SELECT COMMITTEE ON THE NATIONAL BROADBAND NETWORK

Submission by
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BACKGROUND

This submission has been prepared by Communications Experts Group Pty Ltd who are Telecommunications consultants and who have consulted a group of West Australian persons who have a knowledge of the Telecommunications industry in Western Australia.

The case studies cited in the submission are drawn from experiences overseas and Western Australia.

Dr Green is a Director of ATUG and has been a member of number of committees providing Telecommunications Policy advice the WA State Government.

KEY POLICY ISSUES

The West Australian ICT Development Forum produced a report "Enabling Growth" that showed that 30% of State GDP is due to the productivity enhancing capabilities of Telecommunications and Computers. The NBN Broadband network is a key component to enabling wider range of users improve their productivity and social benefits (health, education, social inclusion, etc.).

There are many indices and reports that show Australia falling behind other countries due to poor broadband infrastructure and in particular I refer to the Engineers Australia Infrastructure Report Card and OECD Telecom Reports.

The outcomes of Meetings held by ATUG WA and CEG's experience in dealing with the Telecom issues and pricing, the key issues for the NBN are:-.

Clear Policy

Core policy objectives should include the Long Term Interest of End Users and the introduction of effective and equal wholesale access to the NBN for both price and non-price services, preferably by implementing Structural Separation.

Affordability

Affordability is the key to acceptance by users for both business and residential services. Competition is the strongest tool for delivering affordable services. Experience in WA has shown that take up is significant when there is an Entry Cap and services in the price range of $40.00 - $90.00 per month.

End User Choice

Infrastructure competition will not be possible and it is critical that Services Competition be enabled, including:-

- Type of Service,
- Quality of Services,
- Repair and Maintenance,
- Equivalence of Wholesale Access.

Ubiquity

To achieve the desired policy objectives all Australians should have access to Broadband services, and this includes affordability and accessibility to the NBN for the services needed to benefit users.

The Commonwealth Objective of achieving 98% coverage is critical to the future wellbeing of all Australians, however the definition needs to be clarified or strengthened by including a definition such " all communities of more than 100 persons should have access to the NBN Broadband network".

It is acknowledged that the NBN will take a number of years to roll out, and that higher density centres will be implemented first, however the ultimate goal should include the smaller centres and communities.

The Need for Structural Separation

In April 2005 CEG raised the issue of a fundamental flaw in the Australian Telecom Legislation that it is not possible to define a legally acceptable economic model to determine pricing and access. This was clearly shown in the series of court cases lodged by the mobile carriers against the ACCC in the dispute about Mobile Termination prices.

Regulators throughout the world have not been able to define an acceptable model and are now turning to Structural Separation as an alternative solution.

Two Carriers, British Telecom and the Dutch Telecom, have voluntarily opted for structural separation because of benefits to shareholders (and the community).

The 11 years of gaming and delay show that the arbitration model has failed, and attempts at Operational Separation are not delivering the desired outcomes in the delivery and pricing of services.

NEW NETWORK BOTTLENECKS.

The new Broadband network has the potential to create a new telecommunications bottleneck that will be more complex to regulate than mobile termination rates or the "Last mile Access" issues.

The new bottleneck is related to the delivery of "Streaming data" or Voice, Video and multimedia services and impacts on the Commonwealth NBN objectives:
"is able to support high quality voice data and video services"

The new bottleneck will have an impact on **how** businesses are likely to use the NBN to achieve benefits and productivity gains.

Significant research has been carried out on the Benefits of Broadband, but very little research has been carried out on how businesses and users will achieve these benefits or what the new economic environment will be like when the NBN is fully implemented.

Studies and Research into how businesses will use the NBN network are based on the following reports:

- PEWInternet and American Life
- Enabling Growth
- Analysis of ATUG and WAITTA finalists and winners
- Analysis of SME use of internet overseas where effective broadband has been affordable and available for the last three years.
- Trends in the features of network devices to satisfy future needs.

The results of this research can be best be summarised on how existing SMEs and Corporate entities are using broadband and are given in Attachment "A".

The two most important features identified in all the studies are:-

- The growing demand and importance of streaming data services such as voice, video conferencing and online training using multimedia, and

- The time to conduct online transactions.

Support for Streaming Services

The internet was not designed to support streaming services. While there is significant research to resolve this issue, there is a significant lack of standards. These standards are not expected to become available for some years, and the existing interim standards are based on proprietary solutions. For voice, video and multimedia services, there is general agreement on the need for levels "Quality of Service", but some disagreement on how the different priority levels will be implemented, especially in Carrier networks.

The provision of QoS is the new "key bottleneck" in the supply of Telecommunication Broadband Services and is capable of being a more effective

bottleneck than the use of existing copper to premises (or last mile connection). Due to the lack of standards there is no reference point for regulators to define or specify how the QoS should be implemented or supported. The NBN provider will have the capability to manipulate the protocols governing the QoS to reduce competition and maximise their profits at the expense of the users. Typical examples are the requirement to buy expensive modems, or forcing companies to rebuild their networks to suit the demands of the NBN carrier.

The provision of open access to an effective QoS for streaming services is an important tool in satisfying the Commonwealth's NBN objective "is able to support high quality voice, data and video services".

Response Times

Experience overseas has shown that suppliers with slow or "difficult to use" on-line services are likely to be unsuccessful (unless there is a monopoly) especially if response times exceed 10 seconds. The need for higher bandwidth to the user is only part of the solution. The provision of adequate backhaul services with better levels of aggregation will also be critical for the development of new businesses and user benefits.

The response times for online applications are determined by the "last mile data rate", the backhaul data rate and the response times of the individual applications.

State and Local Government Planning for Telecom Services.

Experience overseas and in Western Australia have shown that 80% – 90% of cost of provision of Telecommunication Services is in the provision of "civil infrastructure" such as "ducts, conduits, buildings and land".

There is significant scope for State Planning Departments, Local Government and Shires to make provision for telecommunication services, especially new building estates. In WA 1% – 2% of the cost of a new block of land is required to deliver fibre to the home or premises.

It is important that the Commonwealth take a lead in working with the States on the planning for telecom services to reduce the costs of delivering services to end users.

Appendix A

Case Studies on the Impact of Broadband on SMEs in the UK

The importance of computing and telecommunications to businesses is often understated. This leads to loss of opportunities and reduced efficiencies. The following Case studies show the importance of adequate bandwidth and computing facilities to SMEs and the productivity gains that can be achieved by allowing SMEs to purchase the services they need from a wide range of suppliers.

Bookstore
Current Bandwidth 2 Mbit/sec (to be upgraded to 8 Mbit/sec)
Staff on duty 2 – 5

A wholesale bookseller has developed an application that captures book requests, confirmed orders, manages delivery, and records sales, including managing stock on hand and turnover. This has led to better marketing practices in the bookshop, better accounting, higher turnover of books on display, and more efficient use of space in the building and display windows.

The negative impact of online sales companies such as Amazon.com have been reduced significantly because more effective book enquiries can be made, including the ordering and sale of books to customers (many customers still expect some personal service that cannot be delivered by the large on-line sellers).

The computers are maintained by remote access from the local Computer shop while accounting and other specialist applications are sourced from non local service providers.

Data entry for accounting, salary and revenue from other activities is entered locally with the data being forwarded to a bookkeeping services firm who maintain the integrity of the data and then prepare the accounts for the tax accountants.

The existing 2 Mbit/sec line is too slow and they are accepting the "free" upgrade package to 8 Mbit/sec plus VoIP services to reduce delays and improve customer service.

Small Service Delivery Companies
Current Bandwidth 4 Mbit/sec
Current staff on duty 5 – 8

A number of manufacturers and suppliers have developed applications to assist in the selection, ordering, delivery (supply chain) and accounting. The applications have helped manufacturers retain customers and improve sales. All the products require some form of personal service delivery by the SME (ie not all products can be sold on-line). The SMEs also purchased similar products from different suppliers (ie acted more like brokers).

On line training, access to a Knowledge base and Webinars were extensively used to improve customer service, reduce faulty installations, and enable more efficient and

accurate fault diagnosis. One supplier notified the SME if they were buying a part or device for the first time and directed them to the relevant training package or archived webinar. The same supplier had evolved a cycle of:-

a) Production or Update of Training Package.
b) Conducted a webinar with users who had accessed the Training Package.
c) Used the feedback obtained from the Webinar to improve the Training Package.

Other services such as computer maintenance, security (firewall) maintenance, bookkeeping/accounting/HR services were purchased as required.

All the businesses were complaining about the slowness of their internet connections, but regarded the A$40 to A$80 as reasonable value for money. The download limits were high and did not affect the businesses.

A significant omission in all the SMEs was the low level of backup. On investigation a number of "backup" services companies were identified. One supplier had developed a special package for customers with the "limited 2 Mbit/sec internet connection".

In general:-

a) SMEs were dependent on multi megabit/s internet connections. The main driver for bandwidth was response times and not volume of traffic.
b) Wanted to purchase services using the internet from a wide range of suppliers and service providers.
c) For some applications, ongoing training and support were now part of the decision to purchase.
d) Different levels of support and service were needed for different applications. The competence of staff also influenced the level of support that was purchased.
e) Credit Card transactions were limited to dial-up.
f) There was a demand for personal service that on-line sellers could not deliver, and the internet service extended the area (and number of customers) they could service. This includes X and Y generation customers.
g) On-line banking, search engine services, on-line telephone directory and access to Government Services were essential.
h) They all reported improved profits and efficiencies because they could spend more time delivering the services they were good at, and spent less time on supporting services. Access to a wide range of suppliers (some local, some remote) was an important business issue.

An mportant observation was that "Streaming IP Services" such as VoIP, Webinars, On-line video, Audio and Multi Media were becoming more significant than email and web. It is critical that the network, and the services made available on the NBN be mandated to deliver at least three levels of QoS.

a) High Bandwidth Streaming (Highest Priority).
b) Streaming Bandwidth for VoIP – Webinar etc (Medium Priority).
c) Transaction Services for Web, email etc. (lowest priority).