



ATUG Focus Forum

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Comments on the
NBN Reference Model
produced by the
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ICT Professionals Shaping Our Future



The NBN Reference Model

- ◆ Clear, versatile and well defined
- ◆ Has the features expected of a network reference architecture:
 - **Interoperability** for required uses (services, roles)
 - **Functionality** (in generic terms)
 - **Close alignment with international standards** (to ensure lack of proprietary capture by vendors)
- ◆ What such a reference model does **not** provide:
 - Specifications of the applications supported
 - Specification of end-to-end performance
 - Pricing (of course)



Some high level issues

- ◆ What will be the NBN's wholesale service exactly?
- ◆ What will be its guaranteed QoS?
- ◆ NBN and national wholesale pricing?
- ◆ Will the NBN serve IPTV providers with **network neutrality** in respect to the suppliers of content?
- ◆ How can transparency be achieved in the NBN's business practices?
- ◆ Should an industry Ombudsman be created to deal with the NBN's retail performance issues?



What will be the NBN's wholesale service?

At least three components:

- ◆ Implementation service
- ◆ Transmission capability: point-to-point with guaranteed QoS re performance: bandwidth, outages, signal/noise ratio, jitter etc
- ◆ Maintenance service

Layer 2 only or Layer 3 (addressing) as well?

- ◆ Is there economic scope for more than one or two Layer 3 wholesale providers of e.g. the telephony USO? If not, better for NBNCo to provide this underlying service ('Routing Gateway') rather than have the floor price inflated for all retail BB services.



What will be the guaranteed QoS?

- ◆ Essential that the NBN offers **minimum guaranteed service levels** for all service modes (implementation, transmission, maintenance), in order to provide a basis on which retail service providers can offer QoS to their end customers, especially business customers.
- ◆ The realities of service bottlenecks in international links can be allowed for in service agreements

NBN and national wholesale pricing?



- ◆ Costs vary with geography & density
 - Sparse population - high 'backhaul' costs
 - Low population densities
 - **Uniform wholesale pricing desirable for social equity**
- ◆ Elements of the solution
 - Multiple platforms : FTTP for 90%, advanced wireless and satellite for 10%: **A new digital divide?**
 - Multiple POIs
 - Backhaul network
- ◆ Should NBN Co sponsor a national 'backhaul network' between multiple POIs?

Will the NBN offer network neutrality?



- ◆ Network Neutrality (NN) means no differentiation in terms of price for performance that depends upon the *content source* for transmission through the NBN
- ◆ NN is essential for pro-competition reasons in general – allowing new market entrants to compete with big players having deep pockets.
- ◆ In particular, NN will be important to allow competition in IPTV services (versus the established networks)
- ◆ One implication of NN is that the NBN must provide a *basic transmission QoS* capable of supporting synchronous streaming services such as IPTV



Transparency in the NBN business

- ◆ Since NBNCo is a government-owned public company **providing essential infrastructure in the public interest**, its policy decisions (both at the Board level and at the implementation level) need to be transparent to both its retailer customers and to end users.
- ◆ Transparency at the Board level should include publishing all decisions made after each Board meeting (ICANN is a good model)
- ◆ Transparency at the implementation level can include review of conformity with Board and governmental policy decisions by an Industry Ombudsman

Is a new industry Ombudsman needed?



- ◆ The current TIO powers relate to end user complaints and not to complaints by ISPs and other retailer customers of a carrier such as the NBN.
- ◆ To maximise public confidence in the NBN, and to minimise the need for litigation, it is desirable that an Industry Ombudsman Office be created with powers to investigate and mediate on complaints by NBN customers on NBN performance.
- ◆ After all, **the NBN is likely to have thousands of customers**, the majority being 'minnows' compared to the major corporate players.



The high level issues - RECAP

- ◆ What will be the NBN's wholesale service exactly?
 - *Layer 2 alone seems inadequate*
- ◆ What will be its guaranteed QoS?
- ◆ NBN and national wholesale pricing?
- ◆ Will the NBN serve IPTV providers with **network neutrality** in respect to the suppliers of content?
- ◆ How can transparency be achieved in the NBN's business practices? *This is not a normal company.*
- ◆ Should an industry Ombudsman be created to deal with the NBN's retail performance issues?

Congrats to the Comms Alliance



- ◆ The NBN Reference Model appears to have the functionality and versatility needed to support the wide range of IP-based BB services required in the national interest for:
 - e-Health apps, online education, multimedia content delivery, management of the environment, community participation, telework.
- ◆ It is reassuring that the Model recognizes the need for ‘QoS enabled broadband’ to be integral to the NBN’s fundamental capabilities