Option 6: Assessing the revenue impact of the "Traffic Model"

In July 2014 NBN Co. produced a consultation paper on 5 pricing constructs. The Traffic Model described in [Entry level pricing for fixed broadband](#) was not among them. It is Option 6.

The "Traffic" revenue model bestows the highest available speed to stimulate usage. It has two main access products: an entry level "Starter" service charged at $10 pm plus $3/GB and a Standard service charged at $38 pm plus $0.08/GB[1]. The break-even point is 9.6 GB pm.

The main differences between the Traffic and current NBN C0. revenue models are shown below.

Table 1: Differences between Models

Parameter	NBN Speed/Capacity Model	Traffic Model
Speed	Rationed by AVC pricing and cannot be guaranteed	Unconstrained (best effort)and may lead to highest actual speed globally
Adoption - % Households	Lowest AVC (12/1) at $24 pm deters adoption of NBN	Lower entry price at $10 encourages adoption (at unconstrained speed)
Usage (Gigabytes)	CVC discriminates against small ISPs	Charging $/GB similar to other utilities
ISP differentiation	Visible headline speed (if allowed by ACCC) and invisible throttling (CVC contention choices)	Contention determined outside the NBN access network. ISPs begin to look like electricity distributors
Technology fit	Only ideal for FTTH and services under end-to-end control of ISP	Ideal for multi-technology network with variation in speeds and diverse services from 3rd Parties

Approach:

All the 12/1 users in the Corporate Plan[2] are assumed to be on the Starter service[3]. We segment these between "Low Use" and those with "Normal Use". The difference is that Normal users consume data at 19% pa – the same as in the Corporate Plan for the period 2012-2028[4] - while Low users having little or no interest in data are assumed to consume data at 10% pa. The combined share of Low and Normal users on the Starter service is the same as in the Corporate Plan for the 12/1 AVC across the period.

---

[1] The different usage fees require traffic to be measured for Starter and Standard lines (individual customers). This can be done with the VLAN already used by the NBN. The Starter and Standard fees used in this paper are calibrated to support the retail broadband market based on September 2013 retail prices.

[2] The most current Corporate Plan at the time of writing is that for 2012-2015. It is used to compare the revenue models.

[3] Exhibit 8-4 in the Corp Plan has been converted to numbers at NBN Revenue Models /Figure-1/rows 55+

[4] NBN Revenue Models /trends/row 8. The model is available on request.

We assume that data usage is 5GB pm and 10 GB pm for Low and Normal users respectively on the Starter service in 2012[5]. At 10% pa Low users consumption grows to 23 GB pm by 2028; which means that the Low users are well below the threshold of 40 GB pm that would induce them to migrate to the Standard service. We assume that 18% of Starter service are Normal users with data growing at 19% pa so they all migrate[6] to the Standard service by 2020.

All other users (i.e. above 12/1) are Standard users from 2012 with data growing at 19% pa (the average in the Corporate Plan).

All the calculations are shown in the workbook "NBN Revenue Models". The resulting revenues are compared with the Corporate Plan below. Even though the only increase in access revenues comes from only the 18% of Normal users migrating to the Standard service and usage is the same or less (10% for Low users) than the 19% pa in the Corporate Plan, the revenue path is similar and the Traffic model revenue is actually higher by the end of the period.

Figure 1: Revenues at same growth as Corp Plan
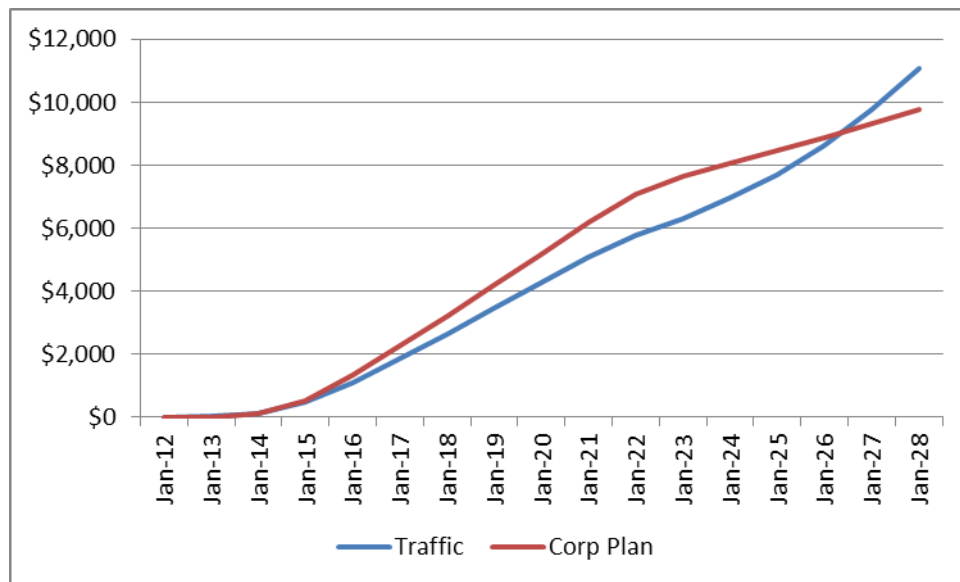
Higher usage scenario:

The Traffic Model will lead to higher average growth in usage than the 19% assumed in the Corporate Plan. We do not have hard data on the relationship between speed and usage. So, we now assume 30% growth for the Traffic model, except for Low users who remain on 10% pa growth.

Changing the growth assumption at cell E23 brings forward the shift of Normal users to the Standard service by about 2 years[7]. So the relative shares of Low use and Normal use customers at rows 16 and 17 are adjusted. All other assumptions remain the same.

---

[5] To get the average 30 GB pm in 2012 given these assumptions about users on the Starter service, all other users must consume 62 GB pm in 2012. See NBN Revenue Models /Figure-1/cell G28.
[6] Note that NBN's customers are ISPs who will shift to save money; even if they do not pass on the benefits to their end user customers.
[7] See NBN Revenue Models/Figure-2/row 23

The resulting revenue comparisons are shown below. The difference is due to the relatively higher growth in usage stimulated by the unconstrained speeds allowed by the Traffic model. In practice, the $/GB fee would be reduced to prevent the company exceeding its allowed return on capital.

Figure 2: Higher growth scenario
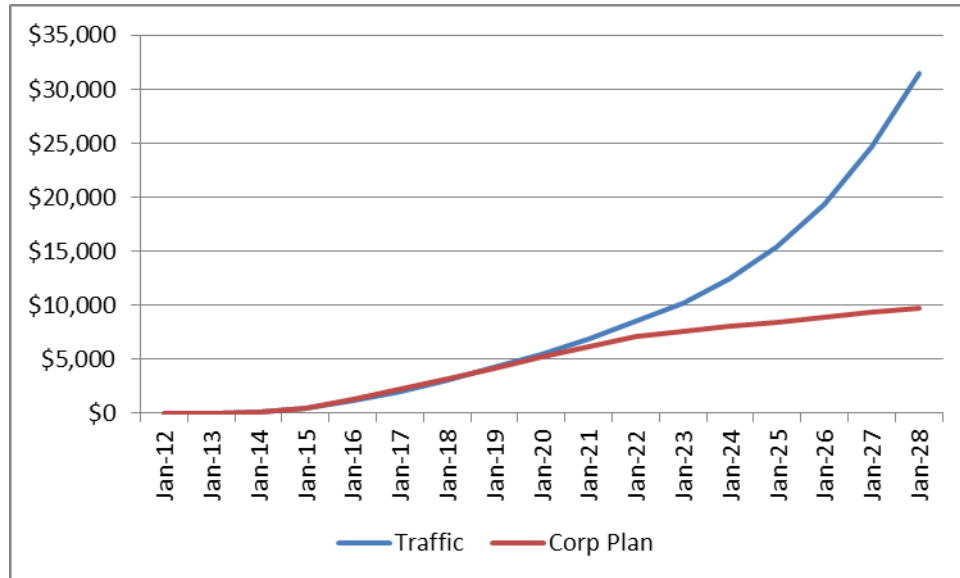
Higher growth with regulated pricing:

Suppose that the revenue path in the Corporate Plan is the allowed revenue trajectory under regulation. Keeping the Starter and Standard access fees unchanged and keeping the same break-even GB pm usage for the transition from the Starter to Standard service[8], the following reductions in usage fees bring the Traffic revenues into line with the Corporate Plan while maintaining the 9.6 GB pm breakeven point for voluntary migration to the Standard service.

Table 2: Usage fees, cents/GB

	2012	2019	2021	2023	2024	2025	2026	2027	2028
Starter low use fee	300	297	297	296	295	294	294	294	293
Starter normal use fee	8	5	4.5	3.6	3	2.4	1.9	1.5	1.2

With 30% pa usage growth for Normal users, the $/GB falls 85% by 2028 to match Corporate Plan revenues. The effect of cutting usage fees to match the Corporate Plan revenue path is shown below.

---

[8] See NBN Revenue Models /Figure-3/cell H46

Figure 3: Higher growth with falling usage fees
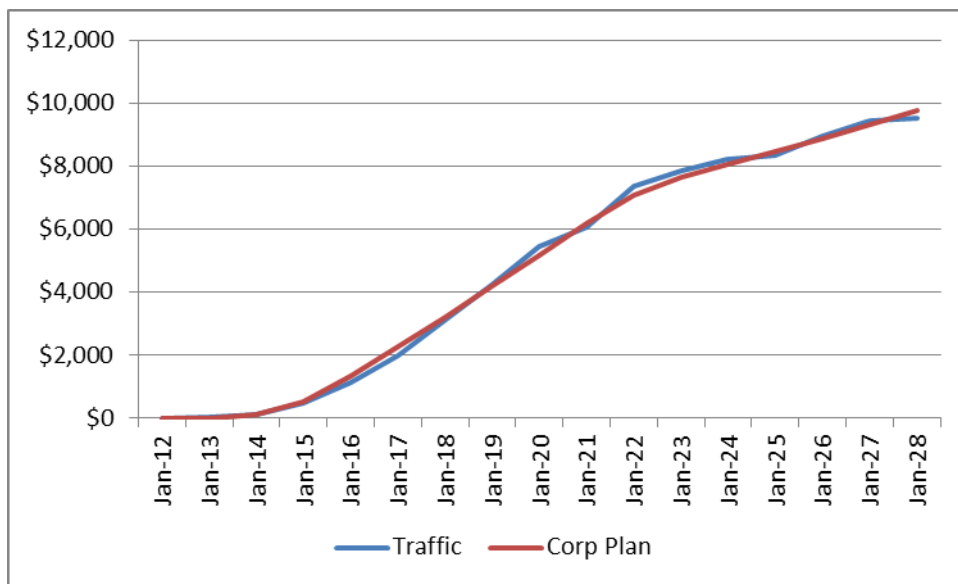
The average download in 2028 in the Corporate Plan is 517 GB pm[9] which implies that CVC pricing is halved from \$20/Mbps to around \$9/Mbps[10]. By 2028, the average download is 2,764 GB pm in the Traffic Model scenario[11]. Not all of the difference will be due to "girls, games and gambling": ubiquitous truly fast broadband will stimulate innovation in many productive areas.

The average speed in 2028 assumed in the Corporate Plan is about 177 Mbps[12] which means that access prices will be virtually unchanged[13] with over 40% of users still on less than 50 Mbps. The Traffic model does not charge for speed: with the access bottleneck removed (and no artificial constraints in the access network like CVCs), delivered speeds will depend upon removing bottlenecks in other parts of the supply chain.

Summary and Selling Points

1. The "traffic model" reflects the utility of broadband and real world experience – customers upgrade to download more.
2. With traffic growth, the unit fee per GB will decrease (to comply with regulated returns).
3. The rhetoric about headline speeds can be discarded along with the baggage of speed tier pricing.
4. Usage pricing fits well with all broadband platforms. Telstra relies on gigabyte pricing to drive additional revenues from the LTE network – the monthly price is the same as for 3G.
5. Australia will achieve the highest possible global speed rankings given the technology choices.

In summary, the Traffic Model is a better match with real consumer expectations and policy goals than NBN Co.'s current revenue model.

---

[9] See NBN Revenue Models /trends/row 8
[10] See Exhibit 8-9 in the Corporate Plan
[11] This is not as high as the CISCO forecast in NBN Revenue Models/trends/row 6
[12] See NBN Revenue Models /trends/row 13
[13] See Exhibit 8-8 in the Corporate Plan

John de Ridder

August 2014