



Juniper®
NETWORKS

**Juniper Networks
Submission to the
Senate Select Committee on the
National Broadband Network**



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Introduction

Terms of Reference

This submission to the Australian Senate Select Committee on the National Broadband network addresses part (2.b), (2.c) & (2.f) of the Select Committee's Terms of Reference.

Australia's NBN

Juniper Networks is a leading telecommunication vendor supplying networking equipment to the world's largest service providers. We actively participate in the development of industry standardisation to promote interoperability in broadband networks, that is, to promote openness in the network architecture, where network operators are free to choose their suppliers based on their merits. This perspective, knowledge and widespread industry engagement provides Juniper with insight to look ahead at ways the wholesale networks can be an enabler for innovated retail services. Juniper is also aware of the necessity for the technical details of wholesale products to be defined in an iterative approach, of design-model-price, to allow the regulated wholesale network to meet the markets needs once built.

Juniper Networks has been motivated to make this submission based on our observations and involvement in the debate and activities surrounding the NBN. The suggestions in this submission were relevant to the government's previous NBN plan, are relevant to the current NBN plan, and are in fact relevant to any declared wholesale network that will be required to provide "bitstream" type services as input to access seekers.

The Australian debate and open consultation has so far been orientated around the macro features of the industry: the regulatory regime, the virtues of the various forms of separation, the award of the NBN contract and the like. This is also true of the current active consultation on the NBN Regulatory Reform for 21st Century Broadband. It is our view that to achieve the goals of the NBN stakeholders and public, it is necessary to commence consultation focused on the micro detail immediately. We believe that for the project to be a success it is necessary to determine the needs of communications providers as prospective customers of the NBN, determine the capabilities possible of such a wholesale network, gather input from international experience, and solicit input from companies that may have an interest in business leveraging the NBN. Besides the benefit of the technical requirements as output from such a process, the positive outcome of building industry consensus should not be overlooked.

Juniper Networks strongly believes in shifting the NBN debate and focus from access speeds and technologies towards defining wholesale products through industry consultation, this will deliver the Australian government the following benefits:

- Galvanise the Australian broadband industry to work together to mitigate collective issues.
- Encourage future beneficiaries of the network to engage in the dialogue and begin to consider new business models for leveraging the NBN infrastructure.
- Provide a process in which other government initiatives can participate, such as e-Health, e-Learning and Smart Grids
- Deliver a Wholesale product portfolio that from the outset has industry agreement.
- Develop a robust platform upon which a tiered model for wholesale pricing can be determined and a process in which the product requirements and cost can be traded against one another.
- Provide a platform to engage business groups, wireless carriers, consumer groups, public sector and have them provide objective and tangible input into the definition of future services to be delivered.

- Provide a standardised set of wholesale products that will be available across the country, potentially enabling parts of the NBN build to be sub-contracted to different operators as well as providing consistency across the 90% FTTH coverage area as well as the remaining 10% to be served by wireless.

International Experience

There are a number of international case studies that can potentially provide useful lessons for Australia in terms of defining a set of wholesale products through industry consultation. In our opinion, Ofcom in the UK provide the best example with respect to both the consultation process and the output from the consultation in the form of wholesale product technical requirements.

Ofcom Ethernet Active Line Access (ALA)

Ofcom has been working on the development of “superfast” broadband in the UK. As a part of this process passive and active wholesale access measures have been defined. Although in the UK passive access is recognised as the ideal, it is understood that it will not be viable in all scenarios. Therefore active wholesale access, based on “bitstream” pipes has been defined, this work is known as Ethernet Active Line Access (ALA). It is Ethernet ALA that is relevant to the Australian NBN.

Further information can be found at: <http://www.ofcom.org.uk/telecoms/discussnga/eala/>

Consultation Process

In particular the process that has been run by Ofcom is worthy of note. The consultation has been open and consultative bringing together the UK industry to identify the issues and work through to the solution.

The consultation process has involved written submissions and 6 seminars over 12 months. The seminars were informative, and provided the means for an iterative process, allowing complex issues be addressed and resolved over a period of time rather in a single request-response window.

The involvement of the industry at large in this process has gone a long way to develop consensus around the basic set of wholesale products. This creates a solution for the regulator and the government, where success is less ambiguous.

Output: Technical Product Requirements

A good measure of the consultation process is the output. In the case of Ethernet ALA the set of technical requirements that have been produced provide a sound base for a set products wholesale providers can offer the market.

The requirements enable multiple providers to offer wholesale products, potentially in different geographies, which are consistent. This in turn enables retail communications providers to take inputs from multiple different wholesale providers and deliver consistent services to their customers.

These technical requirements lead to a flexible service offering that fosters communications, business, and social innovation.

Proposal for Australia

Industry Consultation

As indicated earlier in this submission and supported with the Ofcom precedent, Juniper Networks strongly recommends an extensive consultation process on the wholesale product definitions as soon as possible.

This should be a consultation process with the following key characteristics:

Open:

- The consultation process should be open to all current & potential future stakeholders.
- Potential stakeholders should be invited and encouraged to attend for informative purposes and to express their interests for wholesale products that may lead to the development of new products to support new retail services and potentially new business models.

Well Defined Process:

- The process should be extensive, making use of seminars and workshops.
- The process should be established and communicated at the start, aiming to focus on the objective, however, remaining flexible.
- The process should allow a problem to be addressed in more than one response, gaining input from the participants and allowing a response to be developed by the group.

Clear Objectives:

- The primary objective should be technical requirements for a set of wholesale products.
- The consideration of new products and business models should be a feature, explicitly seeking to evaluate the needs beyond the current set of established communications providers.
- The technical requirements should be developed with a view of being used to model the costs of the network and the resulting wholesale product prices.

Wholesale Product Possibilities

In an effort to provide an indication of the work to be done in this area consider the current broadband market. The wholesale products in use today (ULL/LSS/Telstra L2TP) tightly couple a subscriber with a retail communications provider. That is to say, a consumer or business may choose one, and only one ISP for all their data services. This requires the chosen communications provider to be the one stop shop for all services a consumer or business would require now and until the point they are willing to change providers, a long and difficult process in itself. This basic level of choice can be seen in the diagram below.



Should the wholesale product definition be allowed to merely just happen, as an afterthought or behind closed doors, it is quite possible this model of wholesale will continue.

Contrast this with advances in active wholesale where it is beneficial to allow a consumer or business to access simultaneously multiple communications service providers. The Ofcom Ethernet ALA specification includes requirements to enable this capability. The greater diversity this enables can be seen below.



To consider an analogy, we can compare the broadband market to the consumer fish market. The Sydney fish markets represent a massive choice available to consumers from a large number of dynamic sellers. Consumers can establish long standing relationships with the sellers buying their fish from one in particular regularly, however, they can also easily take advantage of the fresh catch from a new seller or purchase something exotic from a niche provider. This is the world the NBN can enable for broadband, the NBN being the market connecting retailers with consumers, with a high degree of choice, and with support for one-stop-shops as well as niche providers.

The benefits and attractiveness of this type of open approach can already been seen in the mobile market, where Apple with put in place an open model with the iPhone AppStore, where any application developer can build applications and sell them to any iPhone user.

There are a number of methods can be used to achieve these capabilities in the NBN, with trade offs to be considered particular to the Australian market. This example demonstrates the need for industry debate to tackle this issue and all the other issues with established and new communications providers.

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