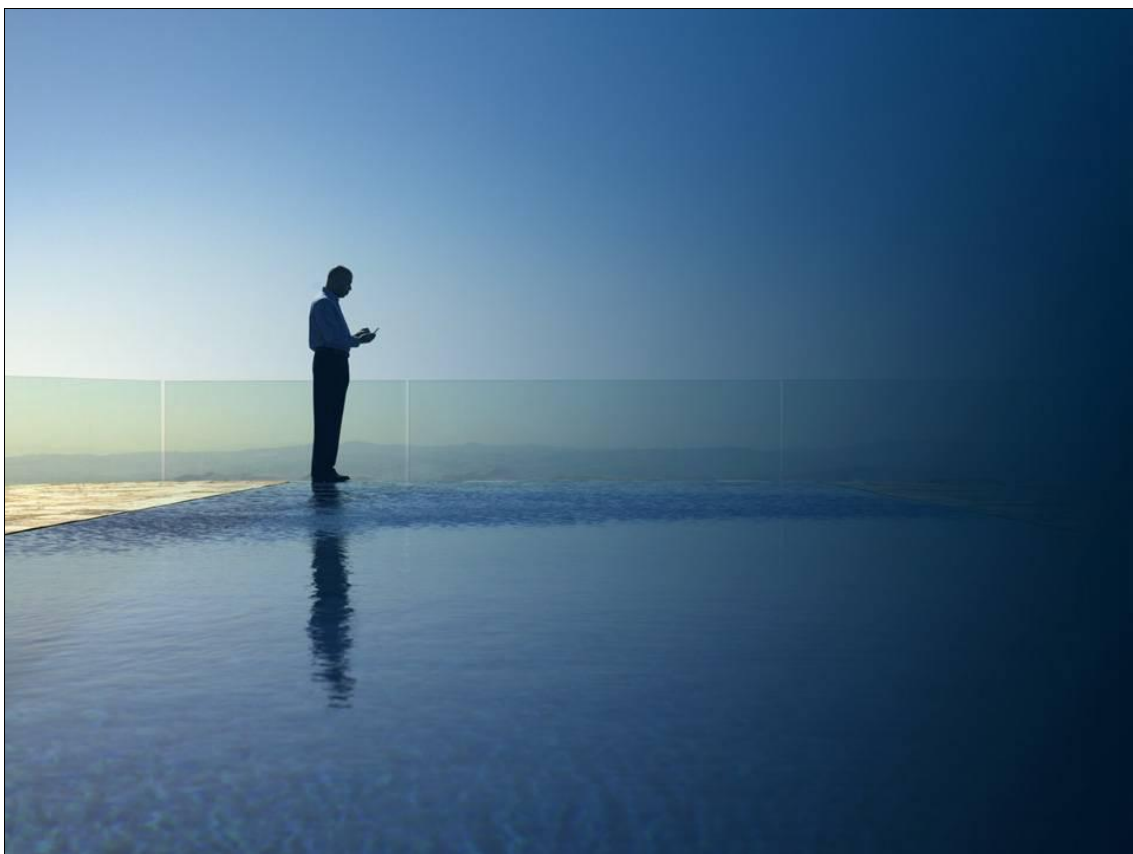


SUBMISSION ON REGULATORY ISSUES
ASSOCIATED WITH THE NATIONAL BROADBAND
NETWORK



SUBMITTED BY
INTEL AUSTRALIA
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1 EXECUTIVE SUMMARY

Intel appreciates the opportunity to make this submission on regulatory issues that we consider of national interest associated with national broadband policy in general and the National Broadband Network in particular.

Intel is a world leader in the design and manufacture of the building blocks for the internet industry. We work closely with our customers around the world to ensure that the benefits of our silicon-based design and manufacturing expertise can be passed on to their customers to deliver better commercial and community outcomes. Intel invests significantly in the digital economy with a particular focus on mobility, education and healthcare.

We would be pleased to expand on the issues raised in this submission if appropriate but for the purposes of this submission we have endeavoured to identify what we believe are the key issues that should be considered if the nation is to achieve optimal economic and social benefit that ensue from an innovative national broadband service.

2 KEY ISSUES

We propose that there a number of key issues that should be considered as the shape and scope of the nation's crucial broadband infrastructure is considered.

This matter is bigger and more important than the interests of any special interest group and given that the build-out of this infrastructure will be seeded by Commonwealth Government funding we suggest that matters of national interest should be considered.

2.1 TECHNOLOGY & INNOVATION

In 1965, Intel co-founder Gordon Moore predicted that the number of transistors on a chip will double about every two years. This prediction became globally known as Moore's Law and Intel has kept that pace for nearly 40 years. The big winner in this continuous innovation is ultimately the consumer. The communications industry in the past has not had the competitive pressures that have been apparent in the computer industry and without these competitive pressures innovation is not required.

Hence the communications industry has been dominated by a limited number of local operators and international equipment providers that enjoy a mutually rewarding symbiotic relationship. In more recent times industry deregulation and progressive regulators have seen the emergence of a range of new equipment providers that closely adhere to industry standards and are more like computer industry players than traditional telecommunications players have ever been. This can only be good for the consumer too.

Accordingly, we suggest that the framework for any national broadband infrastructure should be “standards-based”, “technology-agnostic” and “network-neutral”. By adopting this approach, any ultimate network operator can invest in the technologies from vendors that are most appropriate to deliver a service that is cost and performance effective.

At this time optic fibre is clearly the most effective technology for fixed “core” networking. However, there is a case to argue that the dynamics of core networks and both static and mobile access networks are very different and should be considered separately. There is evidence to suggest that although FTTH/FTTP should be the ultimate goal for fixed broadband access it will not be economically sustainable across large tracts of Australia and that alternative access network technologies should be considered.

We recommend that there should be a clear regulatory line drawn between wholesale core network and retail access networks. We recommend that there should be open competition at retail access network services and that, wherever possible, open and consistent wholesale pricing should be available to any parties that may elect to build access networks and provide services over these networks.

We are seeing a trend towards an ever increasing demand for “personal mobile broadband” where an individual subscriber can configure their broadband service to their own particular needs based on their personal requirements and device preferences.

It is in the interest of incumbent operators to separate their fixed broadband services from their mobile broadband services to ensure maximum revenue opportunity.

Much of the innovation in communications is resulting in highly mobile data services that complement existing mobile voice services.

Should an innovative approach be adopted with regard to the core vs. access network debate then it would be possible to offer both the consumer and business an optimal common national broadband network that offers both fixed and mobile broadband services across a common infrastructure utilising the same consumer devices, whether in the home/office or the street/campus.

This also raises the issue of spectrum allocation/regulation and the digital dividend that may be appropriate to this debate.

The broadband and the broadcast industries have evolved from very different business models. The FTA broadcast model effectively operates a national broadcast network and delivers rich content to the consumer for free based on advertising. The broadband model is traditionally based on telephone operators who could charge for telephony service over time and distance. This has been very profitable over the years. As "convergence" accelerates we suggest that these two models could converge also. Many experts would suggest that digital broadcast networks are the most cost effective technology for the distribution of rich content on a one-to-many basis while digital broadband networks are most effective for packet-based interactive communication on a one-to-one basis.

We suggest again the core vs. access network is highly valid in both these cases and should be considered accordingly.

2.2 PRICING

In our experience neither the consumer nor business really cares what type of technology is utilised to deliver the content services they require, whether this be analogue-digital TV or copper-fibre-cable broadband. The most sensitive issue is the price of these services. If the price is too high, despite the technology being excellent, then the consumer will simply not subscribe. In Australia, a fine example of this is the early attempts to provide broadband services through ISDN. These services were priced at such a point that the subscriber did not sign-on. We fear that a similar issue will occur with NBN if there is an undue focus on the technology and not adequate focus on both wholesale and retail price points.

It is now generally agreed that the cost of building a FTTC/FTTN network covering 98% of the population will be significant. Given that unlike many other nations which are viewed as broadband benchmarks, Australia's broadband consumers are seeking significant amounts of their content from off-shore, predominantly USA and Europe. This effectively, despite local high-speed broadband speeds, can throttle the effective throughput of the network unless appropriate international bandwidth is available.

We suggest that the NBN should also consider the implications of (and perhaps investment in) adequate and competitive international links or the value of the local infrastructure investment may be diminished.

Congruent to the national vs. international traffic issue, broadband programs that cap downloads/uploads and shape traffic speeds downwards can undermine the NBN asset. We have high-speed xDSL and/or cable access in Australia today in many locations. The fact that, according to the subscriber data plan, these can be re-shaped to 64kb/sec, effectively dial-up modem speed, then the value of the service to the consumer is severely hindered.

We also recommend that capped broadband plans should also be considered as a component of the overall NBN model. We are not advocating any particular cap plan at this time, we suggest that more analysis is required, but it is worthy of note that some economies not dissimilar to Australia's do not have download/upload caps.

2.3 UTILITY BROADBAND

Many other industries around the world that were traditionally "natural monopolies", because of the high cost of infrastructure have been regulated to provide central wholesale services and highly competitive retail services. These industries include: electricity, gas, water, train, bus and even air travel.

We suggest that broadband should be considered in a similar regulatory framework and, as with these industries, both price and performance guarantees be agreed as part of the contract.

2.4 WHOLESALE

We have touched on the issues of wholesale vs. retail across many of the issues already raised. We would like to emphasise that for the economic health of the States and the regions we recommend that it is of import that xSP's who have invested significantly in infrastructure based on current regulatory settings be able to compete on a retail basis on a level playing field under any new regulatory settings.

2.5 SERVICE PROVIDERS

Operators have traditionally built and operated networks based on time and distance telephone whether fixed or mobile. Ever increasingly data networks, fixed and mobile, allow services to be offered that are independent of time and distance, services such as Skype, Google, eBay etc. As is evident in the equities markets, the valuations of these companies are far higher than that of traditional operators for obvious reasons, many of them touched on in this submission.

We recommend that an effective NBN regulatory model will allow new indigenous "digital economy" businesses to develop and prosper on the global stage, whether it is broad-based digital services such as content portals or industry specific digital services such as education or healthcare. These next-generation service providers focus on content delivery and are effectively facilities independent. It is these innovative young companies that will drive economic growth in to the future if a cost effective NBN can be provided.

Likewise, State and regional governments are investigating methods by which they can enhance their economic and community advantage through developing effective access networks and services in conjunction with local xSP's and local government and communities. There are numerous innovative models around the world where effectively community broadband has proven to be a significant advantage to communities particularly those in more remote locations.

2.6 METRO & REGIONAL

The relative RoI on a metro and regional NBN is significant. We are now hearing incumbent operators indicate that the costs of delivering NBN to regional areas will increase significantly as distance from CBD's increases. We suggest a flexible technology-agnostic approach to access networks such that the most appropriate technology, cost effective technologies and innovative business models can be utilised to deliver equitable access network regardless of the location of the subscriber. We propose to expand on this issue in a subsequent Submission on broadband solutions for remote areas.

2.7 SUSTAINABILITY & INNOVATION

As ever increasing pressure is applied to the nation's finite resources, long term sustainability is crucial to the national interest. Most pundits agree that an effective broadband infrastructure can and will allow better utilisation of these finite resources. There are many reports on methods by which effective broadband could reduce greenhouse gases and enhance power generation and utilisation.

We suggest that, when the national business case for NBN is considered, the value of the sustainability & national innovation elements should be accounted for.

2.8 WORLD BEST PRACTICE

Many economies that can be likened to Australia are adopting a mixture of regulatory approaches to their national broadband imperatives. It is interesting to note that every one of these is effectively drawing a line between wholesale core network provision and retail access and service provision.

We strongly recommend that a similar approach be adopted as a key component of the NBN regulatory framework.

3 CONCLUSION

In this submission, we have endeavoured to provide a list of issues that we believe are highly pertinent to the national interests.

We applaud the opportunity for interested stakeholders to raise regulatory issues and would welcome the opportunity to discuss any of the points raised in this submission should it be appropriate.