Confidential

**November 2020**

[CIC begins/emds] = information not to be released without a confidentiality undertaking

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# EXECUTIVE SUMMARY

The MBA program has been helpful in improving some aspects of NBN performance. For example, the program highlighted the impact of protocol overheads which resulted in nbn giving consumers an additional 15% of bandwidth so that 100% of their plan speed could be delivered. However, as explained below, we believe the program no longer serves a useful purpose and should be stopped.

The MBA comparisons of RSP speeds are unhelpful for consumers as most of them include underperforming NBN lines which mask any variations between RSPs networks. The differences between RSPs only amount to a few percent of the maximum plan speeds and this misleads customers into thinking they'll receive a noticeably faster speed with a particular provider, when in reality there is unlikely to be any discernible difference.

We are also moving into the next era of technology where access speed is becoming less relevant as a measure of customer experience. Service defined experiences and the resilience of the devices being used are expected to be more relevant in the future. For example, RSPs may prioritise specific applications within the home (fine tuning of experience to specific devices) which could potentially have a negative impact on the measured download speed at the entrance point into a home while still giving the customer having a better overall experience within the home.

There are more cost-effective and market-based alternatives available for comparing RSP speeds, for example Netflix and Ookla indexes. There are also other market comparators such as iSelect, WhistleOut, Finder, Canstar and technical news sites such as Lifehacker and Techradar that consumers can easily access and rely on to inform themselves about which RSP best meets their needs.

The MBA program does not represent value for money as it is a duplication of costs. RSPs already invest in the deployment of speed measurement robots to support their speed claims in accordance with the ACCC Broadband Speed Claims Guidance. The ACCC has effectively duplicated this investment through its deployment of robots in the MBA program. RSPs are ultimately paying for both sets of testing. c-i-c [redacted] c-i-c

The ACCC believes that the MBA program has been effective in driving competitive outcomes. Telstra's view is that broader industry changes, such as nbn changes to CVC pricing, the ACCC's Broadband Speed Claims – Industry Guidance, and the ACMA Telecommunications (NBN Consumer Information) Industry Standard 2018 have had a greater impact.

For these reasons, we see no value in continuing the MBA program. If the Government and ACCC are inclined to continue the program, then the program must be substantially improved to address the various deficiencies which potentially mislead consumers and unfairly impact RSPs.

If Government wishes to have ongoing monitoring of NBN performance, then it should commission a program to target this and have it funded by nbn or Government.

# 01 Introduction

The consultation paper seeks stakeholder views on the effectiveness of the ACCC's MBA program in 23 questions. Sections 2 through to 5 set out our responses to each of the questions.

This section sets out our general views on some specific issues that we wish to highlight.

Telstra does not support the continuation or the expansion of the MBA program for the following reasons:

- We have significant concerns with how the program has measured and reported comparisons of RSP performances. It is our view these RSP comparisons have not been useful for consumers, and have unfairly treated RSPs.
- There are more cost-effective and market-based alternatives available for comparing RSP speeds, which consumers can easily access and rely on to inform themselves about which RSP best meets their needs.
- We have little confidence in the current reporting due to lack of transparency.
- The program does not represent value for money and duplicates required RSP investment in the deployment of speed measurement robots to support their speed claims in accordance with the ACCC Broadband Speed Claims Guidance.
- The proposed expansion to include Fixed Wireless Access (FWA) will likely face many of the existing issues we have seen with the current program's approach for measuring and reporting on Fixed Line Access. Any RSP comparisons would be heavily influenced by which customers volunteer and not actual RSP performance.

**Retail Service Provider Comparisons are not helpful**

The program's headline comparisons of RSP performance are not useful for consumers as the reported performance includes underperforming NBN lines which mask any potential variations between RSP networks. The differences in NBN access technology, NBN network design or geographic location of a service are greater drivers of results than any differences between the RSP networks. The MBA program does not effectively control for these biases in the sample population and Telstra is concerned the conclusions are potentially misleading. Even if the biases are addressed, the reported differences between RSPs only amount to a few percent of the maximum plan speeds so they are too subtle to be detected by consumers.

The focus on the headline download speed charts with underperforming lines included also creates a perverse incentive for RSPs to not provide higher speed services to FTTN customers on long copper lines, even if they are provided at the same price (i.e. for customers where the Maximum Attainable Speed is less than the plan speed). In such situations, maintaining or downgrading customers to lower tiers takes away useful downstream bandwidth for customers and also ignores factors other than download speeds that could have benefitted these customers. For example, the COVID impacts resulted in demand for upstream traffic increasing dramatically. Customers on 25/5 plans would have had upstream bandwidth constrained considerably more than customers on 50/20 plans, even if they could not reach maximum plan speeds due to FTTN performance limitations. However, the MBA survey does not recognise this outcome. Since it ranks RSPs based on % plan speed, and includes all plan tiers, RSPs that limited their customers to 25/5 plans could achieve a higher ranking in the survey, while actually giving their customers a poorer overall experience during the COVID impacts.

**Cost-effective and market-based alternatives are available for comparing RSPs**

There are more cost-effective and market-based alternatives available for comparing RSP speeds, for example Netflix and Ookla indexes. There are also other market comparators such as iSelect, WhistleOut, Finder, Canstar and technical news sites such as Lifehacker and Techradar which consumers can easily access and rely on to inform themselves about which RSP best meets their needs.

These comparators often include attributes that are not captured or reported in the MBA program. For example, additional content a consumer can access with a particular RSP or the RSP's Wi-Fi performance. The MBA program only focuses on a few RSP performance measures so is not a good indicator of overall customer experience and gives excessive weight to speed as the key comparator in a customer's purchasing decision.

Access speed is becoming increasingly irrelevant as a measure of customer experience. The differences between RSPs only amount to a few percent of the maximum plan speeds and are not a major driver of differentiation in customer experience The service defined experience and resilience of the device being used will be more relevant and easily understood by consumers as opposed to the speed at the entrance point into a home. For example, the prioritisation of specific applications within the home (fine tuning experience of devices) to improve the overall customer experience could potentially have a negative impact on the absolute value of download speed tests (measured at the entry to the premises).

**Lack of transparency**

We have little confidence in the current reporting due to the lack of transparency about the measurement methodology and results. The ACCC has finally released a summary of the data measured by the SamKnows robots but further detail is required. For example, we need to know how many tests have been excluded and why. There is also no clear description of the measurement methodology or what checks and balances are in place to assure reliable results. For example, we know the ACCC servers have been affected by congestion but there are no operational metrics provided to clarify this in the reports

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**Duplication of investment**

RSPs already invest in the deployment of speed measurement robots to support their speed claims in accordance with the ACCC Broadband Speed Claims Guidance. c-i-c [redacted] c-i-c The RSP analysis in the MBA program is effectively duplicating this investment.

As mentioned above, c-i-c [redacted] c-i-c

There is no need to continue the substantial investment in a large panel of MBA measurement robots to monitor individual RSP compliance. The ACCC already has broad powers under the Australian Competition Law to investigate advertising claims and take any action that may be necessary.

In the absence of the MBA program, we suggest that industry could help promote RSP compliance by developing a best practice guide for implementing the measurement principles in the ACCC's Broadband Speed Claims Guidance. The ACCC could also update the guidance to require RSPs to document their measurement methodology and keep records of measurements for audit purposes.

**Expansion to Fixed Wireless Access will not be helpful**

The program should not be expanded to include 5G FWA or other types of FWA technologies.

In addition to the concerns raised above regarding the current program, it is too early in the 5G FWA product lifecycle to commence meaningful RSP comparisons. The current sample size is not sufficient to extract enough useful and reliable data.

RSP comparisons for FWA are heavily influenced by which customers volunteer and not the actual RSP performance. So, like the FTTN situation, performance of individual services would often be masked by the limitations of the access radio path rather than revealing the RSP network performance.

As with the Fixed Line Broadband market, we expect there will be many market comparators which consumers can easily access and rely on to inform themselves about which RSP best meets their needs. Cost-effective alternatives are already available, for example, Ookla indexes.

## 02 MBA program objectives and outcomes

### 1) To what extent has the program produced worthwhile outcomes and has met its objectives? (effectiveness)

The program has provided some positive outcomes at an industry wide level by assisting policy makers and industry to improve underlying consumer services for all RSPs (contributes to objective #1).

A good example of this is the introduction of the overhead allowance by nbn. This issue was highlighted by the MBA report 7 focus on the impact of protocol overheads. This precipitated changes to nbn's service offering to give consumers an additional 15% of bandwidth which allowed them to achieve 100% of their plan speed when using connections capable of supporting those speeds.

However, the main focus of the report is aimed at providing reliable information for consumers to help them make better decisions, and in this respect the MBA report does not meet its stated aims.

The MBA program **does not** provide comparable fixed-line broadband information for consumers (objective #1) as no effort is made to provide a fair result that controls for factors outside an RSP's control, such as NBN technology.

The ability for the survey itself to generate improved busy hour performance is overstated in case study 2. The MBA report did not report on advertised busy hour speeds until May 2019, and the primary driver for reduced congestion was the significant reduction in NBN CVC pricing, with a focus on the 50/20 offer. This was also seen in the May-June 2020 results performance uplift which was driven by the 40% free CVC offer from nbn.

Furthermore, there is a lack transparency on how the results are generated by SamKnows. This makes it impossible for consumers and industry to genuinely rely on these results, especially if they wish to gain greater confidence by delving deeper into the measurement methodology and data.

The program **does not** facilitate RSP competition (objective #2) as the key measures are impacted to a much higher degree by factors outside an RSP's control, such as distance from the server (latency), NBN technology type (speed, latency, outages) and design of the NBN service (e.g. FTTN copper distance impacting speed). Hence there is a limited relationship between RSP controlled network performance factors and the survey outcomes.

The MBA program **does not** improve consumer outcomes to inform their purchasing decisions (objective #3), as the headline download speeds chart is skewed by biases in the underlying sample data. There appear to be no controls in place to ensure that each RSP has a comparable grouping of services in the volunteer panels (i.e. mix of technology types, locations, services impacted by copper distance/condition).

The performance experienced by a customer on an underperforming NBN access line (e.g. a long FTTN lines) is largely determined by the limitation of that line and will typically not be improved by changing the service to a different RSP, even if that RSP is ranked more highly in the MBA reports.

2) What have been the particular features of the program that made a significant difference to achieving its intended outcomes? (impact evaluation)

The program is useful where a clear linkage can be drawn between the objective of testing, how the testing is structured, and then how the output is presented and used.

For example, the MBA analysis brought a useful focus on the overhead allowance issue by showing that no RSP could achieve >95% of the plan speeds. Conclusions were easily drawn from the reporting about the need to adjust the NBN wholesale speeds so that consumers could actually achieve the plan speeds offered by nbn.

3) What unintended outcomes (positive and negative) have been produced? (impact evaluation)

We have identified three significant unintended negative outcomes resulting from the program.

**Lack of program transparency resulting in significant additional cost**

The lack of transparency means makes it difficult for RSPs to understand the MBA results and how to improve their performance in the program. Telstra reviews all available data to feed into improving its customer experience. This includes the use of third-party survey results such as the MBA reports. However, due to the lack of supporting data and information about the MBA measurement methodology, Telstra has ended up incurring significant additional cost in attempting to understand what factors are driving the MBA results and what actions it could take to improve its performance. This lack of transparency hinders RSPs from making meaningful improvements and has resulted in the MBA program falling short of genuinely creating performance based RSP competition (objective #2).

**The headline chart does not provide an accurate view of RSP performance**

RSPs have used the headline average download speed chart to make claims about being the fastest network. However, this chart does not necessarily represent actual RSP performance and is potentially misleading for consumers. For example, TPG was initially the leader in this chart but was later surpassed by Optus. This change in ranking did not appear to be driven by Optus making specific network improvements. Rather, it appeared to be due to a change in the number of underperforming lines in the MBA survey for each RSP, i.e. TPG initially had the least number of underperforming lines, and then Optus had the least number of underperforming lines later in the program. The performance of the access lines is determined by nbn, not the customer or RSP. Hence this headline chart does not provide a useful view of RSP performance and is misleading when used in the marketplace for this purpose.

In practice the report is effectively measuring an averaged view of the performance of the NBN plan and access technology mix associated with the pool of robots used to survey each RSP. Therefore, the makeup of the survey pool can actually decide the result, which is not how controlled testing should operate.

This is further highlighted by data from the latest MBA report in Attachment A. Factors that are outside an RSP's control, such as Technology Type and Customer Location, exhibit significant variation between RSPs and therefore could be biasing the results. By not taking such factors into account, the comparisons of RSPs in the reports are questionable as these factors may be masking any differences in RSP network delivery that are a true source of differentiation.

**RSP focus on headline download speed charts discourages them from upgrading customers**

The opportunity to improve rankings in the MBA headline speed charts by reducing the number of services on underperforming lines has meant that RSPs are discouraged from providing higher speed tiers to customers on lines with maximum attainable speeds less than the plan speeds, even if they are provided at the same price. Additionally, downgrading customers to lower tiers takes away useful downstream bandwidth for those customers and also ignores other factors that might have benefited these customers. For example, during the COVID pandemic, demand for upstream traffic increased dramatically. However, customers on 25/5 plans would have had upstream speeds constrained considerably more than customers on 50/20 plans, even if some of the latter could not achieve the full plan speed due to them being on underperforming lines. However, due to the way the ACCC survey ranks RSPs based on % plan speed and including all plan tiers, RSPs who limited their customers to 25/5 plans could achieve a higher ranking in the survey while actually giving customers a poorer overall experience.

4) Do the outcomes of the MBA program represent value for money? (efficiency)

The MBA program does not represent value for money, primarily because it duplicates robot testing already undertaken by RSPs to meet the ACCC Broadband Speed Claims Guidance.

The ACCC's guidance is a mechanism that provides clear benefit to consumers as it gives consumers upfront visibility of busy hour performance. These speeds directly relate to network design rules that are typically opaque to consumers (e.g. CVC purchasing strategy) and having a consistent approach to measuring and reporting speeds provides helpful information for consumers when they are choosing an RSP. To meet the requirements of this guidance requires RSPs to invest in speed measurement robots (similar to SamKnows robots) to support advertised speeds. c-i-c [redacted] c-i-c

The ACCC MBA program has effectively duplicated this investment in robots by creating a separate independent monitoring regime, which in turn provides a less accurate view of performance, due to the limited number of robots deployed.

Rather than duplicating the industry investment in measurement robots it would be more efficient for the ACCC to focus on ensuring that the RSP speed claims are supported by their robot measurements. The ACCC already has broad powers under the Australian Competition Law to investigate advertising claims and take any action it feels necessary.

To assist the ACCC with this task, industry could develop a best practice guideline for RSPs to follow when implementing the measurement principles in the ACCC's guidance. The ACCC could also update its guidance to require RSPs to document their measurement methodology and keep records of measurements for audit purposes.

5) What level of engagement have you had or expect to have with the MBA program and its outputs (reports, data release)?

Network performance is a high priority for our brand, so we take an active interest in all assessments of network performance. The level of interest is dependent on the source of the survey and how meaningful it is. Objective data and results on relative network performance for specific applications or speeds can be helpful to assess our network performance.

We have been actively engaged in reviewing all of the MBA reports. We have invested resources into understanding the results and the SamKnows testing itself. This is something we do with all third-party surveys. Our focus is mainly driven by the discrepancy we see between our test results and those from the ACCC survey, and the fact that other RSPs have used the results to claim they offer the fastest download speeds despite the MBA reports not necessarily supporting this claim.

c-i-c [redacted] c-i-c

## 03 Ongoing requirement for the MBA program

6) To what extent do the risks outlined above reflect the likely impacts from the discontinuation of the MBA program?

The risks laid out on page 31 of the consultation paper are overstated. The ACCC's Broadband Speed Claims Guidance provides clear requirements for transparency, and the ACCC already has broad powers under the Australian Competition Law to investigate advertising claims and take any action that may be necessary.

The combination of the ACCC Broadband Speed Claims Guidance and the ACMA's Service Migration Determination line testing capability requirement, Customer Information Standard and the anticipated rules on service reliability, means that consumers have ongoing access to reliable pre-sale and post-sale information.

7) What other data or market-led tools could assist in promoting the outcomes that the MBA has achieved, and are these sufficient to drive the consumer and market outcomes expected currently and into the future?

For consumers there are multiple market based tools available. For example, consumers can rely on Netflix and Ookla indexes. These indexes focus on RSP performance and the quality of experience for consumers of those applications, based on direct measurements undertaken by the index providers.

Measurement of busy hour performance at the RSP level is achieved by RSPs undertaking robot monitoring in accordance with the ACCC Broadband Speed Claims Guidance.

## 04 The scope of a future MBA program

We do not support the continuation or the expansion of the MBA program. Our responses to questions in section 4 are only relevant if the program is extended.

8) If the MBA program is extended to NBN Co's fixed wireless network how could the ACCC work with partners to build these cohorts quickly?

Telstra could provide information to our Fixed Wireless customers to encourage them to participate in the MBA program. However, this would have to be based on the fair treatment of data from this cohort. There is significant variance in NBN Fixed Wireless services and so fair RSP comparisons would be very difficult. Any FWA reporting would need to be limited to an assessment of the technology as a whole. This would help verify nbn's self-reported cell performance metrics against actual measured customer experience.

9) Should an extended MBA program continue to focus solely on NBN services? What are the benefits in extending the program to capture competing networks? If so, should they be fixed-line only or seek to cover wireless home broadband services including those being deployed by mobile network operators as well?

If Government wishes to see ongoing monitoring of NBN performance, then it should commission a program to target this and have it funded by nbn or Government. This should focus on NBN services as a whole and not seek to measure and compare individual RSP performance, as the underlying NBN technology is the major driver for the performance of the services delivered, not the RSP networks.

As nbn is a monopoly provider and typically does not have direct competition or shareholder accountability, there is benefit in having a collective understanding of the NBN performance and using that as a basis to improve customer experience.

The program should not be expanded to include 5G FWA. As outlined in our response to Question 8, it is too early in the 5G FWA product lifecycle to commence meaningful RSP comparisons. The current sample size is not sufficient to extract enough useful and reliable data. RSP comparisons would be heavily influenced by which customers volunteer and the associated radio paths, rather than actual RSP performance. As with the Fixed Line Broadband market, we expect there will be many market comparators which consumers can easily access and rely on to inform themselves about which RSP best meets their needs. Cost-effective alternatives are already available, for example, Ookla indexes.

10) The ADSL network has been used as comparator for NBN fixed-line services in MBA program reports. As ADSL is being displaced, what network or networks would be a suitable benchmark comparator to the NBN network?

There is no need to continue to report on ADSL. The migration from ADSL is now largely complete and the performance improvement with the NBN is apparent. We do not see the need to replace this with an alternative comparator network.

## 05 Other potential augmentations of the program

We do not support the continuation or the expansion of the MBA program. Our responses to questions in section 5 are only relevant if the program was extended.

11) Which RSPs who are not currently being reported on could be considered for inclusion in an extended program, and why? How can sufficient volunteers be attracted to enable the proposed inclusion?

Telstra is of the view the MBA program should not continue and has no views on which RSPs could be included in an extended program, only that on inclusion they should also help fund the program.

To include all RSPs is simply not feasible due to the number of robots required. This is another reason why a program focused on RSP comparisons should not be continued.

12) What short and long term strategies could assist in promoting interest and continued engagement with the program to ensure that the panel accurately reflects the market as a whole?

The MBA program should not continue to focus on RSP comparisons. If Government wishes to see ongoing monitoring of NBN performance, then it should commission a program to target this and have it funded by nbn or Government.

We would be willing to assist in promoting a program with reduced scope that purely focuses on NBN performance without attempting to compare RSPs.

13) Are there any metrics that are not currently included in MBA reports that would provide valuable information to consumers and direct industry and policy responses?

We don't see value in expanding of this program, noting that as the industry moves into the next era of technology, focus on speed will become less important. The service defined experience and resilience of the device being used will be more relevant and easily understood by consumers as opposed to the speed at the entrance point into a home. For example, the RSPs may begin to focus on quality of experience at the application level, and optimise for this within the home. This could potentially have a negative impact on download speed test measurements, even though the overall customer experience has improved.

14) Are there any further tests or reporting mechanisms that would assist in detecting systemic consumer experience or other network issues to promote their timely resolution? Is this test a cost effective option?

Similar to the Case Study 7, if there is a systemic customer experience issue being detected by the MBA robots, it would be ideal for this issue to be flagged as soon as possible with the relevant RSPs, via the ACCC or directly from SamKnows.

15) In MBA Report 3, a comparison was made between MBA data from urban and regional Australia.

a) Are these geographic splits useful for industry and policymakers?

We do not support the continuation or expansion of the MBA program.

If Government wishes to see ongoing monitoring of NBN performance, which does not include RSP comparisons, then this type of analysis to identify trends or issues across industry wide factors is a useful area for the program to focus on.

b) What other comparisons would be helpful for industry and policymakers in their decision making?

Further breakdown of performance by NBN Access technology type, plan speed, or State and across all metrics – speed, latency, outages. This could provide useful insights for industry.

16) In regards to the MBA program data:

a) Is it sufficiently accessible and useful for consumers?

The MBA report is accessible however it is not useful for consumers, given that it does not provide a fair comparison of RSP performance, and is not presented in user friendly language which consumers in general could easily understand.

b) Is it likely that intermediaries, comparator service providers and other market participants will or are likely to make use of the data to help inform consumers?

We are not aware of any existing use of the MBA program data by intermediaries, comparator service providers and other market participants so it is unlikely this would occur in future.

c) How can we help to promote greater proliferation of the data to promote a better functioning of the market?

Providing greater access to the underlying data and allowing it to be assessed by other independent bodies or academics/universities may enable studies of market performance.

17) MBA reports are released quarterly, including with a MBA Monthly Report that covers a period of three months and details the daily network level performance of each month.

a) Is this frequency sufficient?

If the program were to be extended, the current frequency is sufficient. Reporting more frequently will not provide stakeholders sufficient time to review and analyse data sufficiently before the next report is produced.

18) Is there value in harnessing SamKnows' international data to provide policymakers and the market with data on how Australia compares with these jurisdictions? If so, what measures are most important to compare and how could they be presented?

There is value in in harnessing SamKnows' international data to provide policymakers and the market with data on how Australia compares with other jurisdictions. Given SamKnows' operation of similar international programs it would be useful to leverage this to provide international comparisons.

Such comparisons should focus on average (and typical range) download speeds, upload and latency. It would also be interesting to see comparisons of more customer-focused metrics such as Netflix stream sizes, videoconferencing, and OTT connectivity.

19) Is the current residential focus of the MBA relevant to small and medium businesses? Would a specific panel of business volunteers and the addition of new performance metrics provide data that is more relevant to their needs?

Given the difficulty in establishing sample sizes large enough, an industry wide sample of business services is most appropriate. This may quickly establish that there is little difference between business and consumer performance and therefore avoid the need for any further expansion of the program into this segment.

20) For RSPs who offer services to small and medium enterprises, would you be willing to assist with expanding the program to measuring performance on business services?

We don't see value in assisting with an expansion of this program to small and medium enterprises customers. We recommend focusing efforts on ensuring the current program is delivering meaningful results which are relevant for all segments.

21) Are there any further enhancements to the testing methodology or testing infrastructure that would further promote the ongoing integrity and reliability of the MBA data and results?

Recommended enhancements are:

1) Publish all data.
    - The data currently provided is only a summary of the data collected for each Whitebox robot. Data on every test taken would allow a full independent analysis and provide greater confidence.

    - If the full data set cannot be provided, then more detail on how each data point is generated is required. For example, how many samples for each metric for each robot, how many missed results, how many delayed tests due to cross traffic, useful patterns associated with the data such as which hour was the 5$^{th}$ worst hour for each RSP, and the proportion of speeds tests over each hour of the day.

2) Include other operational metrics
    - The report focusses on measurement outputs but there is no reference to the operational aspects of running the program. For example:
        i. How many robots are reporting, how many go offline;
        ii. The capacity of the transport link to the ACCC server;
        iii. Utilisation of the server during the month.

3) Additional metrics to help verify the MBA metrics.

- To check the reliability of the measurements to the SamKnows server, include a like for like multi-thread test to Netflix / Fast.com.

22) The ACCC released a Statement of Expectations in August 2019 setting out a number of principles to provide assurance over the veracity and independence of the program.

a) Is this a sufficient safeguard against misuse of the program by RSPs?

This is a sufficient safeguard for the program.

Our expectation is that SamKnows undertakes further testing to ensure the validity of their program.

Our view is that the reputational risk for any RSP not complying with the Statement of Expectations is significant if discovered and provides a strong deterrent.

b) Are there any further actions that should be taken, either through technical/methodological aspects of the program, or via stronger commitments from participants?

Provide more detail about how the SamKnows testing methodology works and institute a forum or governance structure (supported by the ACCC) where RSPs can formally raise genuine questions or concerns for review and resolution.

It should not be incumbent on RSPs to engage SamKnows separately to investigate and build up this knowledge base.

23) Subject to safeguards being in place to protect the integrity and independence of the program, would RSPs be open to:

a) assisting the ACCC to build interest in the program among their customers to ensure monitored cohorts reflect the broadband market as accurately as possible, and network owners as part of nominating their network as benchmark comparator to the NBN?

We would be willing to assist in promoting a program purely focused on NBN performance.

b) deploying a software-based testing client, embedded into their customers' equipment, to expedite the growth of a broad reporting panel?

We are cautiously open to an embedded solution being installed in customer gateways. However, this must be part of Telstra's production environment, covered by our operational management solutions and processes and not subject to any restrictions from the ACCC or SamKnows.

Our concern is that this approach may place undue burden on our integration/maintenance activities, or limit our ability to run other software on these modems. So, any decision to deploy embedded firmware would need to weigh up these impacts against any positive benefits received.

# 06 Attachment A

This attachment explains why the MBA survey design does not deliver fair RSP comparisons. It provides examples of how the MBA results are largely determined by factors such as technology type and customer location, rather than RSP controlled factors.

**Technology mix for each RSP:**

The ACCC report does not use a consistent NBN technology mix for each RSP, as shown in figure 1 below. This is important, given that:

- The NBN technology for a customer is independent from their selection of RSP.
- Each technology has materially different performance characteristics.

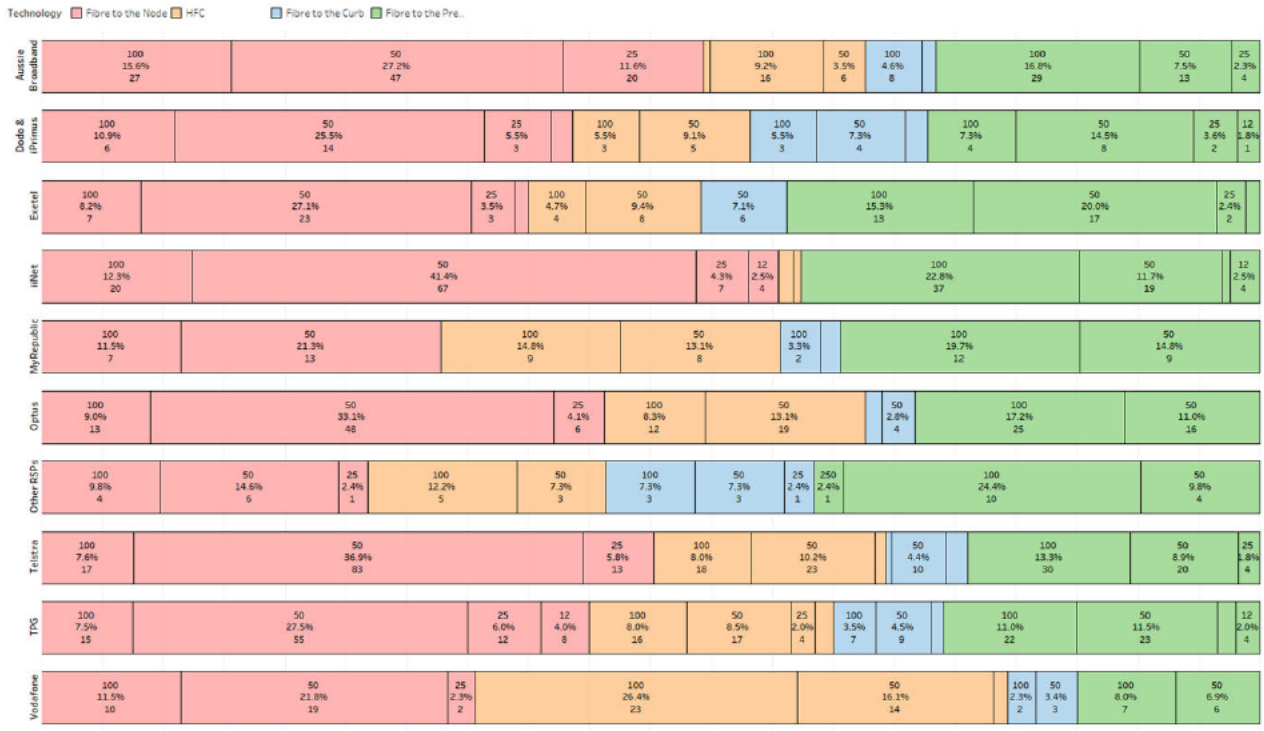


*Figure 1 – Plan and Technology mix for RSPs in ACCC MBA Report 10*

**Outages:**

Outages for each Technology Type are shown below (figure 2). This shows FTTC and HFC having higher fault rates. This is consistent with our understanding that technology types with more active elements in the external distribution network are also more prone to faults.

| Technology | Average Daily Outages Lasting Longer than 30 Seconds | Standard Deviation | 95% Confidence Interval of the Mean | Panel Size |
|---|---|---|---|---|
| Fibre to the premises - FTTP | 0.17 | 0.30 | 0.14 - 0.20 | 351 |
| Fibre to the curb - FTTC | 0.44 | 1.16 | 0.18 - 0.70 | 78 |
| Hybrid fibre-coaxial - HFC | 0.33 | 0.67 | 0.24 - 0.42 | 222 |
| Fibre to the node - FTTN | 0.31 | 0.77 | 0.24 - 0.37 | 582 |

*Figure 2 – Outages per Technology Type – MBA report 10*

In the ACCC report released in September 2020, iiNet is shown as having fewer outages longer than 30 seconds, as well has having the smallest standard deviation in its results (figure 3). However, iiNet also has the smallest proportion of technology which is susceptible to higher outage rates – i.e. FTTC and HFC. Unless the technology is controlled for in the testing, to give a like for like analysis, making any conclusion on relative RSP performance is problematic. It would not be correct for a customer to infer iiNet had better outage performance, when the overall result is primarily driven by the mix of technology in the survey rather than RSP controlled factors.

| RSP | Average Daily Outages Lasting Longer than 30 Seconds | Standard Deviation | 95% Confidence Interval of the Mean | Panel Size |
|---|---|---|---|---|
| Aussie Broadband | 0.24 | 0.50 | 0.17 - 0.32 | 173 |
| Dodo & iPrimus | 0.40 | 0.93 | 0.15 - 0.65 | 55 |
| Exetel | 0.27 | 0.97 | 0.06 - 0.48 | 85 |
| iiNet | 0.21 | 0.38 | 0.15 - 0.26 | 162 |
| MyRepublic | 0.24 | 0.46 | 0.13 - 0.35 | 61 |
| Optus | 0.44 | 1.01 | 0.27 - 0.60 | 144 |
| Telstra | 0.28 | 0.67 | 0.19 - 0.36 | 225 |
| TPG | 0.31 | 0.74 | 0.20 - 0.41 | 200 |
| Vodafone | 0.17 | 0.41 | 0.08 - 0.25 | 87 |

*Figure 3 – Outages per RSP – MBA report 10*

**Latency:**

Performance of the underlying NBN technology is not uniform when Latency is observed as well. If we focus on data in the MBA report from Victoria (small State to control for distance), then we can see FTTP has the lowest latency, followed by FTTC, FTTN and then HFC (figure 4). This aligns with our understanding of these technologies, given that HFC and FTTN involve more signal processing overall. This shows that different technologies can add as much as 6ms to a latency test regardless of which RSP is chosen.

| Busy hour trimmed mean latency | Technology Latency - Victoria Only | | | |
|---|---|---|---|---|
| | Fibre to the Premises | Fibre to the Curb | Fibre to the Node | HFC |
| Latency (ms) | 6.51 | 8.19 | 12.23 | 12.84 |

*Figure 4 – Latency per NBN technology in Victoria only – ACCC MBA report 10*

Another important factor for latency is distance. If you look at the latest MBA report, there are outliers that represent locations that are a significant distance from the test server (figure 5). Looking at the Telstra results there are two services that appear to be in Darwin (circled in red), which add approximately 0.6ms to Telstra's total average latency.


*Figure 5 – Latency (ms) per RSP with State breakdown – MBA report 10*

Given that Technology and Location play a major role in the overall latency result, these must be controlled for in any comparison between RSPs. As this has not been done, the results are not a representation of which RSP offers better latency performance. Rather the results in the survey present an average measure of the technology and State mix for each RSP within the ACCC survey pool itself. The data is not generated in a controlled or robust enough manner for customers interested in latency to draw conclusions on RSP performance.

**Download speed:**

Similarly, for the headline average download speed results there is a significant variation between different technology types (figure 6). FTTN delivers lower speeds due to the fact that some FTTN services cannot achieve the full plan speed due to the length of the copper lines for those services. This is known as the Maximum Attainable Rate of the FTTN service and is set by the NBN network design. It is not controlled by the RSP. In the survey, these types of FTTN services are identified as "Underperforming lines".

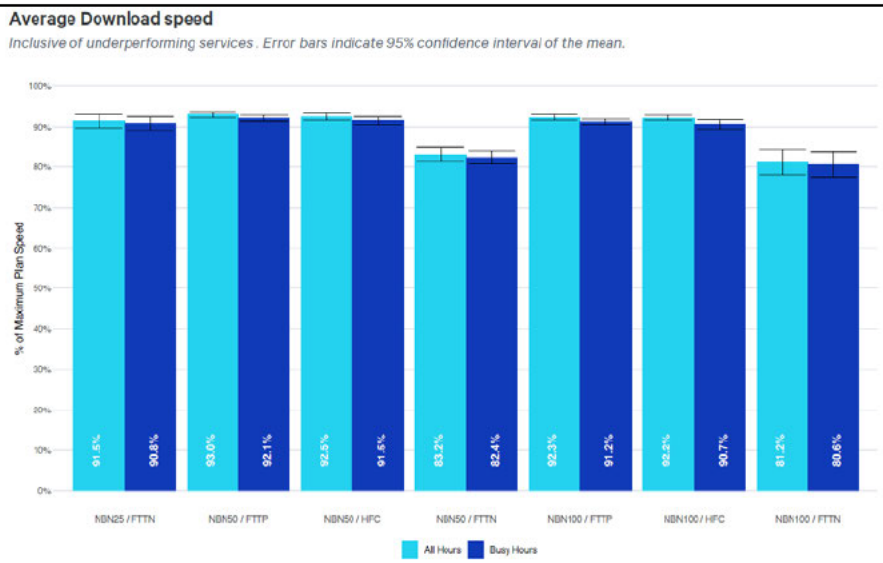


*Figure 6 – Download speed per NBN technology – MBA report 10*

Therefore, the overall result for download speed can be driven by the proportion of underperforming lines in the survey (largely FTTN services). This is illustrated in figure 7 below, where the RSPs with the highest download speeds are generally also those RSPs with the smallest number of underperforming lines in the survey. This observation holds across all the MBA reports produced to date.

Customers looking at the headline download speed comparisons between RSPs will not be informed about which RSP provides better speeds. This is because the results are actually measuring the proportion of FTTN long line customers in the survey pool, instead of a metric that measures the underlying performance of the RSP networks.

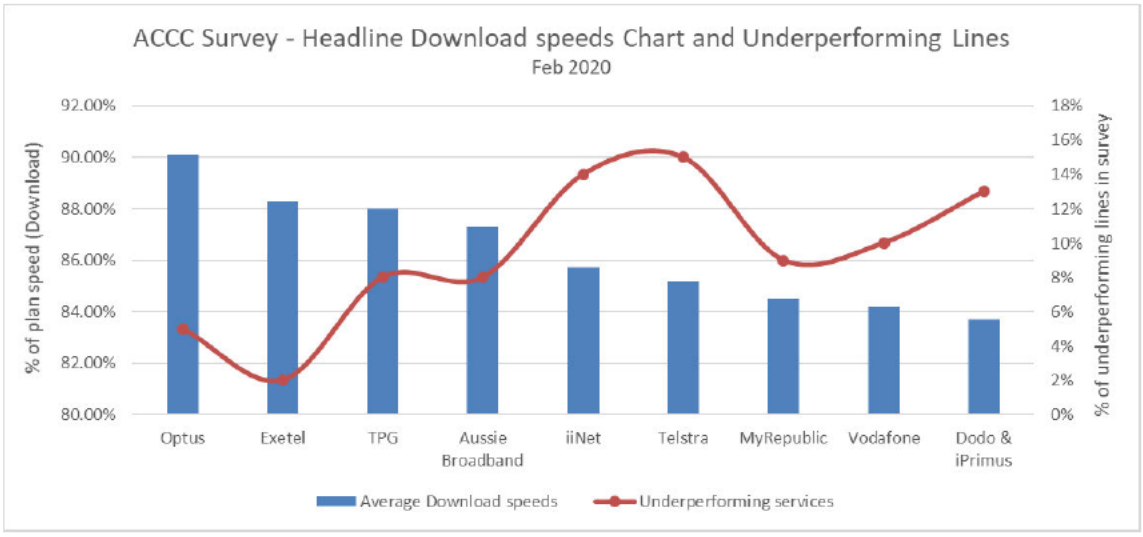


*Figure 7 – Download speeds vs Underperforming lines – MBA report 9*