2022 Review of the Measuring Broadband New Zealand programme

Spark Submission

Public Version

Commerce Commission

16 March 2022

Purpose Of A Testing Regime

1. The Commerce Commission expresses its objectives for broadband performance testing, in relation to its obligations, to be two-fold:
    a. Providing consumers with accurate, accessible and independent information on broadband performance across different providers, plans, and technologies, to help them choose the best broadband for their household; and
    b. Shining a light on broadband performance by allowing comparisons between providers and encouraging providers to compete on performance and not just price.
2. We agree that the latest iteration of testing (Measuring Broadband New Zealand 'MBNZ'), managed by SamKnows, has technically met these objectives. It remains unclear to us, though, whether consumers value this programme or rely on it to any extent.
3. MBNZ is set to become more visible and important for industry as signatories to the TCF Broadband Marketing Code will be required to use MBNZ numbers in their marketing. The Code will provide guidance for providers who talk about broadband technologies and/or plans. These include RSPs, price comparison websites, consumer organisations and local fibre companies.
4. This should help consistency in marketing. But it also increases the importance to providers of having accurate performance data they can use to describe their products and services.
5. It is timely then that the Commission is able to review the next phase for the MBNZ, including what is measured and how RSP can become more engaged with the testing provider. We welcome the opportunity to contribute to this discussion.

MBNZ Testing Methodology Is Working Well

6. New Zealand consumers have access to a world leading range of networks, products, and services. These services are differentiated by a range of factors including, but not limited to, price and service quality (which includes technical performance). It makes sense therefore to have an industry testing regime which can make fair and accurate comparisons between technologies.
7. Spark supports the testing regime put in place by SamKnows. They are a global testing company who work with regulators and operators around the world. We generally consider their methodology to be technologically and statistically robust, and there is a high degree of trust in their measurements.
8. This trust has come from a high level of technical engagement with SamKnows, facilitated by the Commerce Commission. This has demonstrated an excellent way of working, with industry stakeholders, the regulator, and external experts coming

together to investigate and address industry issues, such as the FibreMax performance issues.

9. As the Commission looks to publish its RFP for the next phase of MBNZ we encourage the Commission to build on these foundations rather than making any fundamental changes. This will also ensure continuity of testing across periods.

MBNZ Reports

10. The Commission currently publishes quarterly MBNZ reports. These present the most recent measurement data along with a technical commentary from SamKnows. These reports are typically impartial technical insights presented alongside graphs of results.
11. These reports have been accompanied by press releases from the Commerce Commission. We have sometimes found the emphasis of these press release to be different from the report itself which risks creating misleading media reports.
12. We have found the quarterly cadence of reports to strike the right balance between frequency of updates and the level of changes seen in individual results between reports. There is a risk if too many reports are produced that they are not picked up by the media, and industry suffers from report fatigue. We note in the UK that reports are published six-monthly.
13. Report cadence is even more important going forward as RSPs need to update their marketing to reflect the latest MBNZ results once published. We suggest that quarterly reports are still the most appropriate, although the Commission may choose to still update test data results on a monthly basis, eg through a consumer portal.
14. Since RSPs will be required to use the quarterly MBNZ data in their marketing, we strongly request the Commission sticks to a strict publication timeframe so RSPs know the date on which each report will be published. This will enable us to plan our marketing updates (websites, print marketing etc) and schedule internal resource to update our existing marketing material on our website, call scripts, customer journeys etc.
15. We also suggest that the Commission publishes a table in its quarterly reports showing the speeds that RSPs need to use for their plans/technologies as currently RSPs have to read the information off multiple graphs across the reports. The table would be a list of plans and the National Peak Time Average Speeds (truncated to be consistent with the Broadband Marketing Code).
16. SamKnows should also make it clear in the commentary in their reports where the level of difference between RSPs is likely to be noticeable by consumers. For example, minor differences between providers are unlikely to make any practical difference for individual consumers, and it would be misleading to call out one RSP as fastest because they are only marginally faster than another.

17. We recommend SamKnows publish a range of speeds within which RSP service is essentially the same, and only RSPs who sit outside of this speed range would be noticeably different. One way to do this would be to colour code the results so RSP plans similar enough to the fastest results would be coloured green, those with a noticeably difference would be coloured orange and those considerably worse would be coloured red

Speeds To Be Displayed In Marketing According To The TCF Broadband Marketing Code

Plan	Description	National Peak Time Average (Mbps)	
		Download	Upload
ADSL	Industry Average	8	0.7
VDSL	Industry Average	38	10
Fixed Wireless	Industry Average	29	17
HFC Max	Industry Average	201	96
Fibre 100	Industry Average	100	22
Fibre 100	2degrees	100	tbc
Fibre 100	Orcon + Slingshot	97	tbc
Fibre 100	Spark	102	tbc
Fibre 100	Trustpower	102	tbc
Fibre 100	Vodafone	98	tbc
Fibre Max	Industry Average	807	506
Fibre Max	2degrees	794	tbc
Fibre Max	MyRepublic	673	tbc
Fibre Max	Orcon + Slingshot	869	tbc
Fibre Max	Spark	862	tbc
Fibre Max	Vodafone	827	tbc

Table1: Example of how SamKnows could display plan data in a summary table in its reports to assist RSPs in identifying which marketing numbers they can use, and to allow RSPs to quickly compare plans and technologies.

Challenge with the volunteer model

18. We support the SamKnows approach of measuring speed at the customer's premise. The key feature of the SamKnows whiteboxes is they measure what the RSP delivers into the customer's premise. It is therefore a fair measure of the RSP's service when the customer is using the RSP-supplied modem and excludes other variables such as the customer's home network or equipment.

19. This allows for a fair comparison between RSPs and their plans. Other approaches, such as online speed tests run by consumers, are influenced by factors such as the customer's device and home network and do not provide true comparisons between RSPs.

20. However, even with the SamKnows whitebox approach there is still a fundamental question about what MBNZ is designed to measure:

    a. Is it the entire *existing* customer base with their mix of modems (including third party modems and older versions of the RSP's modem which may impact performance on some technologies); or

    b. Should it be reflective of the speed a *new* customer could get if they signed up to the service using the latest version of an RSP's modem?

21. As the main use of the MBNZ reported numbers is for helping customers when choosing a new broadband product, we suspect that testing should be weighted towards the services and equipment which are part of the current product offering. We recognise this could be a challenge and has the potential to reduce the testing pool of volunteers, but it would better reflect the purpose of the testing from an end-user perspective.

22. Another factor with the white box approach is the amount of test traffic generated by the SamKnows test. These use the customer's data so contribute to the customer's data allowance when used on plans with data caps. This can cause customers on lower data caps to hit their allowance, or push people on variable plans onto the next pricing tier and increase their monthly rental costs.

23. RSPs may in some cases be able to zero rate traffic some testing traffic but this comes at a cost for the RSP. While it might be possible to zero rate test traffic to the known MBNZ test servers in REANNZ, it would not be practical to zero rate tests which are run to commercial sites like Netflix or gaming servers. This is because we cannot separate test traffic from normal traffic.

24. It is for these reasons that Spark has not proactively sought to promote the MBNZ scheme to our customers to seek volunteers. Our concerns are that volunteering could increase the costs for some customers who are on lower data caps or 'unplan' packages, and there was a theoretical risk that testing traffic could negatively impact our network in some areas depending on how the test was implemented.

RSP Engagement with SamKnows

25. Some of the issues above can be addressed by RSPs engaging directly with SamKnows. For example, if an RSP were to integrate the Samknows test client into its CPE it could manage the testing schedule between devices and across areas to spread the load of the test traffic across its network while achieving the same level of statistical validity of the results.

26. We note that in the UK, Virgin Media and BT have the Samknows test client built into their modems and share the data with Ofcom for their official report. If an RSP contracts directly with SamKnows then it makes sense that, with the appropriate checks to ensure the data is representative of the wider customer sample, they should be able to share their data to increase the testing base for MBNZ.
27. Where an RSP is contracting directly with SamKnows then the Commission will want to ensure that the numbers provided for the MBNZ report use a methodology which is suitably equivalent to those used for the volunteer whiteboxes under the MBNZ scheme.
28. One difference might be where the RSP puts its test servers. We have noted previously that we do not consider the current locations of the MBNZ test services in REANNZ to be representative of NZ traffic flows as only a very small percentage of our normal traffic goes to this network destination. As a result we had no direct connection prior to MBNZ being established. As the Commission is aware, Spark had to put in additional connectivity to directly connect with REANNZ for testing to avoid being penalised because of the chosen location of the test servers.
29. This is important because if an RSP has a commercial relationship with SamKnows they may not be permitted to use the MBNZ servers, or prefer to use servers placed at other locations in their network, for example on the edge of our network where we connect to other networks (eg our international gateways). A technical discussion would need to be held with SamKnows and the RSP to determine whether the test would be equivalent.
30. For this reason it might still be appropriate for RSPs who have a commercial relationship with SamKnows to continue to have some whitebox volunteers in their network to give comfort that the testing methodologies are suitably equivalent.

Investigating The Home Environment (non RSP specific)

31. We welcome the Commission looking to extend the areas it can investigate further where there is a proven issue. There is considerable value in understanding factors beyond just the RSP connectivity.
32. It should be recognised when investigating these factors that many of them are outside the control of an RSP, and in home issues especially have many variables which can impact performance.
33. We therefore suggest that the Commission looks at each issue in turn and considers them in isolation to the RSP broadband performance. It may be that some RSPs are better than others at managing in home experience, but the first step is to understand what the issues are, without attempting to draw a link back to individual RSP results in the initial research.
34. We consider the issues below to be better investigated as a standalone report and consideration being given to next steps from there.

Wi-fi

35. In home wi-fi performance can have a big influence on the customer's experience of their broadband connection. There are many factors which can impact speed including the location of the modem in the home, the house construction etc.
36. We think there is value in investigating wifi performance in the context of NZ home layout and usage, and we would be interested in discussing how this could be approached.

Customer CPE (devices)

37. Another area outside of RSPs' control which will have a big impact on the customer's experience of broadband is the device(s) they are using. It would be extremely useful to understand the range of devices being used by customers and their performance. Again, this should be a one-off investigation to inform wider policy discussions.

RSP CPE (modems)

38. One area which can be within the control of the RSP is the wi-fi performance of the RSP's supplied modem. Our observation is that improved wi-fi performance is often the biggest benefit of upgrading a modem from an earlier version.
39. As noted earlier, an RSP's customer base will be made up of a range of different modems – those who have the RSP's latest modem, those using earlier versions of the modem and those who have sourced their own third party modem.
40. It is important that an RSP isn't penalised because of the mix of modems used by its customers.

QUESTIONS

Q1 What providers, broadband plans, performance metrics and services should we consider removing or adding to the testing programme?

Home wifi, modems and customer CPE

See our comments above in support of standalone investigations into home wifi, modems and customer CPE.

ADSL and VDSL

While copper services are declining there are still a considerable number of customers on these technologies and for some they continue to be the only option available.

We do not recommend any effort is put in to recruiting new volunteers for these technologies, and instead suggest an approach where technologies or services which are declining in popularity are reported at a technology level (not by RSP) until the number of volunteers naturally wanes to the point where they cannot be reported in a statistically valid way.

Satellite and WISPs

In principle we support the inclusion of any widely available technology, RSP and plan in the MBNZ report, provided the results are statistically valid and representative of the speed achievable by customers of that service. This will be a function of the number of test devices and the variability in speed between different installations.

This may prove more of a challenge for smaller RSPs who provide more bespoke installations such as WISPs or smaller satellite providers who use different technologies and equipment.

We support the inclusion of Starlink satellite in MBNZ testing. Satellite is being marketed as an option for customers who cannot get reliable broadband so it is important customers understand how it will perform. It will also be interesting to see how performance changes over time as more customers connect, and more satellites are launched.

Hyperfibre

We support the measurement of hyperfibre fibre plans.

Other Overclocked Fibre Plans

Some LFC inputs are overclocked and the variation between RSP performance for end customers is minor. In these cases, under the TCF Broadband Marketing Code, RSPs are able to use the headline speed as their marketed speed because customers will normally receive at least this speed. Eg a retail service based on Fibre50 would normally provide at least 50Mbps to the customer. This is demonstrated with the MBNZ Fibre 100 results where results show download speeds in excess of 100Mbps.

We don't see value in MBNZ measuring every fibre broadband plan available, particularly where the plans are overclocked and do not represent a significant part of the market. We are happy for Fibre 50 plans etc to be left unreported.

However, we do think there is value in testing some of the overclocked Hyperfibre variants as the performance of these plans is still unknown.

Q2 How should we approach onboarding or adding new providers, products and technologies?

An RSP will always have the option to market a new plan without a speed claim. This is not always attractive for an RSP however, as they will want to share information on performance with customers to show how the plan fits their current line-up.

The Commission should have a process for RSPs to request that their plans are included in the MBNZ scheme and for how they will recruit an unbiased set of volunteers which are representative of typical customers on that plan.

The challenge with new plans is that initially there are unlikely to be a large pool of customers from which to gather volunteers and the risk is that the results may not be representative of speeds seen nationally once the product gets wider takeup.

More generally there is a potential for the cost of the MBNZ scheme to increase considerably as new plans are added.

It might be that individual RSP are allowed up to, say, three plans tested for free under the MBNZ scheme provided that for each new plan:

- The plan meets a defined threshold for number of customers
- The RSP helps recruit the volunteers and can demonstrate they are randomly chosen and are an unbiased, representative sample of the RSP's customer base

An RSP with a plan that doesn't meet the threshold or who cannot recruit the necessary amount of volunteers can take a commercial route to get their plan tested by the MBNZ test provider.

Sometimes when a product is launched it uses the same technological inputs as existing products and has the same performance, but at a new price point or bundled in a different way, often with a different plan name. In this case, the RSP should be able to use the results from an existing plan where the performance is the same. In this case there is no need to create a new test pool of volunteers for the new plan. The RSP will be able to confirm this to the Commerce Commission.

Q3 Should we encourage greater collaboration between the testing provider and the broadband providers to facilitate the testing of new products?

Yes. One of the benefits of working with SamKnows has been their technical expertise and their willing to engage with RSPs to work through particular issues. Internationally there are many examples of SamKnows working with RSPs to run their own test pools.

MBNZ should be designed to allow this sort of development in a structured way if an RSP decides to enter into a commercial relationship with SamKnows.

The key thing will be to ensure the methodologies and testing regimes are similar enough to give comparable results to the main MBNZ result, and to develop processes to allowing the sharing of test data for incorporation in the MBNZ report.

Q4 What options should we consider, to recruit and maintain volunteers to support greater coverage of products, providers and plans?

As set out above, we are hesitant to recommend or promote the use of whiteboxes by our customers because of the potential for the SamKnows testing to use up a customer's data.

As the Commission reconsiders its recruitment practices, we encourage it to attempt to remove any elements of its recruitment programme that may exhibit bias towards poor-performing connections. A random selection of New Zealand addresses would be preferable, for example, to advertising targeting customers who believe their current broadband performance to be unsatisfactory.

Q5 What level of support should providers offer to the programme and to volunteers to promote the programme?

Providers who have commercial relationships with SamKnows and who share their data with MBNZ, should not be required to promote whitebox volunteers for the MBNZ program as they risk doubling up on testing capability.

Q6 Should we consider applying different reporting thresholds for some testing, for example smaller sample sizes, where it has been difficult to get enough volunteers?

No. SamKnows is trusted by industry because their results are based on robust technical testing principles and a firm foundation of statistical validity. We would be very concerned if MBNZ were to use small sample size which would lead to less accurate data – even if this data was flagged as less valid.

There should be a small number of options for RSPs:

- work with the Commission to increase volunteers on the RSP's plans
- commercially work with the MBNZ test provider directly
- commercially work with another equivalent provider to SamKnows using an equivalent methodology
- not appear in the MBNZ report and not use an RSP specific number in their marketing.

Q7 How often do you think we should report test results? Why?

We support quarterly reports where the numbers need to be used in marketing.

We support the quarterly report having a table showing the plan and the national peak time average speeds for each plan and the overall technology average. This will then become the definitive reference for the numbers RSPs use in their marketing.

Q8 What changes should we make to our current testing and reporting to better support consumer choice?

Spark would like to see the addition of single threaded TCP download and upload tests alongside the multi-threaded tests used today.

Q9 What are the practical, technical or commercial implications for providers of moving to an embedded software-based testing approach?

RSPs will need to review their Terms and Conditions for affected customers to understand if they need to make any amendments to their terms to allow testing.

RSPs will need to enter in a commercial relationship with the testing provider. This can take a while to set up.

An RSP may use SamKnows whiteboxes, but this is likely to be a more expensive solution and require support for additional hardware in the customer's premise.

Alternatively, an RSP can look at embedding the client into their modem as seen oversees. The RSP would need to work with their modem provider and SamKnows to embed the SamKnows client in their modems. There would be cost and time associated with embedding the client in to each modem involving the RSP, SamKnows and the modem manufacturer. There is likely to be ongoing operational costs which could including things like management and license fees.

RSPs change the modem they provide to customers over time. The RSP may choose to include embed the testing client in their most recent modem in which case it will be available for new and recent customers. Or they may choose to invest in embedding the technology in their older modems to reach a larger proportion of their existing base. Not all modems will be technically capable of supporting the embedded client or be worth the investment to integrate it.

The Commission mentions Consumer Data Rights and a customer's access to their own data. We would envisage that a customer could access their own recent data directly through the test provider portal, but if RSPs were required to create separate data stores of historical measurements for customers, or customers were able to request access to a deeper set of information, this would likely require further development from RSPs. This would act as a strong disincentive to adopting embedded testing in their modems.

Q10 What implications would an embedded software-based testing approach have for licensing for modems/third party firmware, warranties, network load and modem capability?

Rolling out testing to a wider selection of end users could result in a huge increase in test traffic on the RSP's network which could potentially cause congestion and influence results. Therefore an RSP will need to carefully balance its testing schedules to provide enough information without generating too much traffic.

Test providers will likely have a per user licensing model for the test software as well as fixed costs.

RSPs will likely need to build their own test servers (unless the Commission allows RSPs to use the MBNZ test servers)

Q11 What implications does this approach have for privacy and trust for consumers and providers? What safeguards would need to be in place to ensure the privacy of consumer data including cybersecurity and privacy of consumer details?

We note that a number of UK RSPs have embedded SamKnows testing into their modems so we expect that these issues can be managed.

It will be important to understand and limit what the test provider can do with the customer data, and where data is shared (for example in the Commission's MBNZ report) it is shared anonymously.

Care will need to be taken if a customer has both a volunteer test device and embedded test software to ensure they don't interact. Assuming technically they can co-exist, this could be used as a way to validate the embedded software approach to check the results are similar.

In this case the Commission would need to ask the volunteer to confirm they are happy to share their contact details with the RSP and the test provider so the two devices (the testing device and the RSP's embedded software) can be collected and compared. This should only be done with the customer's consent as information is only provided to RSPs today for the purpose of plan validations and subject to the MBNZ code of conduct.

[ends]