

Ericsson Submission to the National Broadband Network Expert Panel

Attention: Ms Patricia Scott, Chair,
National Broadband Network Panel of Experts
via email: nationalbroadbandnetwork@dbcde.gov.au

Ericsson Submission to the Panel of Experts on the National Broadband Network

Ericsson Australia is pleased to have the opportunity to provide a submission to the Panel of Experts regarding Australia's National Broadband Network.

Ericsson is a major equipment and services supplier in Australia's telecommunications industry, and a significant provider of access and transport technologies for broadband networks around the world, including Deutsche Telecom in Germany and AT&T in the US. This experience provides us with insights that we feel are highly pertinent, and which we hope will assist the panel.

Many of these points were contained in our submission to the previous Government's Expert Taskforce in August 2007. As we believe this Panel will consider these previous submissions, we will not dwell on these points, and have summarised them briefly and augmented them with several other issues. For completeness our previous submission is attached.

Terminology

The direction from the Minister, Senator Conroy, states that “The new network is expected to ... use fibre-to-the-node or fibre-to-the-premises architecture”. Please note that in the comments below we have used the acronym FTTx – the industry expression used for all the variants of deep-fibre broadband networks including FTTN, FTTC, FTTH, FTTP, FTTB (fibre-to-the node / curb / home / premise / building). We have done so as we observe that when networks are deployed, there is seldom a single technology deployed, but usually a mix of several of these access technologies. The comments we make apply to all these technologies.

1 Business Services

In every country introducing FTTx networks a key motive is to provide faster and more powerful infrastructure to carry business services (alongside new and innovative consumer services). The explicit goal of the national governments of Singapore, Sweden, Netherlands, USA, etc., who are today introducing deep-fibre networks is to enhance business productivity, enhance national competitive capability, and also to encourage innovation and the introduction of new broadband-based industries.

We recommend that the provision of business services is an assessment criterion.

2 Video/ TV Distribution / Broadcasting

All over the world FTTx networks rely on the distribution of advanced video entertainment as the service that is most effective at attracting subscribers, with high network take-up key to commercial success.

Broadband networks designed to carry video/TV are significantly different from Internet-only networks; and an open-access network capable of delivering video/TV will require very different interfaces, capacities, features and pricing to allow retail service providers to offer an appropriate range of services. A "one-size-fits-all" best effort network with a single “bit-stream” interface will not be adequate.

We recommend that the provision of video/TV distribution covering both traditional and advanced models is an assessment criterion.

3 Features and Quality-of-Service for Wholesale Services

The proposed new open-access National Broadband Network will supplant most of the existing residential and business services that today are carried on the copper access network. Today's services provide a wide range of speeds, capacities, reliability and interfaces. They cannot be replaced by a "one-size-fits-all" best effort network with a single "bit-stream" interface.

In order for the wholesale carrier to offer potential for service differentiation to retailers, the ability to select and use the different features would need to be made available to retail service providers.

We recommend that the use of standards-based mechanisms for Feature and Quality-of-Service selection and control be identified.

4 Consistency of Services across Greenfields (New Properties) and Brownfields (Existing Properties)

It is already the case today in Australia that new large-scale residential properties are being equipped with FTTP (fibre-to-the-premise/fibre-to-the-home). By comparison, other deep-fibre technologies such as FTTN and FTTC are deployed to existing properties and not greenfield properties. Consequently there is the danger that a two-tier infrastructure could arise. Such an outcome would be confusing and unnecessary.

We recommend that services be shown to operate consistently across FTTN and FTTP access, and other access technologies where used.

5 Scalable FTTN/FTTP and Wireless Extension

Australia has an enormous range of population densities, ranging from highly-dense metropolitan centres, to medium and low-density suburbs and regional towns, to very lightly settled rural and remote areas. As has always been the case, no single access technology can be used satisfactorily across all these areas, as different technologies have very different costs per subscriber as density changes.

To meet the Government's target of covering "98% of Australian homes and businesses" with affordable retail prices, the network design should adapt the choice of technology to the different densities. In particular, lightly settled rural areas will require smaller cabinets/nodes than urban areas. And in the case of even more lightly settled areas (e.g. the furthest 8-10% of premises) a wireless broadband access should be utilised to ensure pricing parity with metropolitan regions.

We recommend the Panel ensures that the architecture adapts to different population densities through scaling of FTTN/FTTP nodes, and by integrated use of Wireless Broadband access.

6 Standardisation and Use of In-Building Cables

While we acknowledge it is out of the control of the operators and requires the leadership of the industry and regulator, we recommend that a process be established to ensure that new standards for in-building fibre-cable plant will be developed in a timely fashion.

7 Backhaul

While there has been much discussion on increasing subscriber access speeds, to 12Mbps, 20Mbps, or greater, the scale of increased capacity from cabinet/node to exchange, and exchange to network core, has received little attention. This increase in backhaul capacity is not only due to faster access speeds. The introduction of more sustained services such as IP-TV will reduce the level of "statistical multiplexing" or "over-subscription" that operators can use.

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The combination of greatly increased access speeds (e.g. from 1Mbps to 25Mbps) and reduced over-subscription (from 1:20 to an estimated 1:5), means that the backhaul capacity must increase to as much as 100 times the current capacity.

We recommend that the Panel ensure that adequate backhaul capacity will be installed.

Conclusion

Thank you for the opportunity to provide this feedback.

Ericsson looks forward to continuing to contribute to the development of Australia's telecommunications environment, and in particular to the task of building the new high speed broadband network. We are happy to provide more detail or clarification should you find it necessary.

Yours faithfully,

Stephanie Huf

General Manager - Public Affairs

Ericsson Australia & New Zealand

Attachment: Ericsson Submission to the Expert Taskforce, August 2007

Attention: Chair, Expert Taskforce
C/- Department of Communications, Information Technology and the Arts
Via email: Expert_Taskforce@dcita.gov.au

Re: Submission on draft guidelines

Ericsson Australia has been a major participant in Australia's telecommunications industry for more than 100 years. We have taken a keen interest in recent events leading to the creation of the Expert Taskforce, and are delighted to have the opportunity to provide a submission to the Taskforce on the "Draft Guidelines for High Speed Broadband Network Infrastructure Proposals".

Today's telecommunications services make a powerful contribution to our country, businesses and lifestyles. As the technology underpinning our telecommunications networks continually changes, so it is important that our infrastructure is regularly updated to continue delivering the services Australia needs. Currently we are involved in the introduction of High-Speed Broadband networks all over the world. We can assure the Expert Taskforce that the concept of introducing a new High-Speed Broadband Network for Australians is timely, and well worth serious consideration.

Our Credentials

As well as being the major supplier and integrator of mobile phone networks in Australia, Ericsson Australia is also a top three provider of fixed broadband (ADSL2+) equipment and services to Australia's ISP's. Most of the fastest ADSL services in Australia today are carried through Ericsson-provided broadband equipment. Ericsson is also the most prominent supplier of optical and microwave transmission equipment for backhaul.

Ericsson was the prime integrator of Telstra's NextG 3G/WCDMA network. The process of rolling out this superb network is rightly seen by the telecommunications industry worldwide as establishing "world's best practice" in the deployment of major networks.

We regularly conduct market studies to help us forecast market directions and needs. These studies range from large-scale surveys of consumer behaviour (our ConsumerLab studies have 2,000 respondents in Australia), to intensive focus groups that provide an understanding of the behaviour of specific demographics (our "Broadbanding the Boomers" study researched the values and needs of older consumers as they take up broadband services). Using these techniques we have accurately forecast the growth in broadband for Australia.

In 2003 we commissioned a research report from the Allen Consulting Group called "True Broadband: Exploring the Economic Impacts", which clearly shows the benefits to economies of very high-speed deep-fibre broadband networks.

As the world's largest telecoms infrastructure and services company, Ericsson is already delivering next generation broadband infrastructure. In particular we are a provider of FTTN (fiber to the node) infrastructure to Deutsch Telecom in Germany, and to AT&T in the United States (the world's largest telco). We anticipate that, like all other developed countries, Australia will also see the advantages of updating to a "deep-fibre" fixed broadband network as the basic medium of high-capacity communications for the coming decades.

Our Comments

Through our participation in the building of deep-fiber networks over the last few years, we have seen several issues arise that have proven to be of great importance in a number of countries. We believe these need to be considered by the Taskforce and addressed in any future versions of the "Guidelines for High Speed Broadband Network Infrastructure Proposals".

[Please note that in the comments below we have used the acronym FTTx – the industry expression used for all the variants of deep-fibre broadband networks including FTTN, FTTC, FTTH, FTTP, FTTB (fibre-to-the node / curb / home / premise / building). We have done so because when networks are deployed, there is never a single technology deployed but always a mix of several of these access technologies, and because the comments we have made apply to all these technologies.]

A) Business Services

In every country introducing FTTx networks a key motive is to provide faster and more powerful infrastructure to carry business services (alongside new and innovative consumer services). The explicit goal of the national governments of Singapore, Sweden, Netherlands, USA, etc., who are today introducing deep-fiber networks is to enhance business productivity, enhance national competitive capability, and also encourage innovation and the introduction of new broadband-based industries. In short, the intention is to boost their economies.

Naturally this is done in conjunction with providing new broadband services to residential users (advanced video/TV services, new telephony services, and very high-speed Internet access). A useful parallel is the mobile phone industry, where the mass market of mobile phone networks for consumers creates the base of users and network that then provides connectivity to businesses and between businesses.

We note that the Draft Guidelines identifies "Benefits for Consumers" as an assessment criterion, but makes no specific mention of "Benefits for Business Users". Our experience has shown that business has significantly different needs in terms of reliability, capacity, and choice of interfaces.

It is especially important when providing an open-access or wholesale network, that the retailer has access to a wide range of features which will allow them to create and market business services tailored to different types of business users (for example shops, offices, and factories). In particular business services often require more symmetry (more capacity to both send data as well as receive data) than has been provided in the past for residential Internet access.

It is also important that as the new broadband network is deployed, effective mechanisms are in place to transition business services from existing narrowband networks to the new broadband network, to the extent that the provision of the new network will supplant the old narrowband network (for example by taking over the copper cable to the subscriber).

We recommend that the Guidelines be extended such that the provision of business services is an assessment criterion.

B) Video/TV Distribution / Broadcasting

The commercial success of every telecommunications network is determined by it's success in attracting subscribers. The industry uses the expression "take rate" or "takeup rate" to measure how many subscribers

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take a service ("homes-connected") as a proportion of the number of subscribers that could be connected ("homes-passed"). All over the world FTTx networks rely on the distribution of advanced video entertainment as THE service that is most effective at attracting subscribers. (Notable examples are the networks of FastWeb in Italy, and Verizon in the USA. In Australia today Telstra's Velocity service and Transact in the ACT offer video entertainment.)

In short, commercial success requires a high take-rate (typically 30-50%), and a high-take-rate requires advanced video-entertainment services. Merely offering Internet access and telephony will not secure the high take-rate necessary to ensure a viable network business.

We note that the Draft Guidelines do not discuss the need for the new broadband network to carry video/TV distribution. Broadband networks designed to carry video/TV are significantly different from Internet-only networks; and an open-access network capable of delivering video/TV will require very different interfaces, capacities, features and pricing to allow retail service providers to offer an appropriate range of services.

Modern advanced video services are also quite different in their network requirements from traditional PayTV and broadcast TV models. New services such as Video-on-Demand and Personal Video Conferencing require more dedicated capacity to the subscriber as well as more symmetry (upstream and downstream capacity) than was the case for the traditional models.

We recommend that the Guidelines be extended such that the provision of video/TV distribution covering both traditional and advanced models is an assessment criterion.

Furthermore, in many parts the world FTTx operators have required (or are seeking) the ability to act as broadcasters. This has been a major regulatory issue in the USA, and is currently being challenged in Korea and Japan where operators are seeking changes to their Broadcast Acts.

We recommend that the Expert Taskforce clarify the scope for modifications to broadcasting legislation.

C) Features and Quality-of-Service for Wholesale Services

The proposed new open-access High-Speed Broadband Network will supplant most of the existing residential and business services that today are carried on the copper access network. Today's services provide a wide range of speeds, capacities, reliability and interfaces. They cannot and will not be replaced by a "one-size-fits-all" best effort network.

This in itself is not an issue; modern well-designed FTTx networks can deliver a wide range of speeds, capacities, reliability and interfaces. In order for the wholesale carrier to offer potential for service differentiation to retailers, the ability to select and use the different features would need to be made available to retail service providers. Furthermore selection and control of these features should be provided using appropriate industry standards, rather than ad-hoc or proprietary controls. An example of an appropriate standard is 3GPP TISPAN.

We recommend that the Guidelines be extended to require the use of standards-based mechanisms for Feature and Quality-of-Service selection and control.

D) Consistency of Services across Greenfields (New Properties) and Brownfields (Existing Properties)

It is already the case today in Australia that new large-scale residential properties are being equipped with FTTH (fibre-to-the-home). FTTH is now a cost-effective and future-proof broadband access for new homes. (Telstra's

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“Velocity” is an example of FTTH in Australia.) By comparison, other deep-fiber technologies such as FTTN and FTTC are deployed to existing properties and not greenfield properties.

This preference for FTTH in greenfield areas will continue. Consequently there is the danger that if another technology is selected for brownfield areas, a two-tier infrastructure could arise; with the higher capacity services on FTTH infrastructure in new properties, and different or less powerful services for existing properties. Such an outcome would be confusing and unnecessary.

We recommend that the Guidelines be extended to require that services operate consistently across existing and new properties, and in particular that consistency of service be sustained across the FTTH infrastructure in Greenfield areas.

E) Standardisation and Use of In-Building Cables

The building industry has developed over many decades a consistent approach to the laying of copper cables in large buildings (apartment buildings, office towers, etc.) and small (suburban homes). This cable plant is owned by the property owner. It's availability and predictable characteristics mean that it is possible for building tenants (or owners) to confidently purchase telecommunication services that are readily delivered over this in-building cable plant.

In several countries (South Korea, France) the Ministry of Communications has created industry taskforces charged with identifying standard approaches to providing in-building cables, and the use of in-building facilities (equipment rooms, ducts, etc.). This is especially critical for the deployment of the new optic fibre cables within buildings.

While we acknowledge it is out of the control of the operators and requires the leadership of the industry and regulator, we recommend that the Guidelines be extended to identify the expectation that new standards for in-building cable plant will be developed in a timely fashion.

Conclusion

For the issues we have discussed we have tried to indicate the basis for our comment. However we know that this is a complex area and that these issues may require further explanation. We are happy to provide more detail or clarification should you find it necessary.

Thank you for the opportunity to provide this feedback. Ericsson looks forward to continuing to contribute to the development of Australia's telecommunications environment, and in particular to the task of building the new high speed broadband network.

Yours faithfully,

Stephanie Huf
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