IT'S HOW WE CONNECT

16 December 2016

Mr Robert Wright
General Manager
Infrastructure Regulation Division
Australian Competition and Consumer Commission
Level 35, The Tower
360 Elizabeth Street
MELBOURNE VIC 3000

Email: Robert.Wright@accc.gov.au

Dear Mr Wright,

Re: ACCC's 2016 wholesale ADSL declaration inquiry

I refer to your letter dated 6 December 2016 requesting the provision of information about the products used to facilitate the transmission of declared Wholesale ADSL (WADSL) traffic between the point of interconnection (POI) and the point of presence (POP). This letter provides the information requested.

Telstra reiterates its support for the ACCC's draft decision that the current service description adequately captures the WADSL service.

Port and VLAN/AGVC charges for the WADSL service are regulated, and allow Telstra to recover the costs of carrying data between the IGR at the POI and the end user. In contrast, charges for the products that facilitate the transmission of WADSL traffic between the IGR at the POI and access seekers' POPs recover the costs of providing that functionality.

Optus' claim that the costs of the elements that supply the aggregation products are already captured within the regulated asset base in the fixed line service model (and should therefore not be charged for) is therefore incorrect.[1] Even where an access seeker's POP is co-located at the same address as the IGR, Telstra infrastructure (cabling and transmission equipment) is used to connect Telstra and the access seeker's equipment – the cost of which is recovered in prices for the aggregation products.

[c-i-c] This reflects that an anchoring of prices occurs, by virtue of the products being purchased by customers for a range of different purposes (i.e. not just for use with WADSL) – including on a standalone basis – in markets where there are multiple suppliers of comparable services.

There are several reasons why access seekers cannot self-supply (using their own or a third party's infrastructure) a backhaul access service or product to facilitate the transmission of traffic from the IGR to the access seeker's POP.

Firstly, it would hamper Telstra's ability to undertake load balancing, which ensures the cost-effective management of large volumes of traffic and that quality of service is not degraded by particular network elements being over-worked. Telstra frequently moves fibre links around on

[1] Optus, *Submission in response to ACCC Draft Decision Wholesale ADSL service declaration inquiry*, November 2016, pp. 5-6.

and between IGRs in order to balance their loads.

Secondly, access seekers using their own transmission equipment would require a dedicated port irrespective of the amount of AGVC/VLAN capacity they purchased. In contrast, with Telstra Wholesale Business Grade Ethernet (TWBGE), the port is shared and only the amount of aggregation capacity needed is purchased. Hence, TWBGE allows for more efficient port utilisation. Capacity constraints (e.g. capped IGRs, queuing for ports) could arise were access seekers able to self-supply their own transmission equipment, even though total capacity across the ports might not be fully utilised.

Finally, Telstra would no longer be able to assure the quality of service received by end users. This is because there would be complications in detecting the source of faults, and other carriers' technicians are subject to different training standards to Telstra technicians, creating risks to service continuity when they are accessing Telstra equipment. [c-i-c]

If, in spite of these impacts on the efficient use and operation of the network, access seekers were hypothetically able to self-supply their own transmission equipment, changes to both current network architecture and processes would need to be made. New products and technical specifications would need to be created and tested, and processes for training, quality assurance, fault rectification and [c-i-c] developed and implemented. These arrangements would take a significant amount of time to develop and implement, and add significant overheads to the costs of supplying WADSL which may ultimately not be recoverable given the service's finite lifetime due to the nbn roll-out.

In addition to our response to the ACCC's questions about the WADSL service description, we provide the following information discussed at our meeting of 30 November 2016 in relation to the availability of capacity in the 289 ESAs for which Telstra has requested an exemption from declaration. The information demonstrates that there is sufficient capacity within the 289 ESAs for access seekers to continue to invest in ULL and DSLAM-based service provision.

[c-i-c]

If further information or clarification is required, please contact Justine Bond on (02) 9866 0269 or justine.bond@team.telstra.com.

Yours sincerely,

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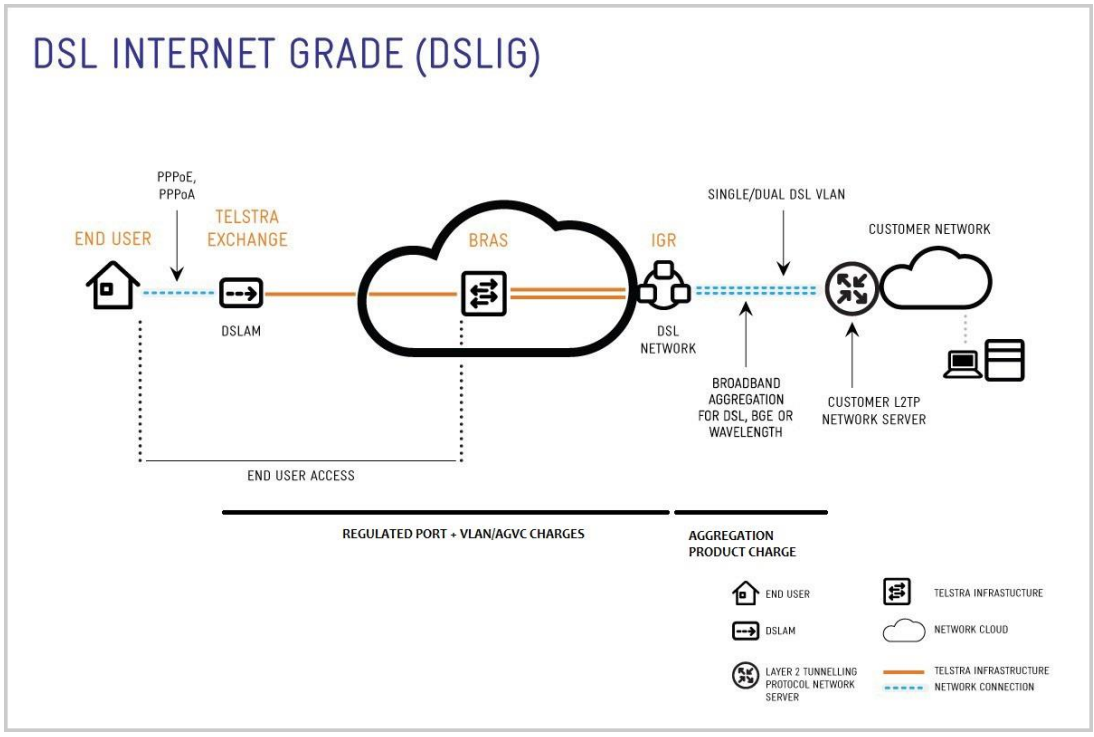
1. *The ACCC has asked Telstra where it considers the relevant POI used to supply the declared wholesale ADSL service is located. Specifically the ACCC has asked whether Telstra considers the POI to be at the IGR, and on which side of the IGR it is located.*

Telstra considers the relevant POI used to supply the declared WADSL service to be located at the IGR, on the external side (i.e. the right hand side of the IGR in the below diagram).

In line with this, the charges applied for the carriage of data to the left of the IGR are regulated – namely, both the regulated port charge of $22.14 per port per month in Zone 1 and $26.87 per port per month in Zones 2 and 3; and the regulated VLAN/AGVC charge of $29.27 per Mbps per month These charges recover the costs of supplying the WADSL service, from the end user to the IGR.

In contrast, charges applied for access aggregation services (e.g. the TWBGE product) recover the costs of the carriage of data from the IGR to the access seeker's POP. (Information about the level of these charges is included in our response to question 7.) In this regard, Optus' claim in its submission to the ACCC's Draft Decision that the costs of the elements that supply the aggregation products are already captured within the regulated asset base in the fixed line service model (and should therefore not be charged for) is incorrect.[2]



2. *The ACCC has asked Telstra to confirm whether an access seeker can self-supply (using their own or a third party's infrastructure) a backhaul access service or product to facilitate the transmission of traffic from the point of interconnection (POI) to the access seeker's point of presence (POP).*

Telstra confirms that access seekers cannot self-supply (using their own or a third party's infrastructure) a backhaul access service or product to facilitate the transmission of traffic from the IGR to the access seeker's POP.

[2] Optus, *Submission in response to ACCC Draft Decision Wholesale ADSL service declaration inquiry*, November 2016, pp. 5-6.

The ACCC has asked for an explanation of the technical (or other) limitations that prevent an access seeker from self-supplying their own transmission equipment between the POI and the POP.

There are several issues that prevent access seekers from self-supplying their own transmission equipment between the IGR and the POP.

Firstly, fibre links are frequently moved around on and between IGRs in order to balance their loads. Load balancing ensures the cost-effective management of large volumes of traffic and that quality of service is not degraded by particular network elements being over-worked. Were third parties to have transmission equipment connected to the IGRs, this would hamper Telstra's ability to undertake load balancing.

Secondly, comparing self-supply with TWBGE, if a customer wanted to utilise their own transmission equipment, they would require a dedicated port irrespective of the amount of AGVC/VLAN capacity they purchased (as is the case for the Wavelength aggregation product). In contrast, with TWBGE, the port is shared and only the amount of aggregation capacity needed to support the AGVC/VLAN capacity needs to be purchased. Hence, TWBGE allows for more efficient utilisation of a port. Port capacity constraints (e.g. capped IGRs, queuing for ports) could arise were access seekers able to self-supply their own transmission equipment between the IGR and the POP (even though total capacity across the ports might not be fully utilised).

Finally, there are concerns about Telstra's ability to assure the quality of service received by end users if access seekers self-supply their own transmission equipment between the IGR and the POP. This is because there would be complications in detecting the source of faults, due to the demarcation point between Telstra and the access seeker's network being unclear in Telstra's systems. Moving a demarcation point to a fibre distribution point/panel would mean the handover point would occur part way through an optical connection between the IGR and either an access seeker owned dark fibre asset or access seeker transmission equipment. Issues would arise in terms of what the permitted points in the network for testing are, and whether a Telstra field technician is permitted to unplug access seekers' infrastructure to facilitate detection of the part of the network causing the fault.

In contrast, where Telstra provides the aggregation product, Telstra can conduct testing at all points in the network between the end user and the access seeker's POP to detect what is causing any fault.

Relatedly, non-Telstra carriers do not always require the same standards as Telstra in terms of technicians' training. Allowing these parties to access the IGR would mean that Telstra could no longer maintain its current high levels of security and service levels. For Telstra to have confidence in allowing other parties to access the IGR, it would need to develop training procedures and require that onboarding took place. This would add significant overheads to the costs of supplying WADSL.

[c-i-c]

2a. *The ACCC has asked, if access seekers purchasing wholesale ADSL were to be able to self-supply their own transmission equipment, what would be required on Telstra's part to allow this arrangement to take place?*

If access seekers were hypothetically able to self-supply their own transmission equipment, changes to both current network architecture and processes would need to be made. As examples, new products and technical specifications would need to be created and tested, and processes for training, quality assurance, fault rectification and [c-i-c] developed and

implemented. These arrangements would take a significant amount of time to develop and implement, and at a high cost which may ultimately not be recoverable given the transition of services to the nbn.

2b. *The ACCC has asked, if access seekers purchasing wholesale ADSL were to be able to self-supply their own transmission equipment, what Telstra systems and/or network elements would be used to facilitate this self-supply. (For example, would connection occur at Telstra's IGR? Which access seeker-operated system does the connection take place at?) The ACCC has asked that this outline be provided using the DSL Internet Grade diagram (https://www.telstrawholesale.com.au/products/broadband/adsl.html).*

Telstra has never turned its mind to this question because it has never been considered necessary or useful. However, we anticipate it would be costly and complex. If the ACCC wishes to pursue this question further, we suggest a meeting for us to be able to better understand what the ACCC is proposing, so that we can respond exactly.

3. *The ACCC has asked about the number of points of interconnection (with respect to the declared wholesale ADSL service) that are located at the same physical address (that is, co-located) as access seeker points of presence.*

[c-i-c]

3a. *The ACCC has asked for any further information Telstra considers relevant in relation to these instances (if any) of co-location and how it impacts the use of network infrastructure? Are there any significant differences or implications of co-location?*

One of the benefits of the current access aggregation product constructs is that Telstra is able to transport traffic between the IGR and POPs regardless of whether they are co-located. Whether an IGR and a POP are co-located depends on where the access seeker chooses to locate its POP, as opposed to decisions made by Telstra.

Telstra notes that even where IGRs and POPs are co-located, Telstra infrastructure (cabling and transmission equipment) is used to connect the IGR and the POP (albeit the cabling is of a shorter distance than if the POP is not co-located).

3b. *The ACCC has asked whether access seekers who acquire the declared WADSL service and also acquire the TWBGE/WWS/Broadband Aggregation product reflect instances where the POI is not co-located with their POP?*

TWBGE/WWS/Broadband Aggregation products are acquired irrespective of whether the IGR is co-located with an access seeker's POP. [c-i-c]

Further, as noted, even where there is co-location, Telstra infrastructure is still used in connecting the IGR to the POP.

4. *The ACCC has asked which other services (if any) are purchased by access seekers for use with the TWBGE, WWS and/or Broadband Aggregation products, and whether this purchase is mandatory or discretionary?*

TWBGE and WWS are purchased by customers for a range of different purposes, including on a standalone basis. These purposes include for:

- Connecting an end user's branch offices to its head office, or end user premises to a customer's POP (typical end users include retail stores, small and medium businesses and large corporations)

- Connecting POPs with data centre sites, or with Telstra equipment buildings where customers have equipment (e.g. DSLAMs)
- Backhaul of traffic from NBN POIs
- Transporting mobile network traffic between mobile base stations, hub sites and centralised Radio Network Controller sites.

Purchase of TWBGE and WWS in these contexts is discretionary, in that there are multiple suppliers of comparable services.

The Broadband Aggregation product is purchased for use with Telstra's nbn wholesale services. Purchase of the Broadband Aggregation product is discretionary, in that there are multiple suppliers of wholesale nbn services.

5. The ACCC has asked for an outline and comparison of the following products, at the same level of detail as that already provided in relation to the TWBGE product by Telstra in its submission to the draft decision:

- *Telstra Wholesale Ethernet (TWE) with reference to differences with the TWBGE product that Telstra has previously submitted information on*
- *Broadband Aggregation product*
- *TWBGE*

Telstra notes that the Telstra Wholesale Ethernet (TWE) and TWBGE are the same product (that is, TWBGE was formerly called TWE), hence its response in this section focusses on the Broadband Aggregation product.

Broadband Aggregation enables customers to aggregate DSL and NBN end user traffic from the POI to their POP, where the nbn services are purchased through Telstra Wholesale. Access seekers purchase sufficient capacity to enable them to supply a retail service to their end customers – this access capacity carries the access seeker's nbn and DSL traffic from Telstra's POI to their POP where it hits their network. The product allows the access seeker to aggregate all their nbn and WADSL traffic to a single POP (e.g. nationally aggregating all states back to a single POP) or multiple POPs (e.g. to a POP in each state).

Broadband Aggregation is available in a range of access capacities, allowing access seekers to choose the most appropriate capacity to match their forecast demand (SIO volume), usage allocation per end user (or intended per user peak throughput) and network redundancy requirements. Access seekers can therefore influence the end user experience through decisions made around the amount of access capacity acquired, redundancy required, and the way in which the access seeker throttles traffic on an end user by end user basis. In Telstra Wholesale's experience, an access seeker will usually aim to have sufficient capacity at any point in time to cope with increased traffic generated by SIO growth for the next 2-3 months. Access seeker decisions on capacity increases are monitored and updated by access seekers regularly.

Where access seekers purchase Broadband Aggregation access with redundancy the capacity of both links is measured when accounting for a customer's total capacity purchased. However, access seekers using Broadband Aggregation are not required to pay for access capacity that exceeds the total of their peak bandwidth requirements.

More information about the Broadband Aggregation product is available on the Telstra Wholesale website at:

- https://www.telstrawholesale.com.au/content/dam/tw/products/broadband/ADSL/Documents/adsl_factsheet.pdf

- http://www.telstrawholesale.com.au/products/broadband/adsl/index.htm and
- https://www.telstrawholesale.com.au/products/broadband/broadband-angle.html

6. Please explain, in more detail than has been provided to date, the technical and other constraints that prevent DTCS being used to provide a similar functionality to the TWBGE, WWS and Broadband Aggregation products?

The TWBGE, Broadband Aggregation and DTCS products are supplied using different networks, with the networks that supply TWBGE and Broadband Aggregation being the networks that interconnect with the WADSL network. These networks are used for WADSL traffic because they have been found to be more cost-effective in aggregating traffic than the DTCS network.

If WADSL traffic were to be transported over the DTCS network, investments in upgrading capacity on that network would be required. Telstra is expecting demand for capacity to peak in 2019 (given the NBN roll-out) — hence it would be unlikely that Telstra would be able to recover the cost of the capacity upgrades prior to demand for WADSL decreasing.

In addition, it would take at least 12 months to develop DTCS equivalent versions of the TWBGE and Broadband Aggregation products, by which time, demand for the newly created products would be beginning to decline.

The DTCS could be used to provide similar functionality to the WWS. [c-i-c]

7. The ACCC has requested pricing information for the following products, on a Mbps per customer, per month basis:

- *TWBGE*
- *WWS*
- *Broadband Aggregation*
- *DTCS, and*
- *any other alternative services.*

The pricing for the access service used for WADSL traffic is highly variable. There are a number of factors which influence the price including:

- Access service used (TWBGE, WWS, Broadband Aggregation)
- Access seeker POP location relative to the Telstra IGR
- Bandwidth acquired
- Service term (typically a longer term results in a discount)
- Access seeker protection / redundancy requirements
- Commercial negotiation

These prices make up a very small proportion of the total costs borne by access seekers in delivering an ADSL service. As noted, the prices for these services recover the costs of the carriage of data from the IGR to the access seeker's POP.

In terms of providing this information on a Mbps per customer basis, we are constrained by confidentiality of our customer contracts which prohibit the disclosure of information without consent. The table below therefore compares the *list* price of TWBGE and WWS access

services. [c-i-c]

Mbps per month pricing for the DTCS is available using the ACCC's DTCS pricing calculator: https://www.accc.gov.au/regulated-infrastructure/communications/transmission-services-facilities-access/domestic-transmission-capacity-service-final-access-determination-inquiry-2014/final-decision