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Senate Select Committee Inquiry on the National Broadband Network

Submission by: Australian Mobile Telecommunications Association

July 2009

1. Introduction

- 1.1 AMTA is the peak industry body representing Australia's mobile telecommunications industry. AMTA's mission is to promote an environmentally, socially and economically responsible and successful mobile telecommunications industry in Australia. AMTA members include mobile Carriage Service Providers (CSPs), handset manufacturers, retail outlets, network equipment suppliers and other suppliers to the industry. For more details about AMTA, see <http://www.amta.org.au>.
- 1.2 The Australian Mobile Telecommunications Association (AMTA) welcomes the opportunity to comment on the Senate Select Committee on the National Broadband Network (NBN)'s revised terms of reference (TOR) relating to the Federal Government's NBN policy.
- 1.3 This submission addresses the Committee's TOR insofar as they relate to the mobile telecommunications, recognising the highly complementary nature of wireless and fixed line communications and the significant role that the mobile telecommunications will play in the NBN project.
- 1.4 Given the complementary relationship of fixed and mobile broadband services, AMTA has also sought to provide some context in relation to the mobile industry's spectrum needs based on demand for advanced mobile telecommunications services, particularly mobile broadband.

2. NBN and mobile broadband

Broadband: critical for Australia's future

- 2.1 Broadband is the infrastructure centrepiece of the digital age. Nations failing to invest in broadband will face an uncertain future in a world where global competitiveness will increasingly be technology dependent.
- 2.2 The influence and contribution of broadband and the digital economy continues to grow as technologies, services and applications reach further into all sectors of our economy and society, providing significant - and growing - social and economic benefits for all Australians.

The importance of mobile

- 2.3 The mobile telecommunications sector delivers a wide variety of mobile telecommunication services to both business and personal users in Australia, including voice services, Short Messaging Service (SMS) and Multimedia Message Service (MMS), mobile broadband, mobile TV and mobile commerce.

These services deliver flexibility and convenience to users with 'anywhere, anytime' affordable rich communications capabilities. They are an essential component of the modern digital economy.

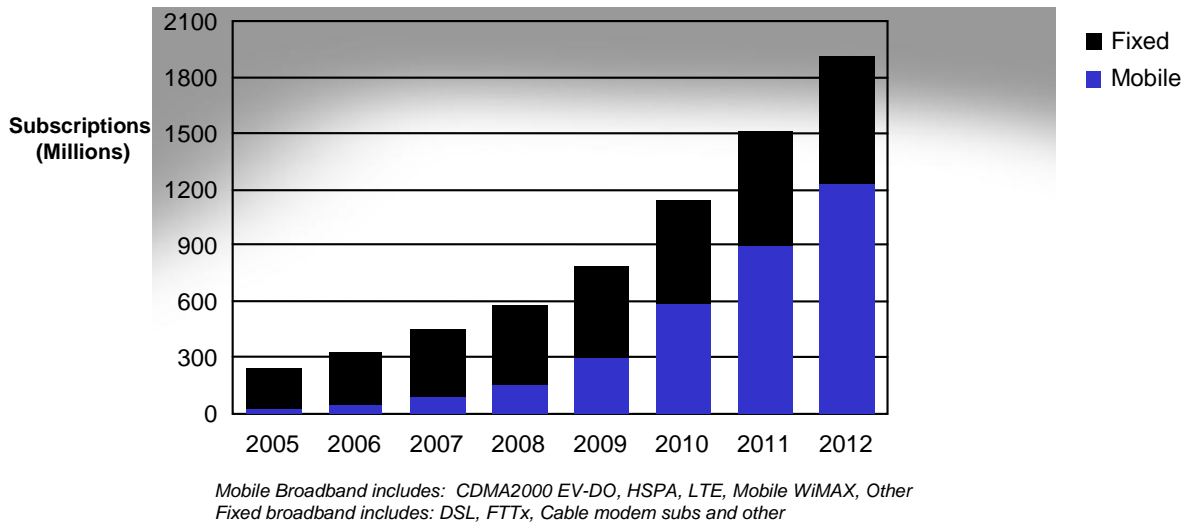
- 2.4 There is a steady upward trend in broadband adoption, including in more recent times a very rapid uptake of wireless broadband. Recent analysis of the current and future trends in voice and data usage over mobile devices, completed by Access Economics¹ on behalf of AMTA, found that:
- (a) the direct contribution of mobile telecommunications to the Australian economy was \$6.5 billion in 2006-07, or 0.62 percent of Gross Domestic Product (GDP), an increase of 4 percent on 2004-05;
 - (b) the indirect, or flow-on benefit from mobile telecommunications to the broader Australian economy was \$7.7 billion in 2007;
 - (c) combining the direct and indirect contributions, the mobile telecommunications industry contributed \$14.2 billion to the Australian economy in 2007;
 - (d) the indirect benefits from mobile voice and data, as measured by impacts on GDP, are estimated to rise to \$8.1 billion in 2008 and \$9.3 billion in 2010; and
 - (e) rising mobile data traffic flowing from the increasing uptake of third generation (3G) mobile telecommunications will contribute an additional \$2.1 billion to Australia's economic output in 2010.
- 2.5 Although voice remains the primary use of mobile devices, there is increasing uptake of other services, with recent significant growth in data and mobile broadband services. The number of 3G subscriptions grew by 88% in 2007-08 from 4.6 million to 8.6 million and there are now 22.12 million mobile phone services in Australia as at June 30 2008, up from 21.26 million.³
- 2.6 As at June 2008 there were an estimated one million mobile broadband connections in Australia via fixed customer-provided equipment (CPE), data card, USB modem, handset as modem or embedded connection².
- 2.7 This trend is set to continue with the continued uptake of 3G technology and, by 2010 it is predicted that globally mobile broadband will comprise two-thirds of all

¹ [A copy of the Australian Mobile Telecommunications Industry Economic Significance and Contribution 2008 is provided here.](#)

² *3G in Australia: HSPA mobile broadband boom*, Ovum, 10 November 2008

broadband subscription, as illustrated below³. Analysts further predict that mobile devices will be the primary tool to connect to the Internet by the year 2020⁴.

Global Broadband subscription forecast



Source: Ovum RHK & Internal Ericsson

- 2.8 The welfare gained by customers (consumer surplus) from using mobile telecommunications services in 07/08 was \$3,287.80 million compared to \$317.50 million for internet services. The majority of the increase in the consumer surplus is attributable to changes in the mobile telecommunications sector as prices fell and subscriber demand grew. In estimating the consumer surplus for mobiles, the Australian Communications and Media Authority (ACMA) calculated that mobile phone calls fell in price by 21.5% and the price of SMS/MMS decreased by 41.5%⁴.
- 2.9 The advancement of mobile telecommunication services and devices has led to significant indirect economic impacts estimated at \$7.7 billion in 2007, including substantial productivity gains for Australian businesses, for example, some firms have reported as much as a 25 percent productivity gain from using applications on 3G phones⁵. Access Economics also suggests by 2010, mobile data will be contributing a further \$2.1 billion to Australia's economic performance⁶.
- 2.10 In addition to the pure economic benefits, mobile voice and broadband applications are currently helping to connect remote communities, enabling remote medical diagnosis, delivering educational benefits, facilitating logistics and personnel planning and assisting with criminal investigations. Individuals and

³ Australian Mobile Telecommunications Industry: Economic significance and contribution, Report by Access Economics for AMTA

⁴See: http://www.google.com/hostednews/afp/article/ALeqM5hRqUtLnoHddm5mtz2bnn_aG5j6RA

organisations also benefit from the social and productivity benefits associated with mobile connectivity via voice and mobile broadband applications.

- 2.11 The rapid rise of mobile broadband services is strongly supported by consumers and the industry has responded by offering a range of latest generation competitive products and services and driving enhanced consumer value and choice.

Fixed line communications remain critical

- 2.12 Fixed networks will remain critical to Australia's continued participation in the digital economy. The success of wireless services is not a threat to fixed networks, rather the two are complementary; a point recognised and accepted both internationally and at home. For example:

- (a) The Minister for Broadband, Communications and the Digital Economy commented at the recent Radcomms Conference that:⁵

The National Broadband Network is a transformational project for the sector and will provide the foundations for productivity and efficiency across the economy.

Of course, while this is a crucial project, the National Broadband Network is not the only measure necessary to underpin Australia's communications future.

The Government is also addressing the necessary wireless and spectrum issues that will enable our nation to move confidently into the next phase of the connected economy.

There is no doubt about the complementary nature of wireless and fixed line communications.

In fact, this is clearly demonstrated in our vision for the National Broadband Network.

Equally, mobile broadband offers many benefits for users to access services and applications wherever they choose.

Indeed, the ability to switch between fixed and wireless networks is becoming increasingly commonplace in mobile devices such as PDAs and laptop computers¹.

- (b) The recently released report, *Getting the most out of the digital dividend in Australia*, noted that "while it is expected that there will be some mobile-fixed substitution from a consumer perspective, fixed networks remain critical for ubiquitous consistent quality of service and scalability"⁶.
- (c) Comments in the recent *Communications Market Report in 2008*⁷, a report by the United Kingdom's Office of Communications (OfCom), also acknowledge the technical reasons for fixed and wireless services operating in a complementary

⁵ Senator the Hon Stephen Conroy, Minister for Broadband, Communications and the Digital Economy, RadComs09

⁶ P15, Getting the most out of the digital dividend in Australia, Spectrum Value Partners/Venture Consulting, April 2009

⁷ A copy is available at: <http://www.ofcom.org.uk/research/cm/cmr08/telecoms/telecoms.pdf>

fashion⁸. The report also notes competitive forces as a factor for ensuring on-going fixed relevance, at least in the UK market, with healthy tariff competition between fixed and mobile players⁹.

- 2.13 The NBN project will be a major component of Australia's digital economy in partnership with the latest generation mobile telecommunications networks and applications.

3. Key issues for the mobile industry

Spectrum

- 3.1 Given the complementary relationship of mobile and fixed broadband services and the central role both will play in Australia's digital economy, it is essential the NBN project take full account of the required future use and management of spectrum to support mobile broadband growth.
- 3.2 Just as fibre to the home (FTTH) is the Government's chosen infrastructure model to support the future of fixed broadband services in Australia, so the allocation of spectrum is the key infrastructure element to fully exploit the potential of mobile broadband. Future spectrum allocations are critical to realising the full potential of mobile telecommunications through the convergence of two of the most influential technological developments of the digital age - the mobile phone and the internet.
- 3.3 Specifically three of the most significant spectrum management issues facing the Government are:
- (a) the confirmation of policy approach to be adopted on the expiration of current 15 year spectrum licences;
 - (b) the future use of spectrum in the 700MHz band that is able to be recovered following the switch off of analogue TV (referred to as the "digital dividend"); and
 - (c) the future spectrum needs of the mobile industry with respect to the globally harmonised band 2500-2690 MHz, currently used in Australia by the television industry for electronic news gathering (ENG).
- 3.4 Each of these issues is described below. Implications and comments relating more specifically to the NBN are then considered.

⁸ IBID, pages 301-303.

⁹ IBID, p296

Spectrum licence re-issue

- 3.5 AMTA believes the Government should adopt a policy position that supports the reissue of spectrum licences used for the supply of mobile telecommunications. The adoption of such an approach would:
- (a) support the existing investments in mobile networks and maintain the community benefits derived from their operations;
 - (b) reduce commercial uncertainty for mobile carriers, promoting greater incentive for investment in next generation mobile networks;
 - (c) secure the necessary lead time required to allocate capital for investment in spectrum; and
 - (d) avoid the need for multiple decisions over the period 2013-2017 that each require a public interest test by ACMA on the merits of re-issuing specific spectrum licenses to mobile carriers.
- 3.6 AMTA would then encourage the Minister to make a determination using existing powers under section 82(3) of the *Radiocommunications Act 1992* (the Act) that public mobile telecommunications (including future mobile broadband) services are a class of services where re-issuing of incumbent spectrum licences would be in the public interest.
- 3.7 AMTA recommends that the process of making a determination be completed well in advance of (at least three years prior to) the expiry of the first spectrum licence in 2013.

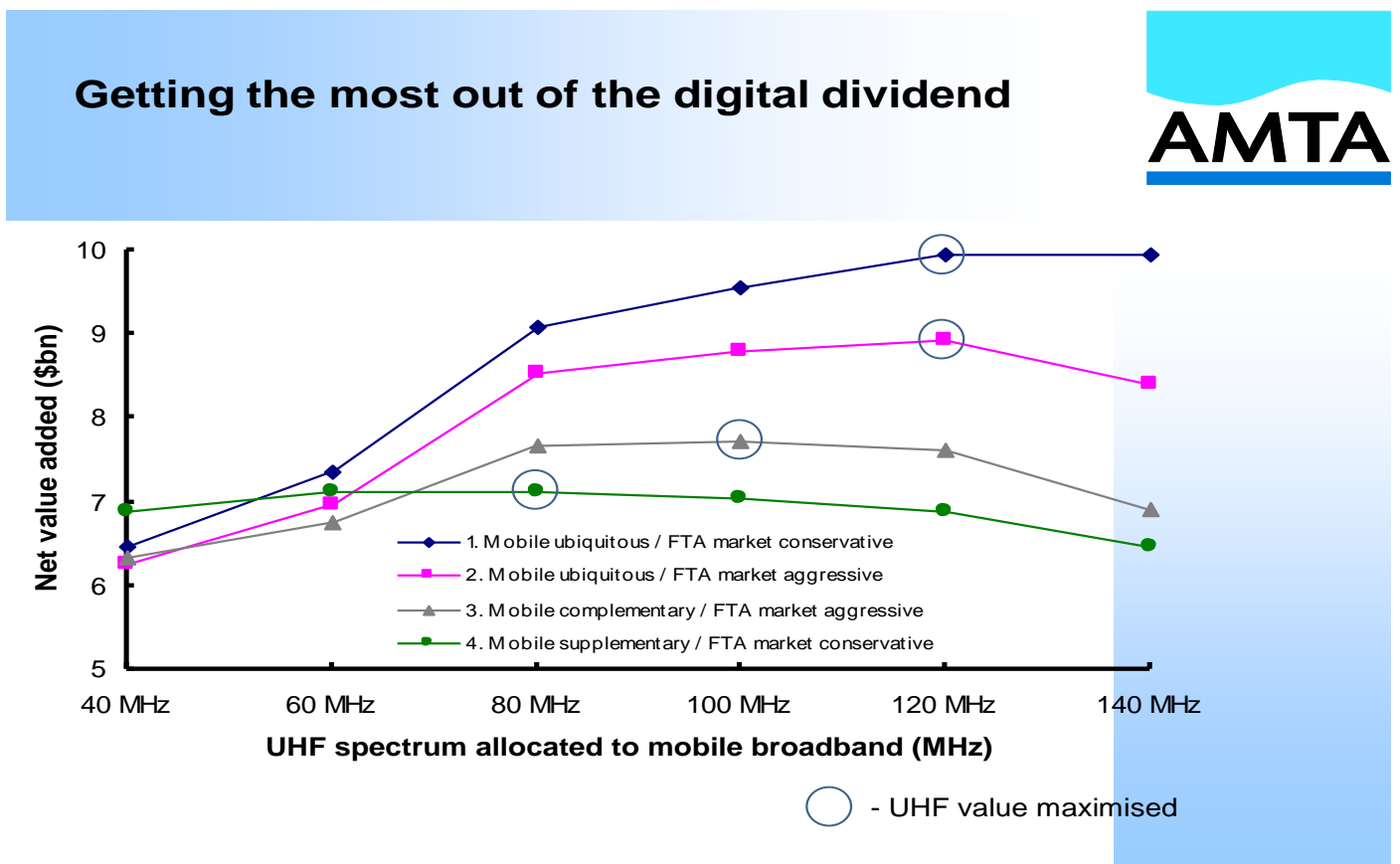
Digital Dividend (700MHz)

- 3.8 The spectrum to be freed as part of the digital dividend represents a once-in-a-generation opportunity for a significant reallocation of spectrum to allow the introduction of new and enhanced mobile broadband services post-analogue TV switch-off.
- 3.9 The spectrum to be released by the digital dividend in and around the 700MHz band offers an excellent combination of transmission capacity and distance coverage. These good signal propagation characteristics mean significantly fewer base stations and infrastructure are required to provide wider mobile coverage, especially throughout rural and regional areas.
- 3.10 A report by international economic consultants, Spectrum Value Partners and commissioned by AMTA, found that by modelling a number of mobile and broadcast market scenarios Australia's economy would be boosted by up to \$10 billion if at least 120MHz of useable spectrum was unlocked from the digital dividend to support mobile broadband use.

3.11 The report derived an 'optimal split' of digital dividend spectrum between mobile telecommunications and broadcasting use and found that spectrum allocation is 'optimal' when the net economic value generated from combined mobile and broadcasting services use is at a maximum.

3.12 In rural areas, where population density is lower, the propagation characteristics of digital dividend spectrum are more critical for mobile coverage. As a result, the report found that the maximum net economic benefit will be realised with an allocation to mobile of 140MHz of usable spectrum.

3.13 The exhibit below illustrates the net value added to the Australian economy by allocating a varied amount of the digital dividend UHF spectrum for mobile broadband services under different overall market scenarios.



Source: Spectrum Value Partners, 2009 *Getting the most out of the Digital Dividend in Australia*

3.14 The modelling approach adopted in the report is conservative and intentionally favours the broadcast industry. Thus, the range of allocation of digital dividend spectrum to mobile operators could reasonably be taken as a minimum allocation range.

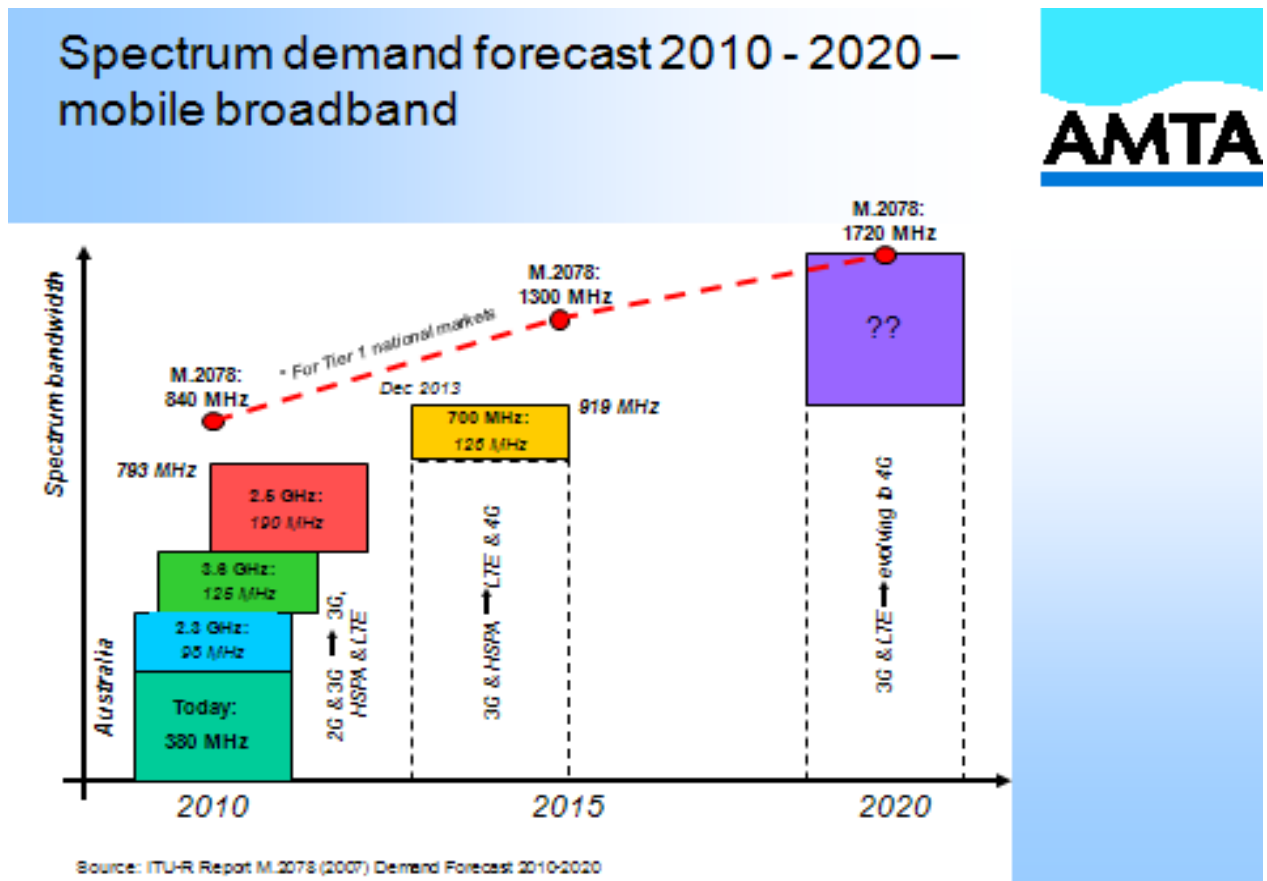
3.15 In relation to the digital dividend, AMTA considers that:

- (a) there is real demand and clear public interest in not retaining the digital dividend as a broadcasting-only band post analogue switch off. Further, there are clear

international commitments to reallocate digital dividend spectrum to wireless broadband;

- (b) retaining digital dividend spectrum as a broadcasting-only band would deny Australia the economic and productivity benefits that advanced wireless broadband technology will deliver;
- (c) spectrum should be allocated in contiguous 2 x 20 MHz blocks that will maximise support opportunities from the deployment of advanced wireless broadband technologies such as Long-Term Evolution (LTE) operating in the Frequency Division Duplex (FDD) mode.

Spectrum Demand



3.16 The International Telecommunications Union (ITU) conducted a four year peer reviewed study of future mobile broadband spectrum needs that: considered a range of market densities and user traffic rates ; used a detailed breakdown of 20 service categories; assumed low, medium and high growth scenarios; accommodated different domestic market parameters.

- 3.17 The graph's curve line is the total forecast wireless spectrum demand in dense 'Tier 1' markets (this includes Australia). The key message is that all of the existing allocated mobile spectrum, the fixed wireless access (2.3GHz) eg WIMAX, the announced regional wireless access band (3.6GHz), plus the globally earmarked 2.5GHz/2.6GHz band and the 700MHz Digital Dividend band are required to accommodate the extremely high ongoing forecast growth in mobile broadband services in the first half of this 10 year planning period.
- 3.18 In other words forecast demand for spectrum available for International Mobile Telecommunications (IMT) continues to exceed current allocations globally as well as in the Australian context. Moreover, this 2006 ITU study is likely to be conservative as the actual changes in demand for advanced mobile services, particularly mobile broadband, are tending to exceed forecasts.
- 3.19 Another key aspect of spectrum allocation is the alignment of Australia's digital dividend spectrum with global trends in spectrum allocation. Internationally, spectrum arising from the digital dividend has already been identified for use by IMT, and AMTA notes that nine administrations in our region (including New Zealand, Japan, Korea, China and India) have recently indicated that they support the use of the 700 MHz band for IMT.

Re-allocating 2500-2690 MHz

- 3.20 Internationally, the frequency band 2500-2690 MHz was identified for worldwide mobile technology use some nine years ago by World Radio Conference 2000 and, since then, numerous administrations in Europe, North America and the Asia-Pacific have either re-planned, or are currently re-planning this band, to support mobile broadband wireless applications.
- 3.21 AMTA's position on the 2500-2690 MHz band is simple. Noting the considerable time since the band was internationally identified for mobile use, and noting the recent action by many comparable administrations to Australia to make the band available for mobile applications including mobile broadband, AMTA is urging the Government to reallocate the band as soon as possible.
- 3.22 AMTA understands that the main incumbent usage in the 2500-2690 MHz band is outdoor broadcasting/ENG television applications. AMTA also notes that parts of the 2025-2110/2200-2300 MHz bands appear to be suitable and available for ENG. AMTA therefore recommends that the Government moves to quickly finalise a priority timetable to re-locate the ENG service to parts of those bands.

Spectrum and the NBN

3.23 AMTA notes Object 1 of the Radiocommunications Act 1992;

The object of the Act is to provide for management of the radiofrequency spectrum in order to:

maximise, by ensuring the efficient allocation and use of the spectrum, the overall public benefit derived from using the radiofrequency spectrum

3.24 AMTA has given in principle support to spectrum management and allocation principles articulated by the ACMA as follows;

- (a) *Allocate spectrum to the highest value use or uses;*
- (b) *Enable and encourage users to move spectrum to its highest value use or uses;*
- (c) *Use the least cost and least restrictive approach to achieving policy objectives;*
- (d) *Balance certainty and flexibility;*
- (e) *Balance the cost of interference and the benefits of greater spectrum utilisation.*

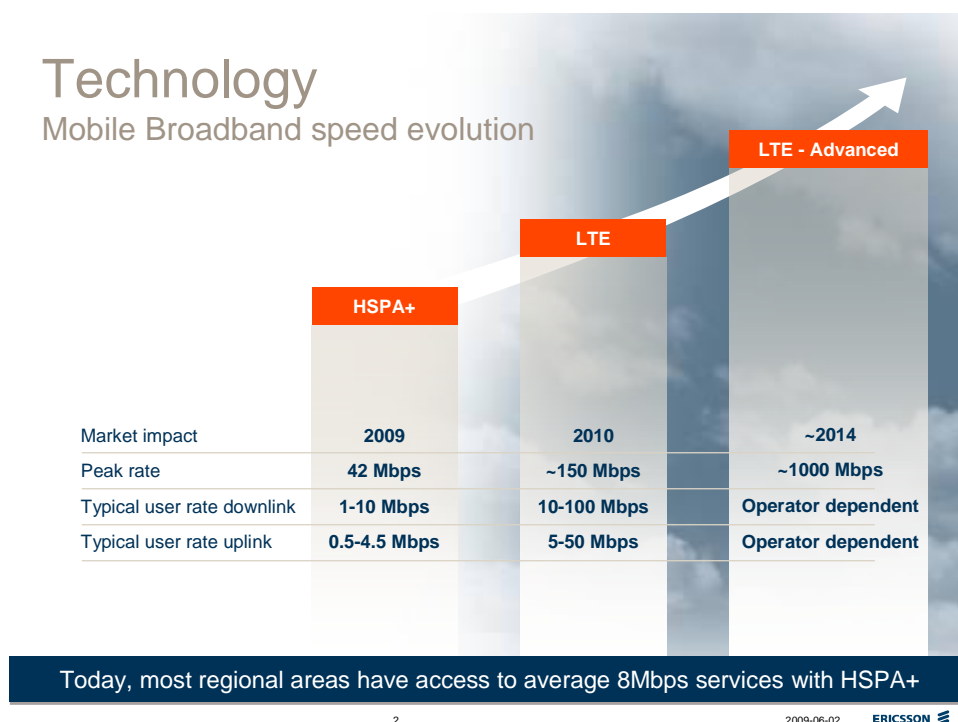
3.25 In principle, AMTA supports allocating spectrum to its highest value use. Typically, the best means of determining the highest value use for new spectrum allocations is to use a market-based approach. Such an approach is also the most appropriate means of encouraging competition between different, but economically viable, technologies.

3.26 Next generation wireless networks such as Long Term Evolution (LTE) are spectrum intensive. Mobile network operators in Australia will require more spectrum if they are to deploy and optimise the capacity and use of next generation wireless technology.

3.27 Australia's market-based approach to the management of spectrum over the last two decades has positively impacted innovation in service deployment. The scarcity of spectrum coupled with the highly competitive and fast moving nature of the mobile telecommunications sector suggest that it is appropriate to continue such a market-based approach. AMTA therefore recommends that a market-based approach to the management of spectrum continue.

3.28 In particular, it is AMTA's view that spectrum should not be reserved specifically for the NBN project. Reservation of NBN specific spectrum would be inefficient, wasteful and not in consumers' interest. High quality commercial mobile broadband services are available today and also have a clear evolutionary path to deliver even higher bandwidth services in the near future. Allocation of NBN specific spectrum would not align with the Radiocommunications Act – see 3.23.]

3.29 The chart below depicts technology performance expectations for upgrades and future technologies which will deliver significant increases in speed, demonstrating that the existing industry will be well placed to meet the NBN requirements in the future, provided the necessary spectrum resources are made available in a timely manner.



3.30 These points all suggest that close consultation between the NBN company and existing industry players is absolutely critical. This would ensure accurate demand analysis and consideration of the best way to meet such demand (considering the availability of existing and imminently available commercial services, competition and efficiency issues, for example.)

Other issues

3.31 AMTA does not support any review or amendment to Schedule 3 of the *Telecommunications Act 1997, the Telecommunications (Low-impact Facilities) Determination* (the Determination) or related Deployment of Mobile Phone Infrastructure Code (the Code).

3.32 Any disruption to the current regime may significantly disrupt the upgrade and/or deployment of evolving telecommunications networks and jeopardise the positive outcomes the regime has helped generate.

3.33 Both Schedule 3 and the Determination are reasonably well understood by local government and referenced in an increasing number of State planning instruments. In conjunction with the Code, the demonstrated level of community concern and

objections referable to the Telecommunications Industry Ombudsman (TIO) have reduced year on year since 2006.

- 3.34 AMTA suggests that given the unique requirements of the NBN, access to necessary facilities may require a separate (and specific) legislative provision to facilitate network deployment. AMTA does not believe changing the existing facilities access regime under Schedule 3 specifically for the NBN would provide any significant benefits for NBN deployment.

4. Conclusions

- 4.1 Broadband is the infrastructure centrepiece of the digital age. Nations failing to invest in broadband will face an uncertain future in a world where global competitiveness will increasingly be technology dependent.
- 4.2 The NBN project will be a major component of Australia's digital economy in close partnership with the latest generation mobile telecommunications networks and applications.
- 4.3 Given the complementary relationship of mobile and fixed broadband services and the central role both will play in Australia's digital economy, it is essential the NBN project take full account of the use and management of spectrum to support mobile broadband.
- 4.4 Just as FTTH is the Government's chosen infrastructure model to support the future of broadband services in Australia, so spectrum is the key infrastructure element to fully exploit the potential of mobile broadband.
- 4.5 Close consultation between the NBN company and existing industry players is critical to ensure the efficient, competitive and affordable provision of broadband services nationally.

AMTA looks forward to the opportunity to discuss this submission in more detail with the Senate Select Committee on the National Broadband Network.

For further information or clarification please contact Policy Manager, Peppi Wilson, at AMTA on 02 6239 6555 or email peppi.wilson@amta.org.au