



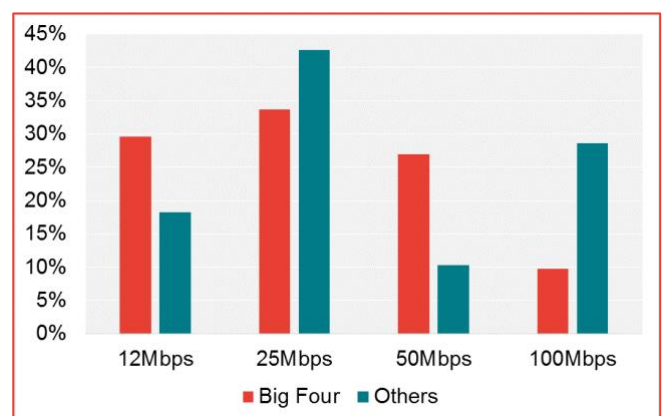
The latest edition of the [ACCC NBN Wholesale Market Indicators Report](#) is thought-provoking. While the focus is often on the headline average bandwidth (CVC), a deeper look shows the challenges for small retailers in competing on the NBN.

### What's new?

In this edition, the list of retailer service providers (RSPs) has been expanded beyond the “big four” of Telstra, Optus, Vocus and TPG. It now includes Aussie Broadband, MyRepublic and Australian Private Networks. Aussie Broadband and MyRepublic appear to be emphasising higher speed offerings – the 100Mbps and 250Mbps plans.

Bandwidth bought by retailers, measured as the average bandwidth (or “CVC”) capacity per connection, again rose. However, the change is trivial in comparison to last quarter’s massive increase owing to the December 2017 pricing model change. On average, across the NBN, there is now 1.55Mbps of average capacity per connection.

**Figure 1: Composition of connections: Big Four (Telstra, Optus, TPG, Vocus) vs others**



Source for all figures in this bulletin: ACCC Wholesale Market Indicators Report 31 March 2018 (published 10 May 2018)



### Points of interconnection

The real interest in the data comes from the more detailed breakdown for each of the points of interconnection with the NBN (Pols).

The NBN serves to provide “last-mile” connectivity, providing the connection between Pols and customer premises. To serve customers, RSPs only need connections at Pols; NBN Co takes care of the last mile. There are 121 points of interconnect; to provide national service an RSP would obtain connectivity to each of these 121 Pols.

By the end of March 2018, all 121 Pols had at least five access seeker groups acquiring services directly from NBN Co. At least six groups were connected at 120 of the Pols, and 95 Pols had at least seven groups acquiring services.

### CVC pricing effects

A complicating factor in the connection between NBN and the RSPs is the [CVC pricing construct](#). Under the CVC construct, NBN Co effectively uses the Pol as the basis for charging RSPs for bandwidth. Therefore, traffic flow from NBN to the RSP is limited by how much CVC capacity the RSP purchases for users in the service area connected at each Pol.

Ideally, the RSP would purchase the maximum bandwidth in order to offer their customers the fastest connections. However, this would be very expensive. So a retailer’s purchase of CVC tries to balance affordability for customers connected at that Pol with meeting their typical traffic demand; however, this is easier said than done.

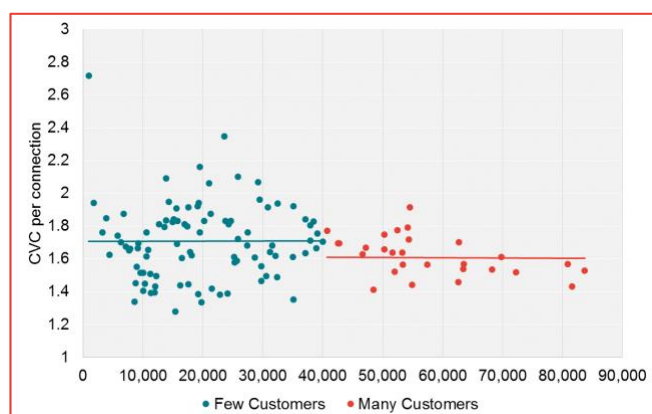
While typical traffic demands are obviously important, RSPs must also account for the variability of traffic (Netflix at 7.00pm, anyone?), especially considering strict

oversight by the ACCC to ensure that advertised speeds can be met.

A key determinant of the variability of traffic is likely to be the number of connections. If there are many connections, the variability of the average traffic demand of each customer will typically be low, due to the [law of large numbers](#). So the RSP will not need as much headroom above typical traffic demands to provide consistent high quality service.

With very few customers, traffic variability increases, and so too risks of adverse performance. This raises issues when claims are made regarding typical speeds. If an RSP has a small number of customers connected at a Pol, just 2 or 3 customers attempting to download at max speeds at the same time might lead to congestion and service degradation. As a consequence, if an RSP has few customers in a Pol it must provide *greater* CVC capacity per customer to provide the same quality of service - the same “typical” speed - to avoid falling short of [ACCC advertising guidance](#).

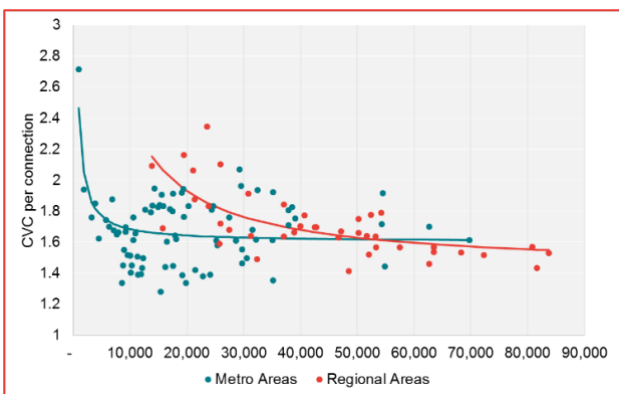
**Figure 2: Average CVC for Pols with fewer than 40,000 customers, compared to Pols with more than 40,000 customers**



Back to the Wholesale Report we see that, as would be expected, as the number of connections increases more capacity is purchased.

As predicted, and as shown in Figures 2 and 3, there is a trend towards less CVC per customer as the total number of connections increases. More connections in total means more connections per RSP, which allows each RSP to purchase less CVC capacity per customer and still maintain a quality service.

**Figure 3: Number of connections in a Pol compared to CVC capacity per connection (with trendline)**



This is an indication of scale effects. RSPs with a small market share would need to purchase more capacity per customer than an RSP with a high market share, all else equal. As CVC costs are considerable, these economies of scale lead to increased pressure on the margins of small retailers. This is especially so among the lower speed tier offerings, where the big four are engaged in a “[land grab](#)” price war to capture market share as consumers transition to the NBN. Perhaps this may justify a shift towards the greener pastures of high speed plans for these smaller RSPs. As noted above, this appears to be the strategy adopted by Aussie Broadband and MyRepublic.

What is less expected from the Report is the differences in the average CVC capacity per connection across the different Pols. For regional Pols, there is a higher average CVC per customer than in metropolitan areas. These regional Pols also tend to have more connected customers, perhaps due to the NBN focussing on expanding rural service in the early stages of the rollout. What is driving the differences in demand patterns that lead to these additional capacity requirements? It is hard to definitively say. It might be as simple as another Netflix effect – perhaps fewer entertainment options or poorer TV reception in rural areas means people use Netflix or other streaming services for entertainment and therefore require higher, more consistent levels of service from their RSP.

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