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Issue 1 – Network management and monitoring services delivered on NGNs

Questions

1. How do RSPs, content service providers and access network owners/operators currently manage and monitor their fixed broadband network and speed performance?

There are a number of software packages available (Nagios, Cacti, Mrtg, Solarwinds, HP Openview, etc.) that monitor core infrastructure and supply alarms and statistics to measure capacity, latency, packet loss and throughput of an RSP's core network. These are the basic metrics that RSPs manage as they affect throughput of customer data and the speed of the product.

There are other non-network factors that will impact on speed and the customer's experience of the fixed broadband network service; i.e. customer hardware and home network (Wi-Fi) configurations, CPU and memory, the speed and capacity of servers on which websites and apps are hosted and customer management applications. We also note that RSPs such as ACN Pacific have no access to or visibility of various core network elements which also affect speed and other network performance measures.

Elementary network management and monitoring functionality makes use of SNMP traps to gather information from specific devices to graph such things as core link capacity. Latency and packet loss between endpoints are primarily measured using PING statistics. This monitoring is conducted with a view to ensuring that the core and edge pieces of an RSP's network do not contribute to, or cause, overall speed related issues for customers.

We also note that customers have the capability to test speed from a customer's site and to gather measurements relating to the speed and network performance of a broadband product. Many free speed test services, such as www.speedtest.net, are available to customers, and customers will often share their experiences with other customers via web forums, social media platforms and other information sharing means.

In addition, internet-based services such as Netflix measure speed and network performance of various RSPs' broadband products (Netflix Speed Index: <https://ispspeedindex.netflix.com/country/australia/>). This also provides valuable information to customers.

In summary, ACN Pacific's view is that customers have at their disposal a range of information and services which enable them to assess the products of various RSPs on the basis of speed (if that is important to them), without the need for further regulatory intervention. It is also to be noted that for many customers, speed is not a decisive issue. Other factors may be more important to them: price, quality of customer service and plan flexibility being some of them. For some customers, network performance measures other than speed may be more important (e.g., latency). There is no one-size-fits-all in either RSPs or customers.

2. When issues are detected through performance monitoring or in this context, what are the key measures available to improve network performance and therefore speed of service? What timeframes are needed to implement any such measures?

Apart from network link capacity issues, two key measures for monitoring network performance are packet loss and latency. Latency is a measure of delay in the transmitting and receiving of data and packet loss is where data packets are dropped. We note that different measures may be more or less important to different customers. Some customers may be very sensitive to latency, while other customers will be interested in network link capacity.

There are a number of factors that can affect latency and packet loss, therefore investigation is required to correctly identify and address any latency/packet loss issues. In general terms, packet loss is much more likely to affect a customer's speed than latency.

Timeframes allocated to capacity upgrades are driven by a range of factors. For example: capacity and agility of the infrastructure provider speed of growth of the customer base and funding and commercial constraints. A very important factor for RSPs, often not considered by third parties, is the cost of the upgrade (quite apart from the timeframe needed to develop and approve the business case for the upgrade). Upgrades are never free, and any such investment by an RSP must carefully weigh up the effect of the additional cost burden on (a) the RSP's ability to price its products affordably and competitively, and to continue to offer value-added services such as extended service and support hours, and (b) the RSP's profitability.

Normal upgrades (VLAN/AGVC speed upgrades) can take 10 days with unexpected issues (hardware, physical upgrades) taking up to 30 plus days to complete.

3. Does the move to next generation access networks provide opportunities for RSPs to better manage their networks and more accurately assess the service performance and speeds that they deliver in practice?

No. An RSP's visibility and control of conditions that lead to speed degradation is limited to the network elements under the direct control and management of the RSP. There are various network elements that an RSP has no access to or visibility of; therefore it is virtually impossible for an RSP to guarantee with any confidence a constant level of speed and service to an end user.

When providing stable speed-sensitive services to an end user, RSPs place a high reliance on the reliability, engagement and performance of third party technical resources, and upstream and downstream network infrastructure.

4. What information is available to RSPs to assist them in making accurate performance claims in their marketing materials and at point of sale?

In the case of NBN services, when making any performance claims, the supporting product documentation supplied by NBN Co with their standard service offerings is the only information referenced and supplied to the end user. The underlying SLA's associated with many of NBN Co's standard service plans contain detailed caveats on speed guarantees and strict prescriptions in relation to NBN Co service levels relating to escalation and investigation of speed issues.

In practice NBN Co guarantees and prescriptions generally fail to support or to meet the statements and claims made in NBN Co's product offerings.

We note that ACN Pacific does not make performance claims in our marketing materials. This is impossible, for the reasons stated above. Generally, however, ACN Pacific has chosen not to compete on the basis of network performance, but seeks to offer other benefits to our customers. Further, for the reasons stated in other answers, network performance, as perceived by customers, is dependent on a range of factors, most of which are outside the control of ACN Pacific, and each customer will have a different perception of network performance depending on their priorities, their home computer/network configuration, and the service they access over the internet.

5. Is information generated through network monitoring and diagnostics used by RSPs to inform speed claims made to consumers? If so, how?

No.

If and when speed tests show conflicting results, we work with the various network segment owners to identify the cause of the speed issue and develop a timely and appropriate resolution for the customer. This process can be extremely challenging and time consuming.

6. Is information on expected service performance available to RSPs when establishing a particular retail service? Is information on actual service performance available to RSPs shortly after service activation? How is this information provided to consumers or otherwise taken into account by RSPs when communicating with consumers?

Information on an NBN Co wholesale product is available, the standards being 12/1 25/5 50/30 100/40. The underlying terms and conditions associated with these NGN standards specify variance in actual speeds that are considered acceptable. Note that the variance to standard can be substantial (up to 50% less). In addition, note that this only relates to the line speed for the "last mile" connection.

With NBN Co test caveats exist that prescribe the time and day of a test. Where an issue is identified in a "peak traffic period" these caveats make it difficult for RSPs to press for remediation work to be carried out by the network provider (NBN Co). Post installation, because of the terms and caveats associated with NBN Co's own network operations, it can be extremely difficult for an RSP to accurately confirm in a timely manner the expected (or actual) service performance with the consumer.

The only information we receive on service performance is immediately after activation. We actively contact our customers to perform a speed test to ensure they are obtaining speeds which are consistent with others on the same access network/technology.

7. What arrangements can RSPs implement to minimise the impact where an individual service will not meet the represented retail product specification that is generally available to users of the service? Are the consumers of these services offered the opportunity to exit their contracts without penalty?

At ACN, if the NBN line speed sold is not achievable and we cannot find a resolution for our customer, we provide a caveat where we offer free downgrades of customer speed profiles. Where a resolution is not achievable with the customer we will waive any contract or early termination fees. If ADSL2 is sold to a customer, then that is what they receive. However, given the variables around ADSL speeds, we work on a case-by case basis with our ADSL customer's to resolve any speed issues they may experience.

Issue 2 – Presentation of speeds information to consumers

Questions

1. What are the impediments to RSPs making more meaningful speeds information available to consumers, including the speeds that the RSP's retail products support on fixed services during peak periods?

The biggest impediment is that the speed of a product is not fixed, and may vary from day-to-day and minute-to-minute. Any collection, collation, vetting and publication of precise data by an RSP will be out of date by the time it is made available. Further, as noted above, each customer will have a different experience of network performance depending on their home computer/network configuration and the services they access over the internet.

We also note that the additional resources requires to be employed by an RSP in making somewhat useful (if not meaningful) information available on a reasonably timely basis would of course involve additional expense, and affect RSPs ability to price their products affordably and competitively. For some RSPs, which compete on the basis of network performance, this may be considered a useful investment, but for others, it would simply affect pricing, or divert resources from other areas such as customer service.

Another impediment is that there is no independent standard test platform available for customers to test their service in a controlled manner.

Speedtest.net is a commonly used commercial product, but we note that it would be very easy to prioritize web traffic to the speedtest server and give false speed indications, especially during peak times. It would be just as easy to de-prioritize traffic from competitors to give a negative result.

2. Do RSPs consider they need additional information/support from access network owners/operators to effectively communicate broadband speed information to consumers?

The ability to measure speed does not depend on information from access network owner/operators. An RSP and each of its customers can measure speed at any time. However, we note that the biggest impediment to providing a quality end-to-end broadband service is that there is zero visibility of the capacity allocated from the customer's router to the handoff point of the RSP. This is out of the control of most RSPs, as are many other factors affecting network performance.

There is also a lack of understanding and transparency with regard to how different plans are allocated and policed, i.e.; where is the speed (12/1 or 25/5) specified and what technology/feature is implemented to control this if the peak is reached?

3. What aspects of the RSP service should be the basis of performance and speed claims? For instance, should RSP claims be limited to the service delivered into the premise (excluding in building networks operated by the end-user)? Should claims be based on the performance of actual end-user services and/or on network testing performed using domestic/international test servers?

RSP performance and speed claims should be made on the basis of the speed of the service delivered to the customer's premise or on any other basis so long as that basis is clearly disclosed. If an RSP chose (or indeed became required) to not make performance and speed claims, such performance and speed claims could be independently substantiated via an open, independently controlled and independently verified test process available to customers and to RSPs. This facility would: permit the RSP and the end-user to measure the end to end speed of their service; and be governed and operated separately from the influence and control of NBN/NGN/RSP/network providers.

Strict oversight and penalties for manipulating testing protocols should be prescribed and enforced.

4. How could impediments be overcome so that consumers will receive meaningful speeds information?

Again, there should be an independent test network established that is open and transparent.

In order to ensure there are no impediments to speed, the facility should have visibility of all NGN/NBN/RSP capacity planning and technology. The facility should also be funded for access to sophisticated tools, expertise and NMS systems to ensure that speed and speed test manipulation is not occurring at the end user, RSP or network level.

5. Could a standard product disclosure template or similar information tool assist RSPs to present information? If so, what sort of information should be included in the template so that it is comparable by consumers?

We believe implementation of such a template would greatly assist customers and RSPs. So that a realistic and trustworthy template can be developed, technical disclosure of the delivery and network capabilities of the infrastructure provider behind the service should be a required component of the template.

Note that currently we believe there to be a lack of visibility in relation to the NBN speed delivered to different customers. i.e.; the speeds delivered by NBN are inconsistent and vary wildly.

6. Which performance measures would be most appropriate for the provision of more accurate performance information to consumers? Should 'speed' remain the focus, or should the approach be broadened to include other measurable performance factors?

In addition to real time speed tests and visibility of area congestion and outages, performance measures should be broadened to include, latency, packet loss, meaningful congestion statistics and access to and visibility of historical test data. As the industry standards for broadband products are speed based, a reliable speed test methodology should remain the benchmark for performance.

7. What strategies could be adopted to ensure any changes to the way that RSPs present speeds information to consumer are implemented at the same time?

Our view is that a code should be established, similar to the Ofcom 2015 Voluntary Code of Practice for Broadband Speeds. The existing product offer and Critical Information Summary (CIS) templates should be updated to incorporate standardised speed descriptions and standards.

Issue 3 – Peak period demand

Questions

1. Do RSPs design and manage their networks and fixed services to deliver the same service performance and speeds during both peak and off peak periods? Does this differ by service/plan?

Peak period demand is taken into account when designing an RSP's network interconnects. Commercial inputs around balancing cost and revenue come into play when putting together an overall capacity plan and when determining trigger points for network capacity increases. Service performance and speed is a separate matter to the service and plan type offered by an RSP.

2. Do RSPs provide information to consumers about whether their services are likely to be impacted during peak periods? What representations are made to consumers in this regard?

We do not make any representations to our customers in this regard. From anecdotal experience, this information is only passed to individual consumers when the peak hour congestion is caused by factors outside the control of the RSP and the customer communication occurs on an issue by issue basis. It appears that some RSPs provide website updates that are supposed to show peak congestion and expected resolution times, however it is our view that the accuracy and reliability of the representations made in these website updates is questionable.

3. What tools are available to RSPs to monitor their services during peak periods? Do these tools and associated information provide a sound basis for RSPs to make reliable representations to consumers about the performance of their services during peak and off peak periods respectively?

There are a number of tools available to monitor and report on network performance. The tools are usually split into two categories :

a. Monitoring and reporting on capacity, throughput, latency and packet loss on network segments under the control of the RSP; and

b. Monitoring latency, throughput, and packet loss on the end-to-end network whilst taking into account segments that are (i) under the control of the RSP and (ii) not under the direct control of the RSP. This category of monitoring can point towards areas of congestion, however due to the lack of network provider transparency; the monitoring can be inconclusive and inefficient.

4. How do RSPs manage complaints and enquiries from consumers about peak speed problems?

Like any other technical issue, peak speed complaints and enquiries are logged, monitored and resolved by ACN Pacific on a case by case basis. Troubleshooting is performed to identify and resolve a customer's speed issue.

ACN Pacific can often take swift remedial action if the fault is within our control. If the issue is with our infrastructure provider, it is escalated promptly to the infrastructure provider for further investigation and feedback.

If an issue is identified as a capacity issue then it is escalated to the third party infrastructure provider and a time frame will be communicated advising as to when remedial action is scheduled to take place.

Issue 4 – Premium speed products

Questions

1. Is it possible for RSPs to distinguish traffic on their fixed networks to prioritise premium speed services or otherwise differentiate service levels by service/plan type, particularly during busy hours?

Yes, though there are policy challenges facilitating this end to end.

We submit that RSPs with their own infrastructure (end-to-end) should easily be able to design and maintain their networks to provide a tiered prioritisation model.

RSPs that rely on different external infrastructure providers to operate between the RSP and the customer would experience significant challenges when competing with these types of network prioritised products.

2. What tools do RSPs use to ensure consumers who sign up for premium speed services receive a higher speed as a consequence of paying for a more expensive service?

We offer a residential grade service and presently do not offer or supply premium/tiered speed services. We note that delivery of premium speeds would entail IP routing and the switching of premium traffic based on QOS and DSCP marking (to differentiate traffic into classes and treat the traffic accordingly); in order to clean traffic pipes and to differentiate traffic deployment of Deep Packet Inspection (DPI) would be considered advisable.

Configured speed profile checks are made when provisioning the customer's service. Post activation we make welcome calls to all of our customers and complete speed tests. These are the current tools that are used to ensure speeds are within acceptable ranges for new services.

3. Do RSPs have measures in place to ensure that consumers are not encouraged to take up more expensive services (to address network congestion problems on basic services) if the premium service will also be affected by network congestion problems?

There are no specific measures in place at this time.

Issue 5 – Prioritisation of network traffic

Questions

1. Do RSPs currently prioritise certain network traffic on fixed broadband services? If so, how is network prioritisation communicated to consumers?

It is very difficult for RSPs that operate without their own end-to-end infrastructure to prioritize traffic and to have this prioritisation honoured by the RSP's infrastructure provider.

As soon as prioritisation is passed to the infrastructure provider that sits between the RSP and the customer, the prioritisation request is usually disregarded by the provider and the service is set to the same priority as other traffic.

2. How do RSPs manage and monitor the performance of their services in respect of delivering prioritised applications and other applications respectively?

No specific comment. See our answer to 3.

3. Would there be any practical impediments to RSPs disclosing to consumers whether they prioritise traffic for certain applications? Is it possible for RSPs to disclose the resulting service quality experienced by users of prioritised applications and how this compares to service performance more generally?

We believe that existing industry strategies around traffic prioritisation are concerned with protecting core infrastructure rather than providing different customer plans.

To advertise and promote this strategy to the market would, in our view, challenge small to medium RSPs. RSPs would be forced to develop a range of plans that allowed customers to choose the traffic they would like prioritised and the traffic they want de-prioritised/dropped, in order to ameliorate this effect. Small to medium RSPs could only do this if the capability was supplied to them by the underlying carrier

4. Is information made available by applications service providers a reliable basis for consumers interested in those applications to make broadband purchase decisions more generally?

Application service providers often provide minimum specifications around bandwidth and latency for reliable access to their applications, however it is up to the consumer to select an RSP that they are confident will be able to consistently meet the service metrics necessary for the running of the ASP's application. It is open to ASPs, and within their capability, to measure and publish network performance per RSP as it affects their service to assist in consumer choice. This is already being done (e.g. Netflix Speed Index).

Issue 6 – Data intensive applications and services

Questions

1. How do RSPs currently plan for and present consumer information about new data intensive applications and services for fixed broadband services?

Generally RSPs are not aware of specific new data intensive applications and services until they hit the market.

2. How is service performance for new data intensive applications monitored?

RSPs monitor and maintain their networks; however there is no specific monitoring of service performance for new data intensive applications.

3. How quickly can RSPs respond to changes in demand when this places pressure on network capacity? How is information about this and any limitations on service performance best communicated to consumers, both upfront and during the life of a retail contract?

Not very: a great example of how this is done reactively is the sudden popularity of IPTV products such as Netflix; this was an unprepared driver of bandwidth and took all RSPs time (and significant investment) to catch up.

4. How do RSPs currently respond to complaints about short term capacity issues where these are related to data intensive applications? Are there any steps that could be taken to improve these practices for future events?

Any response is reactive and around the timelines of normal capacity management.

Issue 7 – Managing isolated cases of poor service performance

Questions

1. What thresholds would provide a reasonable basis for performance claims that RSPs use in their marketing materials for fixed broadband services?

In the case of ACN Pacific, these thresholds need to match the thresholds set by the underlying infrastructure provider. It is impossible for an RSP to provide better SLA than the underlying interconnection contract. In order to provide a level playing field there needs to be further investigation of wholesale vs retail product offerings.

On the other hand, RSPs should be free to choose to not make any performance claims, in which case implementing thresholds would be unnecessary and therefore irrelevant.

2. What measures could RSPs reasonably implement to minimise the impact on consumers should their service not meet the represented retail product specification?

ACN Pacific has already implemented a range of strategies, such as relevant and competitively priced product bundles, an enhanced customer service experience and continuous investment in our network. If a customer's service does not meet specification (whether that specification

includes speed claims or otherwise), ACN Pacific will continue to use its best endeavours to resolve any issues to the customer's satisfaction.

3. What factors should the ACCC consider in determining a level of response to individual instances of broadband services failing to meet the advertised level of performance?

The ACCC should perform its usual role in education and enforcement of the Australian Consumer Law. If an RSP is found to have engaged in misleading or deceptive conduct, then the usual enforcement action may be taken.