



**A Submission
on
NBN Regulatory Issues**

**Rosemary Sinclair
Managing Director
25 June 2008**

Executive Summary

ATUG is responding to the Minister's request for submissions on regulatory issues associated with the National Broadband Network. The Government has said it is prepared to consider changes to existing telecommunications regulations to facilitate the roll-out of the National Broadband Network.

ATUG presents this submission in the context of the Government recognising the critical importance of future telecommunications regulatory settings, including ongoing consumer safeguards, **to ensure the best outcomes for all Australians and the competitiveness of the economy.**

From ATUG's perspective, this submission provides the appropriate policy framework for Australia's NBN and proposes a number of regulatory settings to facilitate the roll-out of the NBN.

ATUG's submission on regulatory issues is based on Member Forums and Conference discussions and on our assessment of global developments and trends.

A summary of key regulatory proposals is set out below.

A detailed outline of the basis for and background to these proposals is outlined in the section, Summary of ATUG Member Discussion on NBN Regulatory Issues, June 2008.

ATUG's central concerns are:

- Clear Policy Objectives
- Affordability
- End User Choice
- Wholesale Service Equivalence
- Good Customer Experience
- Ubiquity

ATUG's key suggestions are

- The **Policy** objectives for the NBN regulatory framework must include being in the Long-term Interests of End Users and be complemented by an effectively competitive services market place.
- **Affordability** is key to take-up. Regulation must support the cost effective building of the NBN as well as recognise that effective competition is the strongest tool for delivering affordable prices. An entry level "safety-net" package should also be developed.
- **Choice** – network topology is central to competition and choice. Only designs that promote competition should be accepted. When infrastructure competition is not possible, services competition based on open access and service equivalence at a wholesale level must be ensured.

- **Equivalence** in wholesale services together with effective services competition can only be assured by establishing:
 - clear separation between wholesale and retail units and
 - a new pro active facilitating and overseeing independent body, NBN Australia, with the task of implementing the Open Access and Equivalence Frameworks for Australia's NBN as well as establishing appropriate consumer safeguards.
- **Customer Experience** in the NBN environment must be carefully managed to ensure successful end user outcomes. The initial provision of comparable information to customers, service selection, connection, operational and repair experiences as well as changing from one provider to another must be of the highest quality. Service quality and security standards must be established at a high level to reflect the key role of the NBN in the lives of all Australians.
- **Ubiquity** – all Australians must be connected to the NBN. Ubiquity is not only about network availability but also about affordability and accessibility. When all Australians are connected to the NBN, the real potential of this capability for productivity, growth and innovation will be open to end users in all parts of the economy and community, and in all regions of Australia.

ATUG's submission is presented in the following sections:

- Summary of ATUG Member Discussions on the NBN Regulatory Issues in June 2008
- The Commonwealth's Objectives for the NBN.
- ATUG Member Discussions during 2007
- ATUG Future Forums 2007-2008
- Global Developments – Network Design
- Global Developments – Equivalence
- ATUG Cross Connect meetings on the NBN RFP, April 2008
- ATUG Member Discussions on the NBN Regulatory Issues, June 2008, Discussion Paper

ATUG seeks an assurance from Government that Australia's regulatory framework for telecommunications will be adjusted and amended through comprehensive public consultation and discussion among all stakeholders. NBN policy, legislation and regulation must be developed with the well proven "long-term interests of end users" objective paramount and undiluted by any commercial pressures.

The Government has been clear in the NBN RFP on its objectives and evaluation criteria for bidders. ATUG supports these objectives and criteria. ATUG has welcomed opportunities to provide input to the Expert Panel Guidelines process and to make a submission to Government about NBN Regulatory Issues. ATUG would welcome an opportunity to make further comment on any regulatory proposals to facilitate the roll-out of the NBN.

ATUG sees the NBN as an exciting opportunity for all Australians to reap the benefits of next generation broadband platforms. The migration to this new environment must be managed so that there is no detriment to customers and no lessening of competition.

The significance of next generation, competitively priced and delivered broadband to the emergence of an information based economy is understood by all ATUG members, those running communications services for Australian business and government agencies and those supporting them with expertise, advice and services.

Feedback from ATUG members throughout Australia is that the NBN provides an important opportunity to address the structure of the telecommunications market in Australia, in the long-term interests of end users.

ATUG supports the Government's call for bidders to "facilitate competition ...through open access arrangements that allow all service providers access to the network on equivalent terms."

It is important that the Government insist on compliance with the bid terms that:

Proponents should submit their proposed arrangements for ensuring open access to the NBN, including measures or models to ensure that access is provided on equivalent price and non-price terms and conditions. **If a Proponent proposes to supply both wholesale and retail services it should demonstrate what structural measures or models it proposes be put in place and maintained to prevent inappropriate self-preferential treatment and ensure that effective open access is achieved** on the terms required by the Commonwealth.

Whether Australia's NBN is built using Government funds or not, where infrastructure competition is not viable, services based competition must be delivered through effective structural arrangements, more certain and timely regulatory processes, and independent oversight.

Member Discussions on the NBN Regulatory Issues in June 2008

Member Discussion Groups were held in Melbourne, Adelaide, Sydney, Brisbane and Perth. The outcomes and suggestions from these discussions are listed below against each of ATUG's central concerns.

Policy Objective for the NBN Regulatory Framework

The "long-term interests of end users" as defined in the Telecommunications Act and in the Trade Practices Act should remain the core objective for telecommunications policy and regulation in Australia. Commercially focused pressures from network operators or service providers must not overshadow the end user objective.

Affordability – The National Broadband Network will only achieve the right outcomes for Australia if end users can afford to pay for connection and services.

- Competition is seen as the key mechanism to ensure affordability. Competition will need to be "designed in" at the earliest stages of NBN design and planning. This may well require Government intervention.
- Prices for end users should reflect reasonable rates of return, with the ACCC under the Trade Practices Act, continuing to have a role in access price supervision, even if there is commercial agreement, so as to ensure prices are reasonable. Access prices should reflect real costs of construction and reasonable returns for private investors and for government.
- Regulation may be needed to encourage the co-ordinated use of existing fibre assets, access to ducts, poles, pits and other physical plant, access to rights of way and other means to ensure efficient construction of the NBN. Carrier immunities and powers from State and Local Government town planning law may have to be reinstated to enable timely and affordable services.
- Co-ordination through Local Government and with property developers will be needed to ensure new estates are connected to the NBN with affordable services available for end users. Uniform planning and environment guidelines should be developed to be applied by Local Councils.
- NBN should support State Government and regional community initiatives to develop local BB Networks which would then connect to the national NBN.
- ATUG would propose regulatory support for an affordable "entry level" product to ensure all Australians can access the NBN. The product requirements for Australian Broadband Guarantee suppliers

could be used as a model although income disparity between metro and regional areas will need to be taken into account.

If competition is not possible or does not develop on the NBN, it may be possible that regulated retail prices would have to be considered until competition emerges.

Choice

- Competition remains a key outcome for ATUG. Where possible, infrastructure competition is preferred. Where this is not possible service competition must be ensured.
- There should be no less competition over existing platforms than there is now. Past access declarations and price determinations should be carried forward and reviewed on the current basis of developing competition.
- While policy settings should encourage the development of multiple fibre operators, it is likely that many parts of Australia will only support investment in one fibre network. These monopoly network elements are likely to be built by a number of different operators. All of the ATUG proposals about open access arrangements apply to any fibre network builder, including existing fibre assets when they become part of the NBN.
- Network design is key to ensuring the possibility of service based competition over fibre networks where only one network is economically efficient. Legislation requiring an NBN to be designed for competition is essential.
- Legislation is needed to ensure Open Access arrangements are in place, as required in the RFP. These arrangements must ensure equivalence of access prices and non-price terms and conditions as well as arrangements to allow access seekers to differentiate their service offerings to customers.
- Legislation is needed to support structural methods or models to prevent inappropriate self-preferential treatment where an operator is supplying both wholesale and retail services.
- Obligations, Structures and Systems must be established to ensure Wholesale Service Equivalence where service based competition applies.
- Independent oversight of Wholesale Service Equivalence Obligations must be provided with public reporting
- ATUG prefers access arrangements for the NBN to be supported through the Trade Practices Act to avoid legal battles of interpretation. The ACCC should have access pricing powers for the NBN under the provisions of Part XIC and anti-competitive

- conduct powers under Part XIB. The powers under s46 of the Trade Practices Act are not considered strong enough to ensure open access of the NBN.
- Access pricing processes for the NBN need to be much more timely and certain than access pricing process for existing fixed network services. This may mean appeal rights are truncated for a period. It may mean that the ACCC is given a power to amend undertakings where they are unreasonable. It may also mean expedited arbitration hearings.
- An independent body should be given the role of ensuring Equivalence is implemented in a timely way. Regulatory responsibilities should stay with ACMA and the ACCC but an implementation body is needed based on facilitation and mediation culture, rather than on the anti-competitive conduct provisions of the Trade Practices Act.

This new body (NBN Australia) would go beyond developing “industry rules and codes” to the successful practical implementation of Wholesale Service Equivalence arrangements. Regulators may need observer status.

- Open Access to content services will be an important feature of the NBN for end users and will an important economic driver for investors. The roles of the ACCC and ACMA as regulators of content services (competition on the one hand, standards on the other) may need updating.

Equivalence Implementation and Oversight – NBN Australia

ATUG sees the increased level of disputes, the increased use of legal process and the resulting delayed outcomes as evidence that industry processes are not working.

The Trade Practices Act reflects a policy and regulatory philosophy (negotiate, arbitrate, litigate) seemingly suitable in 1997 but self-evidently not workable in 2008.

Successful implementation of the NBN requires more use of a “facilitate, mediate, tolerate” culture than legal process alone will achieve. However, strong incentives have to be put in place to make NBN Australia an effective industry-led body focused on good, commercial outcomes for end users and industry players. The role of the existing formal regulators, ACCC and ACMA and the Minister in providing such incentives will be important.

The migration task associated with the roll-out and transfer of I broadband users to the NBN is a huge project requiring commitment over many years. The implementation of processes to support an effective wholesale market is a task requiring a degree of industry co-operation which has not been seen for some years.

The concept of NBN Australia as a pro active, interventionist, specific purpose, timely facilitator/regulator with very strong powers is strongly supported by ATUG members. ATUG Members do not want to see the disharmony and dispute environment which has been a feature of the sector for many years applied in the NBN environment.

The purpose of NBN Australia should be defined clearly as a Mediator and Dispute Resolution Centre with the legislative authority to issue binding resolutions to relevant parties.

ATUG would see as essential a role for end users in the governance of NBN Australia.

NBN Customer Experience

End users need comprehensive and accurate information regarding the service characteristics as broadband becomes more integral to working and living. Customer service and switching processes for broadband services need to be updated. Migration plans for NBN implementation need to take account of end user needs at the beginning and not require Ministerial intervention.

NBN Service Framework

End users will be heavily dependent on NBN services. High reliability and high quality infrastructure and maintenance must be provided. It is essential to clearly specify all of the appropriate service characteristics offered by the NBN including reliability and availability and restoration times and provide a strong monitoring and compliance regime. Minimum aggregation ratios of 10:1 or less for consumer and 5:1 for small business should apply. End users should have 80% of their speed for 80% of the time.

A High Quality NBN

The NBN design should aim to improve the performance and security of NBN services beyond the current “best endeavours” basis. If the NBN is to be used to “transform” education, health care, business practice, government service delivery, communications and entertainment it is essential that the NBN offers the highest reliability and quality of service. The target should be 99.99% reliability and repairs times well within existing CSG standards. Existing customer safeguards should be transferred to the NBN.

Clear and high quality construction standards must be developed and complied with and strong monitoring and compliance arrangements are required, including “last metre” cabling practices and cabler accreditation.

High quality infrastructure documentation recording the location of all cables in a standardised format must be established and maintained. Underground NBN infrastructure must be effectively 'identified' to mitigate against inadvertent damage.

The codes of practice to address construction and installation practices should be developed by Communications Alliance and registered with and compliance monitored by the Australia Communications and Media Authority. This should cover both underground and above ground construction technologies, as well as placement of "low impact" masts for wireless last mile connections.

Customer Migration

There should be no detriment to customers when migration to the NBN occurs eg contract terms, plan periods, access to services etc.

Customers need to be informed about plans for migration to the NBN with sufficient time and options to make fit for purpose choices. The many lessons learned from the CDMA shut-down should be applied to ensuring a more satisfactory experience for NBN migration e.g., effective and appropriate equipment, accessibility options, affordable entry services, staff training, customer information programs. Many of these activities could be managed through NBN Australia.

Legislation should require the establishment of an Industry Code of Practice to set out rules and processes for the fair and reasonable transfer of a customer from one provider to another provider. Effective customer transfer practices are key to effective market competition.

Customer Information

Legislation should require the establishment of a "Framework" for a minimum set of standardised customer focused data describing the characteristics of a particular service and the data rate performance delivery standards. Customers need clarity on what data rates WILL be delivered by NBN services rather than what data rates MIGHT be delivered. The Australian Broadband Guarantee program speed testing measures may provide a model.

Compliance

Legislation must require all industry participants to enter into a formal legal agreement with the appropriate Industry Regulators to comply with applicable Industry Rules and Codes of Practice.

Ubiquity of Australia's NBN

The real benefit of the NBN will not be achieved unless ALL Australians can be connected. The transformation of business, government and community services and activities that could be possible with Next Generation Broadband can only be achieved with ubiquitous coverage.

ATUG would like to see the 98% figure translated into more practical terms, such as "all towns with over 100 people" should be connected to the NBN.

Regulation should focus Government funds on non-commercial and underserved areas, in conjunction with recommendations from the Regional Telecommunications Inquiry Review Committee every 3 years. This approach would accelerate and extend NBN access and should reduce the "problem" of cross-subsidies.

The issue of backhaul costs was discussed in regard to uniform pricing for NBN services. In the absence of competitive backhaul markets, access pricing for backhaul may need to be regulated to ensure delivery of affordable NBN services in all regions. Regulated prices should reflect fair returns for investors.

The USO should be extended to include broadband but by way of a Government backed Guarantee rather than an industry obligation. The Guarantee should be an Australian Communications Guarantee including Voice* and Broadband, where Voice* means Voice and Voice Equivalence. Explicit Government funding for the Guarantee is preferable.

Spectrum should be made available for broadband in regional and remote areas to ensure access to NBN services in a timely and cost effective way for the 2% or more of Australians for whom fibre based solutions are not practical in the medium term.

Funding via continuation of the ABG program will be need to be provided to ensure 100% broadband coverage until NBN services become available

Essential services such as 000 calls, free to air TV should be made available through the NBN.

The Commonwealth's Objectives for the NBN.

ATUG believes that any regulatory changes to facilitate the roll-out of the NBN must take account of the Government's objectives outlined at clause 1.3 of the Request for Proposals to roll-out and operate a National Broadband Network for Australia (dcon/08/18):

The Commonwealth's objectives for the NBN project are to establish a national broadband network that:

1. covers 98 per cent of Australian homes and businesses;
2. is able to offer broadband services with a minimum 12 Mbps dedicated downlink transmission speed over each connection provided to a premises;
3. supports symmetric applications such as high-definition video-conferencing;
4. is able to support high quality voice, data and video services;
5. uses fibre-to-the-node or fibre-to-the-premises network architecture;
6. enables uniform retail prices on a national basis;
7. is rolled out and made operational progressively over five years from the date of execution of a contract between the Commonwealth and successful Proponent;
8. continues to promote the long-term interests of end-users;
9. has sufficient capacity to meet current and foreseeable demand and has a specified upgrade path within clear timeframes, consistent with international trends;
10. facilitates competition through open access arrangements that ensure equivalence of price and non-price terms and conditions, and provide scope for access seekers to differentiate their product offerings;
11. enables low access prices that reflect underlying costs while allowing Proponents to earn a rate of return on their investment commensurate with the risk of the project;
12. provides benefits to consumers by providing choice to run applications, use services and connect devices at affordable prices;

13. provides the Commonwealth with a return on its investment of up to \$4.7 billion;
14. is compatible with the Government's related Fibre Connections to Schools initiative;
15. meets Government requirements for the protection of Australia's critical infrastructure;
16. is consistent with national security, e-security and e-safety policy objectives including compliance with laws relating to law enforcement assistance and emergency call services;
17. is consistent with Australia's international obligations; and
18. facilitates opportunities for Australian and New Zealand small and medium enterprises (SMEs) to provide goods and services to the project.

ATUG Member Discussions during 2007

ATUG has been discussing specific issues surrounding the deployment of next generation broadband in Australia with members since early 2007, with focus on four key issues. ATUG has also been discussing these issues through INTUG (the International Telecommunications Users Group) to understand developments at a global level which may have relevance to Australia.

The background comments below provide a context for ATUG's suggested approaches to regulatory issues associated with the NBN roll-out. The following is from a report to ATUG members in December 2007:

Fibre to the Node

Discussions in early 2007 between the ACCC and Telstra stalled over the cross subsidy for regional services to fund the Universal Service Obligation which in Telstra's view is not adequately funded by industry. Telstra sought \$13.63 per month to cover the cross subsidy. The ACCC was prepared to allow \$1.77 per month in the access price for competitors. Funding the USO/regional services has been a key feature of Telstra's regulatory activity recently – including its position on ULL pricing. The quoted wholesale price of \$85 per month is arrived at by calculating existing margin returns rather than assessing true costs. This tendency to monopoly rather than competitive pricing is the reason a new FTTN service would have to be subject to price regulation. The debate needs to be broadened to Fibre to the Premises and the regulatory framework adopted or adapted will need to ensure affordable services are delivered to end users

Functional Separation

Around the world regulation is increasingly focused on key bottlenecks using less but more targeted regulatory tools. One of these tools is Functional Separation which allows for investment certainty for all players while promoting continued competition. Functional separation allows regulators to intervene in persistent bottleneck markets where non-discriminatory behaviour cannot be ensured by other remedies. Functional separation has spurred investment in unbundled access lines in the UK with continued increases in market valuation for BT. It is clear that market size in Australia must be taken into account in return on investment and pricing calculations. In the 1990's ATUG's strong preference was for separated Network and Service Companies. In 2008 Functional Separation provides the tool to achieve this outcome in the new era of significant network upgrade to fibre.

Operational Separation

The Australian model was introduced in 2005, as part of the T3 sale legislation, on the basis of the Minister accepting Telstra's Operational Separation Plan and its sub components of Price Equivalence, Service Quality, Information Security, Customer Responsiveness, Information Security (to be published). The ACCC has published its Retail Pricing Protocol to advise how it assesses potentially anti-competitive behaviour in telecommunications markets, and its views on the concept of 'price equivalence' which is an important element of the operational

separation of Telstra. Consultation with industry and end users was via submissions to Telstra, an inadequate process from ATUG's perspective. The 2005 Operational Separation Framework was slated for review in 2008. In ATUG's view, Australia's Operational Separation model is ineffective. It is not subject to any public scrutiny which could provide evidence of accountability and information to end users that the communications market is effectively competitive. The level of industry disputes and legal actions leads end users to conclude the market is not working effectively under the 2005 Operational Separation Framework.

Broadband Speeds

Certainty in regard to broadband speed is an emerging issue for end users as applications become more viable and relevant e.g., Voice over IP. ATUG's policy is all Australian users should have affordable, multi-megabit symmetrical broadband access. Industry developments in the last months of 2006 which saw increased speeds on offer more broadly were welcome. Also of interest is the ACCC's position that excessive claims of speed by network service providers can be misleading in a Trade Practices Act sense. To enable informed choice by end users, suppliers need to delineate the whole range of parameters that dictate the actual likely speeds that customers will obtain for fixed or mobile broadband services. It is not enough for service providers to make 'blanket claims' that customers will get speeds 'up to' a certain threshold when significant limitations apply to the attainment of those speeds. This issue is on the radar for regulators in many countries.

Long-term interests of end users

2007 has seen continued effort to change the core objective of telecommunications policy from the "long-term interests of end users" to the narrower interests of shareholders and investors. This debate will continue through 2008 and will be a key focus of the review of telecommunications policy in 2008/2009. The ACCC's regulatory role is to strike a balance between ensuring that investors (taking account of their risks) are not discouraged from undertaking new efficient investment while at the same time ensuring that consumers obtain the benefit of competition. ATUG will continue to emphasise that the core objective of communications policy and regulation must be the long-term interests of end users.

Broadband Prices

One of the challenges in the deployment of Australia's NBN is that the price for end users must encourage take-up (to achieve the transformative and productivity outcomes) and at the same time provide a reasonable return for investors, including the Government. The costs of fibre deployment in Australia can be reduced through various policy and regulatory decisions but the returns for network owners are closely linked to take-up (which can be forced by cutting access to copper services) and retail price per user (which may not be competitive).

A presentation at ATUG 2008 by Dr Taylor Reynolds from the OECD discussed a number of indicators of price (and speed) for Australia - <http://www.atug.com.au/ATUG2008/Presentations/TaylorReynolds.pdf>

Australia's end user still pay a premium for communications services.

The presentation makes the point voice still accounts for 79% of total telecom revenues in all OECD countries, with mobile revenues alone accounting for 40%. Australia has the third highest mobile prices among OECD countries in 2005 up from our position three years earlier. High user of fixed voice services in Australia pay **75% more** than their OECD average counterparts. Mobile high end users pay **20% more**. On average users in Australia pay 10% more than the average OECD end user. In ATUG's view this price premium indicates that prices in Australia are not yet at competitive levels. ATUG is concerned that this price disparity must not be reflected in prices for fibre based voice and data services. The discussion on Rates of Return for fibre networks should not reflect historical, monopoly margins.

Broadband Prices (USD, PPP)

OECD Broadband prices are reducing – DSL by 19%, cable by 16%. Broadband prices in Australia ranges from \$21.66 up to \$108.45 compared to for example The Netherlands with \$7.74 up to \$87.88, Canada \$21.96 up to \$97.63 or Korea at \$30.56 up to \$57.29.

Comparing average monthly prices for a monthly subscription overall, OECD is \$49.31, Australia \$52.26.

Comparing monthly average price per advertised Mbit per second, OECD overall is \$17.85 and Australia is \$21.34

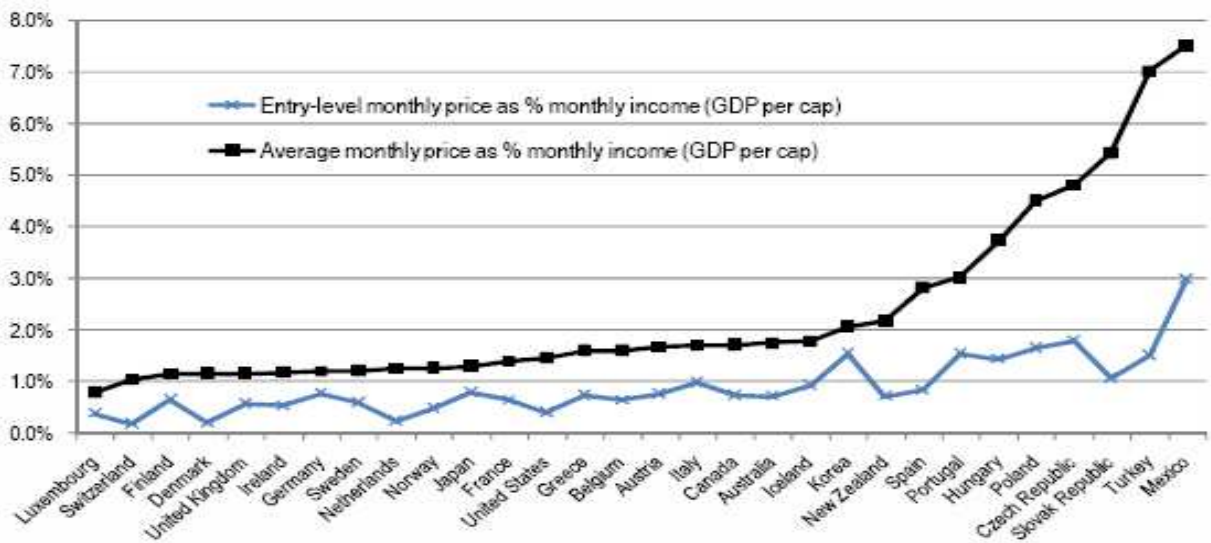
Comparing the average price per additional GB after the cap, OECD is \$33.21, **Australia is \$108.48**. According to OECD statistics, Australia has the one of lowest bit/data cap levels (15GB) and the highest excess MB charge (over 10c per MB).

OECD Broadband Portal reports

The figure below comes from the OECD's Broadband Growth and Policies Report available through the OECD's Broadband Portal at http://www.oecd.org/document/54/0,3343,en_2649_34223_3869_0102_1_1_1_1,00.html at Chart 1a.

Figure 1.13. Broadband affordability, October 2007

Entry and average monthly broadband price as a percentage of monthly GDP per capita



A number issues arise from this information on pricing:

- There is no room for a significant increase in prices for fibre based broadband services
- The price of international connectivity is still too high
- Australia needs to have an entry level offer to encourage take up of NBN Australia services.

ATUG Future Forums 2007-2008

During 2007 ATUG held a series of member discussion forums to work through the issues associated with moving Australia onto a next generation broadband platform.

The Demand Forum highlighted the need for a range of broadband speeds and pricing plans “fit for purpose”. Many end users are on a journey with broadband and are still in the process of building their understanding of value. End users do not want to be presented with very high speed but unaffordable broadband services. Just as important for end users right now are proper plans where what you see in the ad is actually what you get. End users need an effectively broadband market where switching providers is as seamless as switching mobile providers. Business users want a market where broadband availability is ubiquitous and quality is consistent. End user confidence is a key issue. All sectors in the economy will be able to transform transactions and processes based on the new connectivity and achieve their objectives for productivity, innovation and growth provided all Australians are connected to the next generation platforms. “Any to any connectivity” and “always on” are shared visions BUT the need for speed and the ability to pay is specific to each user.

The Technology Forum came to the conclusion that fibre to the home/farm/business is the future for the fixed network. But+ to meet market demands for affordable, ubiquitous, high and (sometimes low speed) broadband and to deal with the distance/density issues in Australia, wireless services have an important role to play. Over time, just as voice services have become mobile, so will broadband services – for that segment of the market which is happy to pay the mobile premium for convenience. The geography of Australia will mean satellites will also be an important part of the future technology landscape. End users are really not interested in the technical specification of the underlying platforms and don’t approach this debate with any ideological predisposition to one platform or another. An important feature for end users is the new world of the “Internet of Things”. Early examples include sensor networks and increasing use of RFID tags. The need for IPv6 to support the “Internet of things” and the migration and cost issues associated with such a huge change need to be planned and managed. The development of the SMART GRID (rather than just the Smart Meter) may provide the basis for increased infrastructure competition, but will require co-operation at unprecedented levels between Federal and State Governments through COAG and such processes, and with the private sector. The Technology Forum members felt access to competitive backhaul capacity, within Australia and internationally, will become more urgent in the next few years as content becomes richer and information flows more symmetrical.

The Investment Forum came at a point in the cycle of Forums, when Australia had just had an election with broadband a key issue. The forum discussion focused on the rise and rise of social networking, better online content, smarter personal devices and the thinking by business and government about forms of Enterprise 2.0 or Agency 2.0 based on Web 2.0 technologies. Businesses are seeing the move to digital business “net” based working as critical to mission and hence on the investment radar. ATUG itself is exploring Web 2.0 working as a way of meeting members’ needs for information including direct international updates from experts. Telcos is exploring new models of investment – including public/private partnerships and how these can be effectively structured to achieve the multiple objectives that underpin them including risk management. New business models in the construction and operation sectors of the market are being matched with new business models in the content, applications sectors of the market. This innovation is taking place in a privately funded market where shareholder expectations are an important consideration – albeit not the only consideration as the High Court decision on competition in telecommunications indicated (in para 33 of the judgment):

“The objects thus identified in the 1997 Telecommunications Act and in Part XIC of the Trade Practices Act are wider than and different from that narrow self-interest which, statue apart, is all that one participant in a market would ordinarily consult when striking a bargain with another participant in that market.”

The Forum concluded that broadband has to be affordable as well as available for end users, and Australia as a whole, to reap the benefits of this new economic and community infrastructure.

After ATUG’s Forum was held, the OECD’s Workshop on Fibre Investment and Policy Challenges was held in April 2008, (http://www.oecd.org/document/56/0,3343,en_2649_34223_40460600_1_1_1_1,00.html). The workshop included a presentation on the challenging economics of fibre deployments by Marvin Sirbu of Carnegie Mellon. The presentation covers the implications of various fibre network designs for competitive outcomes for end users.

The Policy and Regulation Forum was more focused on FTTH developments and supporting regulatory frameworks. Around the world, given the economics of fibre deployment, two approaches are emerging depending on who builds the fibre network:

- where incumbents build the FTTH networks, the issues crystallize around arrangements for access to the switching network, fibre plant unbundling, the pricing of access, Equivalence Issues

- where competitors build the FTTH networks, the issues crystallize around over-build by the incumbent

A number of countries are exploring “functional separation” as a way of dealing more efficiently and effectively with bottleneck infrastructure, meaning effectively competitive sectors can be left to market forces.

Beyond the “fibre build” debate, there remain some big policy questions arising from:

- merging of the telephony and internet worlds;
- development of behavioural economics as a way of understanding the role of consumers as effective market participants when properly informed and empowered through mechanisms such as contracts and switching processes
- objectives to reduce unnecessary regulation on economic activity;
- scarce resources such as spectrum becoming more abundant because of technology developments;
- contemporary approaches to Universal Service, perhaps moving from an Obligation on industry to a Safety Net Guarantee from Government.

GLOBAL DEVELOPMENTS

NETWORK DESIGN

The OECD is recommending policymakers seriously consider issues of network design and their implications for competitive outcomes at the earliest stage of fibre deployment.

A number of recently released OECD papers have discussed the competitive concerns which arise with point-to-multipoint network layouts (e.g. those commonly used for PON and VDSL):

DEVELOPMENTS IN FIBRE TECHNOLOGIES AND INVESTMENT

DSTI/ICCP/CISP(2007)4/FINAL

<http://www.oecd.org/dataoecd/49/8/40390735.pdf> (page 26, 41, 42 etc)

CONVERGENCE AND NGN – MINISTERIAL BACKGROUND REPORT

DSTI/ICCP/CISP(2007)2/FINAL

<http://www.oecd.org/dataoecd/25/11/40761101.pdf> (pages 21, 25, etc)

BROADBAND GROWTH AND POLICIES IN OECD COUNTRIES

C(2008)51

<http://www.oecd.org/dataoecd/32/57/40629067.pdf> (page 50,51, etc)

The OECD also recently held a **Workshop on fibre investment and policy challenges**

http://www.oecd.org/document/56/0,3343,fr_2649_34225_40460600_1_1_1_1,00.html

Two presentations cover the competition implications of network design

Marvin SIRBU, Carnegie Mellon

[Topology – benefits and drawbacks](#)

and

Herman WAGTER, Citynet Amsterdam

[FttH as a communication infrastructure: a primer](#)

The implications of network design on competition are also discussed in a recent paper by Banerjee, A. and Sirbu, M., "Towards Technologically and Competitively Neutral Fiber to the Home (FTTH) Infrastructure," in Chlamtac, I., Gumaste, A. and Czabo, C., eds, *Broadband Services: Business Models and Technologies for Community Networks*, (John Wiley: New Jersey, 2005), http://www.andrew.cmu.edu/user/sirbu/pubs/Banerjee_Sirbu.pdf :

“As a result of the FCC’s recent Triennial Review decision, incumbents who invest in FTTH are not obligated to offer UNEs at regulated rates. In deploying fiber to the home, incumbents may consider it unnecessary, therefore, to adopt an architecture that enables physical plant unbundling or they may be tempted to design the deployed fiber architecture in a way that eliminates the potential for future competition based on unbundled dark fiber elements even at negotiated rates. This paper argues why it may be desirable to have the option of deploying multiple data-link layer technologies and goes on to show that the minimum cost fiber network - taking into account the real options an OFAP provides - results in fiber layout, which is, in fact, hospitable to physical plant unbundling and Unbundled Network Element (UNE) competition. Such a fiber layout can, conceivably, support both point-to-multi-point (P2MP) PON architectures as well as point-to-point (P2P) active star and home run architectures.”

GLOBAL DEVELOPMENTS

EQUIVALENCE

The economics of fibre deployment are challenging outside densely populated markets. Policy and regulatory approaches should support infrastructure competition where that is possible, for example the approach taken by France.

Where infrastructure competition is not possible, the preferred regulatory approach is to ensure Equivalent Access by competitors to enable the greatest degree of innovation and choice for end users that is possible.

Countries are developing slightly different approaches, depending on market conditions. But there are a number of models for Australia to consider and discuss.

New Zealand

Operational separation of Telecom's business is part of a package of new regulatory measures brought in with the passage of the Telecommunications Amendment Act in December 2006.

Operational separation in NZ is based on equivalence of treatment in the supply of services to internal and external purchasers to avoid discrimination and foster market competition. The NZ Minister described the objectives of the approach in a recent speech, <http://www.beehive.govt.nz/speech/speech+kanz+broadband+summit>

“Operational Separation

Reform did not stop there. While local-loop unbundling is a significant step towards greater competition in the sector, it is much more powerful in the context of an operationally separated incumbent. We finalised negotiations with Telecom New Zealand on its operation separation in March this year. These undertakings, while voluntarily entered into, are legally binding, contain clear milestones and timetables and strong penalties if breached.

Operational separation will deliver non-discrimination at a deep wholesale level and an access layer that is open to entrants and competitors on an equivalence of inputs basis.

The robust operational separation of Telecom New Zealand is expected to foster increased competition and access to a wider range of new and improved broadband-based services at better prices.

This is important because offering competing facilities-based services over the existing infrastructure was only going to take

us so far up the international ladder – we also need increased investment in that infrastructure – beginning with shortening loops in order to make fibre to the premise a viable prospect for the future.”

Detail on the New Zealand model is at http://www.med.govt.nz/templates/MultipageDocumentTOC___30333.aspx

The Separation Plan (comprising the undertakings) was approved by the Minister on 30 March 2008, and became legally enforceable on Separation Day - 31 March 2008.

Singapore

In Singapore the Next Gen NBN will comprise three key conceptual industry layers:

- the Network Company (Next Gen NBN NetCo), will be structurally separated and responsible for the design, build and operation of the passive infrastructure layer;
- Operating Companies that are responsible for the design, build and operation of the active infrastructure to provide wholesale broadband connectivity to other operating companies and
- Retail Service Providers who will compete to provide innovative services to end-users.

Singapore sees it is critical for the Next Gen NBN to ensure effective open access to the infrastructure by downstream operators. The Government decided to adopt separation between the different layers of the Next Gen NBN to achieve effective open access:

- The Next Gen NBN NetCo will be Structurally Separated from the Next Gen NBN Op Co.
- The Next Gen NBN OpCo will be required to be Operationally Separated from downstream RSPs. Operational Separation is a less stringent form of separation as the Next Gen NBN OpCo will be allowed to retain full shareholding ownership of its downstream operating units, such as RSPs.

The Next Gen NBN OpCo will be required to treat all downstream units equally, and on a non-discriminatory basis. The Next Gen NBN OpCo will have to operate on a standalone basis separate, from its affiliated downstream operating units, and be subject to various obligations, including being established as a separate legal entity and maintaining separate board, management and staff.

In addition to Operational Separation, the Next Gen NBN OpCo will also be subject to other key obligations as follows:

- Price Control
The Next Gen NBN OpCo must offer fair and non-discriminatory wholesale broadband services to other Operating Companies and downstream operators such as RSPs through an Interconnection Offer (ICO). The prices and terms and conditions of these wholesale offerings will be regulated by IDA.
- Universal Service Obligation (USO)
The Next Gen NBN OpCo will be required to complement a similar obligation on the Next Gen NBN NetCo. The Next Gen NBN OpCo will be obliged to meet all reasonable requests by any operating company or downstream RSP for access to a basic set of wholesale services offered under its ICO.

Full details on the IDA's Public Consultation on Industry Structure for Next Generation Access Networks, issued on 17 April 2008, are at:
<http://www.ida.gov.sg/Policies%20and%20Regulation/20080417153248.aspx#decision>

Canada

A useful summary is in the AXIA Net Media Presentation at ATUG 2008, at
<http://www.atug.com.au/ATUG2008/Presentations/ArtPrice.pdf>

CEO Art Price outlined the approach adopted by Axia in Canada and France in its Fibre Deployments. The presentation, Next Generation Network Drivers and Implementation Approaches, made the clear statement:

The common attribute across ...break-through implementations:

Put the NGN fibre grid in a no-conflict open access business model by separating ownership.

France

A presentation at the OECD Workshop on Fibre Investment and Policy Challenges outlines the approach and models being taken by the French Regulator to support the development of infrastructure based competition in FttH deployment in areas of France. The presentation, Orientation of regulation on access to ducts and sharing of the last part of the optical loop, describes the French Regulator's approach to physical plant sharing and access to buildings. The presentation is at
<http://www.oecd.org/dataoecd/35/60/40460875.pdf>

UK

The UK approach by BT was outlined in Grant Forsyth's Presentation at ATUG 2008 – Overseas Developments: Successes in A Functionally Separated World at,

<http://www.atug.com.au/ATUG2008/Presentations/GrantForsyth.pdf>

Forsyth outlined the usual objections to Functional Separation and BT's response to them:

1. Suppresses investment
 - Return on investment is determined independent of FS
 - Greater certainty supports wider investment from incumbent and entrants
2. Suppresses investment in fibre
 - UK is leading in fibre deployment
 - UK committed to green-fields FTTP on an EOI basis – no “Regulatory Holidays”
3. Creates a monopoly
 - EOI only for enduring bottlenecks – i.e. exiting monopoly
 - Entrants free to invest where opportunities exist / business case work
4. Duct sharing is a better alternative
 - Practical issues rule it out for more than a select few
 - How is equivalence of access to be delivered? Functional Separation?
5. Replicability is a better alternative: Equivalence = Equal
 - France: MAN Ethernet
 - Spain: Metro-net Ethernet
6. Too costly
 - To whom ? Costs of competition always “too costly” when imposed
 - Incremental cost of EOI not significant vs other systems costs
7. Destroys the share value of the incumbent
 - Ask the shareholders and the analysts
 - Not the experience of BT
8. Eliminates jobs and dumbs down pay and conditions
 - Openreach: increased number of employees employed, increased the value of individual remuneration provided

Information on the BT Undertakings, which created Openreach, is at:
<http://www.ofcom.org.uk/telecoms/btundertakings/otherdocs/>

Information on the implementation of BT's undertakings is at: <http://www.ofcom.org.uk/telecoms/btundertakings/> This is a public process and report made available by the regulator, OFCOM.

In addition, the UK established the Office of the Telecommunications Adjudicator (OTA2, www.offta.org.uk) as a follow-on to the OTA Scheme and independent of the regulator and of industry. OTA2 facilitates the swift implementation of processes where necessary to enable a wider range of Communications Providers and End Users to benefit from clear and focused improvements, in particular where multi-lateral engagement is necessary. The OTA2 is able to bring all parties together to find prompt mediated resolution of working-level implementation issues. The OTA2 primarily deals with major or strategic issues affecting the rollout and performance of Openreach products as defined in the MOU.

ATUG Cross Connect meetings on the NBN RFP, April 2008

Concerns raised at these member meetings on the RFP included:

- Creation of a new monopoly and if so, what influence Service Providers would have in trying to develop and offer a range of tailored services.
- How could end users could be confident of what they are being provided?
- Even though take-up of future applications was not clear, extensive network development was required as a first step with a focus on delivering a first class end user experience.
- Distinct Business and Domestic services need to be available with clear and measurable service capabilities. Given the poor experience to date, the meeting strongly supported the concept of Quality and Performance Regulation as a means to ensure reasonable end user experiences
- Preserving competitive service in the 'last mile' was strongly supported. A well regulated and effective wholesale market place was considered a 'MUST' with open and equitable access for all providers.
- The FTTN must be dimensioned for a wide range of services including e health, distance education and general business needs as well as entertainment and IPTV needs.
- The new NGN should be considered to be an 'innovation platform' with a strong focus on open and interoperable standards, peer to peer working requiring symmetrical services, network neutrality and a capability to accommodate IPV6.
- The future of multiple concurrent applications on a domestic service means a future target capability of 100 Mbps should be set.
- While data rates were considered important, the need for large and reasonably priced monthly download capacities was considered crucial.
- Since there are divergent views on appropriate Rates of Return, (RoR), there needs to be an examination of the likely impact on prices that would result from an increase in RoR, assuming there is the only one transport service provider or limited infrastructure based competition
- To achieve an effective regulatory environment the meeting expressed strong support for a pro-active and interventionist regulator not dissimilar to environment of Austel

ATUG Member Discussions on the NBN Regulatory Issues, June 2008

Discussion Paper

Member meetings were held in Melbourne, Adelaide, Sydney, Brisbane and Perth. The following discussion points were used in these forums.

Policy Objective for the new Legislation

Long-term interests of end users remains the objective to telecommunications policy in Australia, especially policy designed to encourage accelerated and extended investment in next generation broadband networks.

Affordability

Next Generation broadband will not achieve the right outcomes for Australia if end users cannot afford to pay for it.

Discussion Points

- Ways of reducing build costs; carrier powers and immunities; access to physical infrastructure; infrastructure sharing
 - o Maximum opportunity should be taken to utilise existing physical infrastructure, eg, towers, poles, pits, ducts, on an “equitable” basis so as to reduce cost and environmental impact.
 - o For example in the case of the overhead cable option, (whereby new technology, non metallic cable can be erected beside electrical conductors) legislation must make carriers exempt from local government planning laws for this specific activity.
 - o A code of practice to address construction practises should be developed by Communications Alliance and registered with and compliance monitored by the Australia Communications and Media Authority.
- Availability of an entry level package, as exists with the Australian Broadband Guarantee, to ensure all end users can afford to connect to the NBN
- Pricing should reflect real costs of construction, fair returns for private investors and government

Choice

Competition remains a key outcome for ATUG. Where possible, infrastructure competition is preferred. Where this is not possible service competition is preferable to monopoly.

Discussion points

- Structural separation – separate ownership
- Functional separation – separate structures, processes, management teams, incentives under common corporate ownership

How to achieve wholesale service equivalence – price, non-price. a comprehensive set of “service equivalence” industry rules must be established by an Independent Body

How to achieve industry “tolerance” and effective self-regulation of advocacy

The Trade Practices Act should be the vehicle. It already requires the ACCC to take account of the risk of new investment in setting access prices and has provisions for access and anti-competitive conduct

Compliance with the Rules by both providers and seekers must be monitored independently and enforced by the Regulator.

Oversight Body – NBN Australia

ATUG sees the increased level of disputes and the increased use of legal process to delay outcomes as evidence that industry processes are not working and that ACCC processes reflect a philosophy suitable in 1997 but self-evidently not workable in 2008. The migration task associated with the roll-out and cut-over of all broadband users to the NBN is a huge project requiring commitment over many years. The implementation of processes to support effective of functional separation is a preliminary task requiring industry co-operation which has not been seen for some years.

Discussion Points

- Can industry-based, independent monitoring of competitive behaviour be established to mitigate the risk of non-price anti-competitive behaviour especially to timeliness of outcomes?
- Could this body be a required step ahead of arbitration and litigation?
- What role should the ACCC have in this body?
- What role should end users have in this body?

NBN Customer Experience

End users need more information on speeds as broadband becomes more integral to working and living. Customer service and switching processes for broadband services need to be updated. Migration plans for NBN

implementation need to take account of end user needs at the beginning and not require Ministerial intervention as happened with CDMA switch off.

Discussion Points

- **Customer Migration**

Legislation should require the establishment of an Industry Code of Practice to set out rules and processes for the fair and reasonable transfer of a customer from one provider to another provider.

- **Customer Information**

Legislation should require the establishment of a “Framework” for the presentation of a minimum set of standardised customer focused data describing the characteristics of a particular service and the speed performance delivery standards.

- **Rules Compliance**

Legislation must require all industry participants to enter into a formal legal agreement with the appropriate Industry Regulators to comply with applicable Industry Rules and Codes of Practice.

Ubiquity of Australia’s NBN

ATUG believes all Australians, wherever they are, should have access to the NBN minimum service at affordable prices. The real benefit of the NBN will not be achieved unless ALL Australians can be connected. The transformation of business, government and community services and activities that could be possible with Next Generation Broadband cannot be achieved without ubiquitous coverage.

Discussion Points

- An entry level product should be available to ensure all end users can connect to the NBN
- Should the USO be extended to include broadband – an Australian Communications Guarantee including Voice* and Broadband (Voice* means Voice and Voice Equivalent services)
- Government funding for USO services is preferable to industry based cross subsidy schemes
- Does the emergency service obligation apply to FTTx builds – what are the cost implications?
- Spectrum for broadband in regional and remote areas – timeliness, cost
- The ABG will be need to be funded sufficiently to provide coverage until NBN services are available