NBN Demand Forecasts

The price elasticity of demand is a critical aspect of NBN take-up. It should help explain why the maximum price scenario provided to the ACCC as a confidential Attachment A on 15th February leads to lowers revenues than the 2012-2015 corporate plan scenario.

Direct access to both scenarios might have revealed how the different price paths lead to[1]:

- *Fewer subscribers to the NBN (primarily due to wireless-only substitution);*
- *Lower average access speeds (as end users take up more entry level and lower speed services than they would otherwise have done);*
- *Lower average data usage (as only smaller data quotas are affordable)*

Although I was unable to get such access[2], I believed it would be unnecessary when the ACCC made a follow up request on 15th March:

1. *Please explain how NBN Co has determined its demand forecasts under each scenario and any assumptions used – including any assumptions about how demand for different products changes in response to changes in the price of those products. Please explain any differences between the scenarios.*

However, the information NBN Co supplied on 20th March is inadequate. In my view, NBN Co. relies on extrapolations and adjustments with no clear price-demand response modelled. That is, there are no assumptions about elasticities for take-up and usage.

Forecast Methodology

We are directed to pages 114-132 of the 2011-13 Corporate Plan to understand the forecasting methodology.

It is not clear how the distribution of users across AVC tiers is derived to get Exhibits 9.12, 9.13 and 9.24. As there are many voice-only users on copper, the high proportion on 12/1 is probably correct. I would not describe these as being low price elasticity (Exhibit 9.10). Rather, I would expect that a significant share of defections to wireless in the maximum pricing scenario come from the 12/1 segment; exhibiting elasticity.

[1] P2, NBN Co. letter to ACCC, 15th February.
[2] My intention was to infer the elasticities by a comparison of the two scenarios provided in Attachment A. There is no "error term" because NBN Co. will have used some algorithm – you find it or you don't.

To me, it seems that take-up rates across AVC tiers are guesstimates and the forecasts of average data usage and average speeds (section 9.6.2) are extrapolations with no clear linkage between increased speed and increases usage.

In my view, NBN Co. did not consider price elasticities when it was asked to provide the maximum price scenario. The first three steps to generate this scenario described in the letter of 20th March are confusing. It seems to me:

1. This step reasonably assumes increased defection to wireless only; without explicitly using any elasticity assumption. In fact, we are not even told what the price increases are relative to the Plan – it says only that nominal prices increase at CPI-1.5% after June 2017.

   Average speed in each Plan year is derived from the weights underpinning Exhibit 9-24. This shows the average speed increasing from 32Mbps in 2012 to 162Mbps by 2025 (my guess for 2028 looking at 2028 is 184Mbps).

   The most important driver in the maximum price scenario appears to be the increased leakage to wireless-only premises ("*zero AVC speed*"). We are not told which speed tiers the defections (zero AVC premises) come from. I would guess the 12/1 segment, as it will have a large share of voice-only customers. This leads to "*a modest increase in average AVC speed amongst (those) remaining*" (p3, letter 20th March). The two dot points in step 1 both relate to the defections (the combined effect is not balanced).

   The meaning of "*average AVC ARPU per Mbps*" is unclear. If it is AVC revenue each year divided by average speed, then there will be an inverse relationship with migration to higher speeds. A 100Mbps AVC does not cost 4 times more than a 25Mbps AVC. So, if defections increase average speed, AVC revenue per Mbps will be less.

   This step uses neither elasticity assumptions nor is "*based on the inverse relationship*" just discussed. It seems that it simply changes Exhibits 9.12, 9.13 and 9.24 due to defections to wireless; with the determination of the amount and distribution across AVCs a mystery.

2. This step appears to apply the same ratio of usage (CVC revenue each) to average speed observed in the Plan to the revised average speed from step 1 above. Step 1 was only about AVC take-up. Step 2 makes no attempt to allow for reduced usage due to higher prices of CVCs flowing through to retail prices of monthly data allowances – and so there is no use of elasticity assumptions.

3. This step seems redundant in the case of demand for AVC tiers, since this was determined in step 1. It also contradicts step 1 because the distribution of tiers between 12/1 and the rest will not be the same as the Plan.

The methodology for the maximum price scenario is very difficult to follow. It appears to make some ad-hoc changes to the corporate plan where only the defection to wireless exhibits an undefined price and demand response.

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