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**House of Representatives Standing Committee on
Economics:**

**Inquiry into raising the level of
productivity growth in the
Australian Economy**

Submission by: Australian Mobile Telecommunications Association

August 2009

1. Introduction and background

- 1.1 The Australian Mobile Telephone Association (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 AMTA welcomes the opportunity to comment on the House of Representative's Standing Committee on Economics Inquiry into raising the level of productivity growth in the Australian Economy.
- 1.3 This submission focuses on issues of particular interest to AMTA members. AMTA would be happy to provide further information on these or any other relevant issues.

2. Executive summary

- 2.1 The mobile telecommunications industry is critical to advancing Australia's productivity. Mobile technologies and services are increasingly central to enabling Australians' participation in the digital economy.
- 2.2 Productivity benefits from advanced mobile services and applications such as mobile broadband are clearly outlined in this submission. For example, some firms have already reported 25 percent productivity gains from using latest generation 3G services. In a similar vein, the *Digital Britain* Interim report suggests that innovation accounts for one third of labour productivity improvements¹. Mobile services such as mobile broadband also offer considerable social and environmental gains.
- 2.3 Past experience suggests that even the most optimistic and forward thinking predictions of growth and use will be limited by ignorance of yet-to-be developed applications or services; recall early predictions about the impact of electricity, computers or more recently, the Internet. The productivity and connectivity benefits of broadband – both fixed and mobile – are currently unimagined as a new paradigm emerges based on technologies such as optical fibre, anytime, anywhere mobile access, imbedded internet protocols and machine to machine applications.

¹ P14-15, *Digital Britain, The Interim Report*, Department for Culture, Media and Sport and Department for Business, Enterprise and Regulatory Reform. January 2009.

- 2.4 AMTA's members believe that the right infrastructure elements must be in place to support this innovation and service development if Australia is to enjoy the potential productivity, social and environmental benefits.
- 2.5 The essential infrastructure element for any mobile service is the ability of the network operator to access and use radiofrequency spectrum. The mobile sector's significant and growing contribution to productivity and connectivity within the Australian economy - and therefore Australia's overall participation in the global digital economy - will only be maximised if sufficient and appropriate radiofrequency spectrum is made available to the industry.
- 2.6 To that end, the industry is seeking three enabling actions from the Government:
- (a) certainty and a timely process in relation to the re-issue of spectrum licences for the spectrum held by incumbent mobile carriers;
 - (b) access to additional spectrum, in the 700MHz (the 'digital dividend') and 2.5GHz bands, to support the ongoing rapid growth of mobile broadband services and the roll-out of next generation mobile broadband services such as Long Term Evolution (LTE); and
 - (c) an ongoing stable, predictable and minimally intrusive regulatory regime.
- 2.7 Mobile operators are ready to invest in the next generation of mobile networks. In order to make this major investment they are seeking certainty on the enabling actions that are required from Government, as outlined above, in a reasonable timeframe.

3. Mobile: critical to Australia's productivity growth

- 3.1 This section explores the mobile industry's current and expected contribution to Australia's productivity and the relationship between fixed and mobile telecommunications. It also considers the international perspective. Section 4 then goes on to explore the key decisions and actions required by government domestically to ensure that Australia will be in a position to take advantage of the huge potential productivity gains on offer from mobile telecommunications technology.
- 3.2 Productivity growth in Australia, as in other nations worldwide, is strongly linked to the digital economy. Senator Stephen Conroy, Minister for Broadband, Communications and the Digital Economy, recently stated:

“The digital economy is essential to Australia's productivity, global competitive standing and improved social wellbeing.

The digital economy can also drive Australia's national productivity, create jobs and support new business opportunities.”²

- 3.3 Advanced mobile services and applications are increasingly central to enabling Australians' participation in the digital economy. The mobile telecommunications industry is a significant - and growing - contributor to Australia's productivity and its economy. The Industry 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.
- 3.4 There is a steady upward trend in broadband adoption, including in more recent times a very rapid uptake of wireless broadband. 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 million³.
- 3.5 This trend is set to continue. By 2010 it is predicted that globally mobile broadband will comprise two-thirds of all broadband subscription⁴. Analysts further predict that:
- (a) mobile devices will be the primary tool to connect to the Internet by the year 2020⁵; and
 - (b) users of mobile broadband services will grow from 181 million in 2008 to over two billion in 2014, a growth of 1024 percent⁶.
- 3.6 Globally, the mobile industry is forecast to invest \$800 billion during the next five years, with independent estimates by A T Kearney identifying that \$550 billion of this is earmarked for mobile broadband⁷.

² See:

http://www.dbcde.gov.au/digital_economy/future_directions_of_the_digital_economy/australias_digital_economy_future_directions/snapshot

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

⁴ *Australian Mobile Telecommunications Industry: Economic significance and contribution*, Report by Access Economics for AMTA

⁵ See: http://www.google.com/hostednews/afp/article/ALeqM5hRqUtLnoHddm5mtz2bnn_aG5j6RA

⁶ <http://www.totaltele.com/view.aspx?C=0&ID=444434>

⁷ http://www.gsmworld.com/newsletter/public_policy/newsflash_G20_02_april.htm

- 3.7 Such growth is critical in helping Australia and other developed nations recover from the global financial crisis. For example, the World Economic Forum's recent report *ICT for Economic Growth: A Dynamic Ecosystem Driving the Global Recovery*, provides an analysis of how information and communication technologies (ICT) can serve as fundamental enablers for the global economic recovery⁸.
- 3.8 Locally, Access Economics estimates that the effective deployment and adoption of intelligent technologies will add an estimated 1.5% to the level of GDP within a few years. Over ten years, Access estimates a boost of \$80 billion and an additional 70,000 jobs⁹.
- 3.9 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.
- 3.10 Recent analysis of the current and future trends in voice and data usage over mobile devices, completed by Access Economics¹⁰ 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 3G mobile telecommunications will contribute an additional \$2.1 billion to Australia's economic output in 2010.

⁸ http://www.weforum.org/en/media/Latest%20Press%20Releases/PR_ICT09

⁹ Access Economics, *The economic benefits of intelligent technologies*, May 2009

¹⁰ A copy of the Australian Mobile Telecommunications Industry Economic Significance and Contribution 2008 is provided here (click to follow link).

- 3.11 In a short timeframe, commonly used mobile data services have advanced from SMS to email, document sharing, web browsing, multi-media messaging and social networking. The advancement of mobile telecommunication services and devices has led to significant indirect economic impacts, including productivity gains for Australian businesses. For example, some firms have reported as much as a 25 percent productivity gain from using applications on 3G phones¹¹.
- 3.12 The impact of the latest generation mobile services is also providing numerous social benefits. For example, mobile applications are currently helping to connect remote communities, enabling remote medical diagnosis, delivering educational benefits, facilitating logistics and personnel planning, financial services and assisting with criminal investigations. Individuals and organisations also enjoy the social and productivity benefits associated with mobile connectivity via voice telephony, data services and internet access. This includes the explosion of Web 2.0 including social networking applications and user-generated content (being used commercially, socially and by government), both via fixed and mobile technologies.

Case studies

- 3.13 AMTA provides the following case study summaries¹² to illustrate some of the productivity benefits derived from mobile broadband.
- (a) Newcastle based plumbing outfit, the Plumbing Doctor, is a small business with 11 plumbers on its books. Six months after investing in wireless technology, the company reports that its investment has helped it emerge from its toughest trading period in its five-and-a-half year history.
- The Smart phones enable electronic ordering, invoicing and job dispatch, saving at least \$200 a day in paperwork and productivity for each of the company's eleven plumbers.
- By slashing the paperwork load, the company saves a further \$40,000 a year in labour costs.
- (b) In the Great Barrier Reef, the Australian Institute of Marine Science is using mobile data buoys to conduct research on coral reefs, collecting real-time data up to 70kms offshore.

The speed and efficiency of the system enables faster and more proactive measures to protect the coral reef. And by not sending out boats to collect the

¹¹ *Australian Mobile Telecommunications Industry: Economic significance and contribution*, Report by Access Economics for AMTA

¹² Concept Economics, *Next G Productivity Impacts Study*, February 2009

data, cost savings of about \$150,000 per year are achieved whilst at the same time minimizing environmental impacts.

- (c) Mobile broadband can also make a real difference in the health sector.

The Royal District Nursing Service in Victoria has discovered a vast improvement in providing patient care at their homes and business.

With over one thousand nurses on the road, the nursing service is experiencing the benefit of being able to access and update client records remotely.

The use of mobile technology is allowing nurses to manage and spend more time with individual clients.

- 3.14 These three pioneers of mobile broadband highlight just a few of the broad range of productivity and other benefits that can be delivered.

Fixed and mobile telecommunication services

- 3.15 It is important to understand that wireless and fixed networks are highly complementary, a point recognised and accepted both internationally and at home. Both are necessary for Australia's productivity growth. For example:

- (a) The Minister for Broadband, Communications and the Digital Economy commented at the recent Radcomms Conference that:¹³

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.¹

- (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

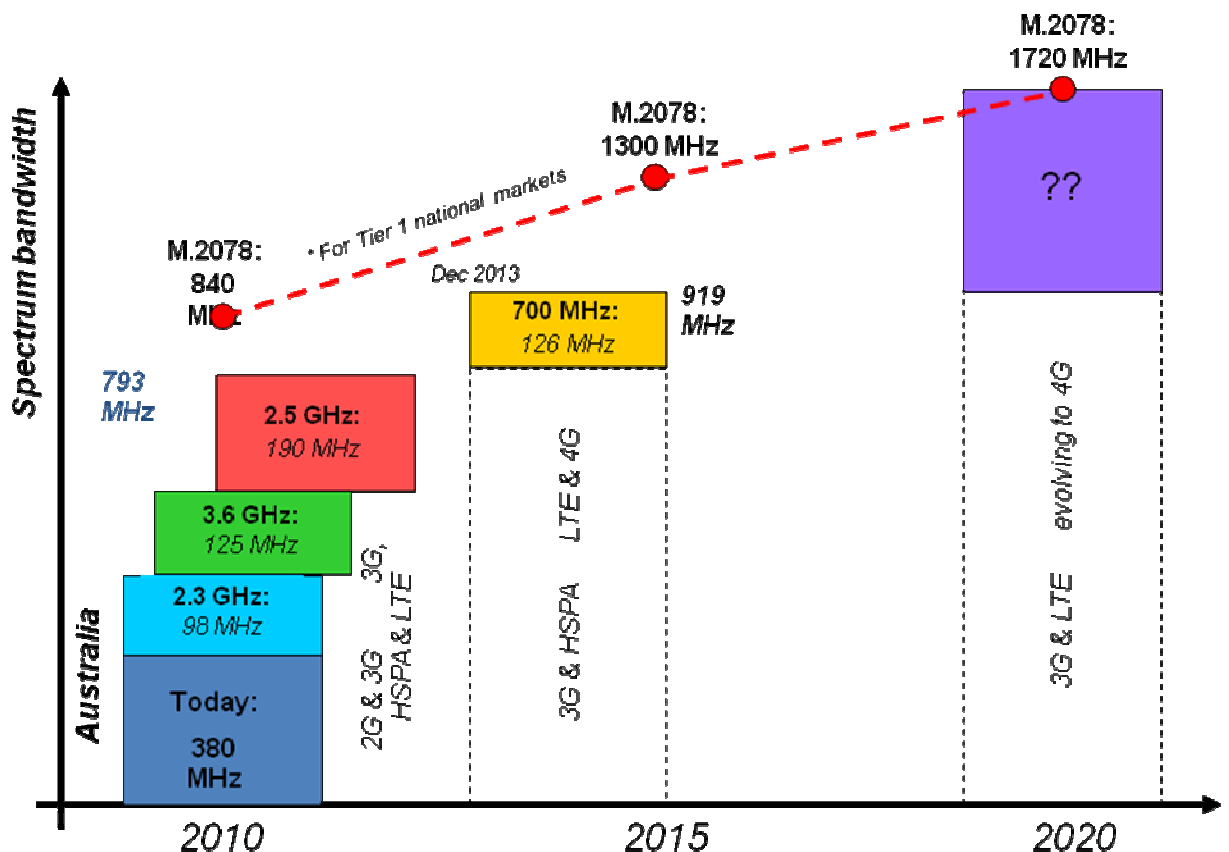
¹³ Senator the Hon Stephen Conroy, Minister for Broadband, Communications and the Digital Economy, RadComs09

substitution from a consumer perspective, fixed networks remain critical for ubiquitous consistent quality of service and scalability”¹⁴.

Future spectrum demand projections and international context

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. The results are illustrated in the graph below.

Spectrum demand forecast 2010-2020 – mobile broadband



Source: ITU-R Report M2078 (2007) Demand Forecast 2010-2020

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

¹⁴ P15, Getting the most out of the digital dividend in Australia, Spectrum Value Partners/Venture Consulting, April 2009

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.

4. Elements required to ensure productivity gains are realised

- 4.1 As the government recognises, access to broadband is critical if Australian businesses and individuals are to reap the full benefits of participation in the global digital economy. The geographic and demographic conditions in Australia are driving very wide economic mobile coverage and capacity and dictate that wireless broadband services are even more important here than in many otherwise comparable nations.
- 4.2 Given future demand projections, there is a critical need to address future mobile growth trends from an infrastructure perspective. Radiofrequency spectrum is the most fundamental infrastructure for the provision of mobile telecommunication services. Without it, mobile service is not possible. Further, the type and amount of radiofrequency spectrum made available for mobile telecommunications will markedly influence performance and service levels.
- 4.3 Mobile telecommunications technologies' significant and growing contribution to productivity, the Australian economy - and therefore Australia's overall participation in the digital economy - will only be maximised if sufficient and appropriate radiofrequency spectrum is made available to the industry. New spectrum allocations and re-planning is vital if predicted efficiency gains are to be realised.
- 4.4 Industry is seeking three enabling actions from the Government:
- (a) certainty over the re-issue of incumbent spectrum licences for the spectrum held by mobile Carriers;

- (b) access to additional spectrum, in the 700MHz (the 'digital dividend') and 2.5GHz bands, to allow for the ongoing rapid growth of mobile broadband services and the roll-out of next generation mobile broadband services such as Long Term Evolution (LTE); and
- (c) an ongoing stable, predictable and minimally intrusive regulatory regime.

Each of these issues is examined below.

Licence re-issue

- 4.5 Ongoing access to existing spectrum allocations, including those covered by 15 year licences, plus access to additional spectrum allocations, is critical to realising the full potential of mobile telecommunications services and the exciting benefits provided through the convergence of two of the most influential technological developments of the digital age - the mobile phone and the internet.
- 4.6 Reissue of licences is vital to the regulatory certainty and confidence needed to plan investments and innovations which in turn relate directly to the aims and objectives of Australia's spectrum management framework. For example, the Australian Communication and Media Authority's (ACMA) Spectrum Management Principles (the Principles) recognise the need to balance certainty with flexibility. In particular, the Principles note that *'in order for licensees to have sufficient certainty about their rights to use the spectrum to support long-lived assets, licensees must have sufficient tenure and stable, flexible regulatory frameworks'*¹⁵.
- 4.7 The absence of certainty of tenure is likely to have a detrimental impact on the willingness of mobile operators to undertake any significant investment in the period leading up to licence expiry and beyond.
- 4.8 AMTA supports allocating spectrum to its highest value use and advocates that the highest value use or uses for existing mobile telecommunications spectrum is the continued operation of mobile telecommunications services and that any alternate use would not generate the same economic and social benefits to the community.
- 4.9 However, AMTA expects this criterion to approach 'value' in the broader economic and social contexts. It should not simply be a monetary based outcome.
- 4.10 AMTA also notes the different context, but highlights the relevance of, the Minister's recent comments in relation to Digital Dividend spectrum made at Radcomms 2009:

¹⁵ Principle 4, cited p22, Spectrum Management Principles, Consultation on ACMA's Draft Spectrum Management Principles, April 2008

“It is also important to note that the digital dividend is not about revenue to the Budget. The true value of the digital dividend lies in the economic and social benefits of the services that it can support.”¹⁶

- 4.11 AMTA contends that the process of making a determination must be completed well in advance of (at least three years prior to) the expiry of the first spectrum licence in 2013.

Access to additional spectrum

- 4.12 The recently released British report, *Digital Britain, The Interim Report, January 2009*, illustrates that Government’s recognition that spectrum allocation decisions for the mobile industry are critical to the further development of that nation.

Broadband digital communications are today what electricity was a century ago to our Edwardian forebears. And they are at about the same relative state of development: applications for business and industry are relatively well advanced. Use in the workplace [is] increasingly common; basic uses in a significant and growing number of homes. The far sighted Edwardians knew that electricity in the home would soon go beyond just domestic lighting to be a major power source for new devices, applications and services.

*Even so, the extent to which electricity would be ubiquitous today and the revolutionary impact it has had on all aspects of our lives...was unimagined. **But even within a few years, those countries that had adopted early and built national core and access networks led in innovation. They pioneered the new growth sectors that become the motors of economic prosperity.** (emphasis added)*

Broadband digital networks...will be a major spur to innovation in the economies that adopt it. Available evidence shows that innovation accounts for one third of labour productivity improvements¹⁷.

Britain needs to match the development in its fixed infrastructure with its mobile infrastructure. Nationally, our consumer and content demands are increasing for data, pictures and information as well as conversation, on the move. The mobile phone has become the one device no digital citizen wants to leave home without.

In order for the innovation and service development to happen we must have in place the right elements, invisible to the user.

The essential element for any wireless service...is the ability of the network operator to access and use radio spectrum.

¹⁶Senator the Hon Stephen Conroy, Minister for Broadband, Communications and the Digital Economy, Radcoms 2009

¹⁷P14-15, *Digital Britain, The Interim Report*, Department for Culture, Media and Sport and Department for Business, Enterprise and Regulatory Reform. January 2009.

The prize is significant. The industry is approaching an unprecedented technology transition. ... We are about to begin a transition to a 4th generation of mobile radio technology, the so-called Long-Term Evolution (LTE) technology, beginning in earnest as early as 2011.

This change will be hugely important for digital Britain because:

- *Mobility is now vital to consumers and business alike. This much prized flexibility will apply equally to mobile broadband.*
- *Mobile broadband has an important role to play in stretching the universal coverage of broadband to the extremities of the UK.*

It is vital for the UK to be at the leading edge of this change so that people in this country enjoy cutting edge services on the move. ... The long term goal is any content...over any network...on any handset...anywhere.¹⁸

- 4.13 Clearly the situation in Australia is no different. Indeed, as noted earlier, our geographic and demographic conditions suggest that mobile broadband is even more important here.
- 4.14 As the *Digital Britain* Report notes, there is a clear wireless technology and services roadmap to deliver the next 4th generation Long Term Evolution (LTE) 100Mbit/s + services. This work is very well advanced down the global standardisation path, with substantial Research and Development resource programs fully committed. The outcomes of these programs are already being applied by the global equipment manufacturing industry to bring the next generation of very high speed broadband networks and services to the world market from 2009/2010. Carriers' service introduction plans are already well advanced.

Digital dividend

- 4.15 Identification of the appropriate spectrum bands to provide good coverage and capacity for LTE and other broadband networks has now been undertaken by the International Telecommunications Union (ITU).
- 4.16 The key band for wide area coverage is the reallocation of a portion of the UHF TV broadcasting band in the 700MHz range – the so called 'Digital Dividend' which is to be freed up when analogue TV broadcasting is switched over to the more efficient digital broadcasting.
- 4.17 The reallocation of the digital dividend is currently progressing worldwide and it is critically important that the process in Australia is progressed in a timely manner

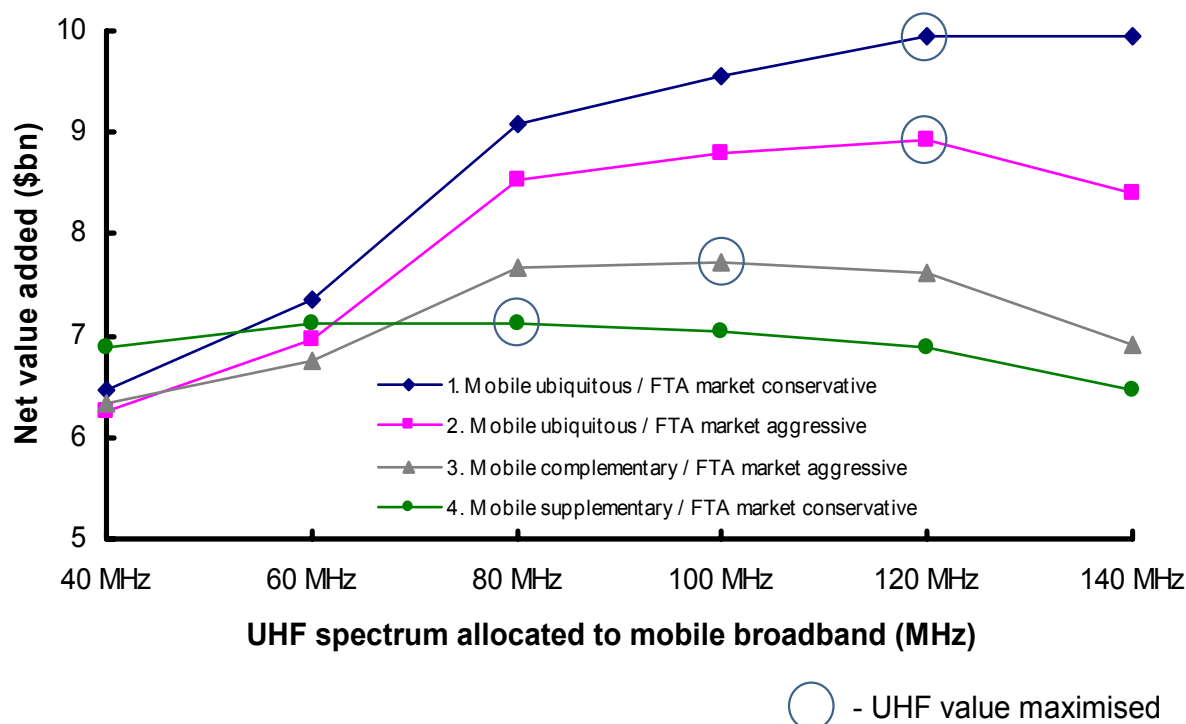
¹⁸ P25-27, *Digital Britain, The Interim Report*, Department for Culture, Media and Sport and Department for Business, Enterprise and Regulatory Reform. January 2009.

and provide sufficient spectrum to keep Australia as a leading nation in the provision of wireless broadband services and a key player in the global digital economy.

- 4.18 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.
- 4.19 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 less infrastructure are required to provide wider mobile coverage, especially throughout rural and regional areas.
- 4.20 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.
- 4.21 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.
- 4.22 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.
- 4.23 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 scenarios¹⁹.

¹⁹ Spectrum Value Partners 2009 *Getting the most of the Digital Dividend in Australia*

Getting the most out of the digital dividend



4.24 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.

4.25 AMTA's position on the digital dividend is 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.

Re-allocating 2500-2690 MHz

- 4.26 In addition to the digital dividend spectrum, the 2.6GHz band is key to providing high service capacity, particularly in urban areas.
- 4.27 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.
- 4.28 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.
- 4.29 AMTA understands that the main incumbent usage in the 2500-2690 MHz band is outdoor broadcasting/Electronic News Gathering (ENG) television applications. AMTA also notes that parts of the 2025-2110/2200-2300 MHz bands appear to be suitable and available for ENG.
- 4.30 AMTA further notes that ENG functions can be performed through Internet Protocol (IP) functions, with Channel 10 news teams reportedly relying " primarily on the Telstra NextG mobile wireless network"²⁰.
- 4.31 AMTA therefore recommends that the Government moves to quickly finalise a priority timetable to re-locate the ENG service to parts of those bands.

5. Other issues

Environmental benefits

- 5.1 Mobile telecommunications technology can play a leading role in tackling climate change by driving carbon reductions across a range of industry sectors.
- 5.2 A recent report predicts that mobile technology could cut Europe's annual energy bill by at least \$A61 billion and reduce annual greenhouse gas emissions by at least 113Mt CO₂ equivalent by 2020. This represents 18% of the United Kingdom's

²⁰ P34, *Content + technology Magazine*, July/August edition 2009

annual CO₂e output in 2008 and approximately 2.4% of expected EU emissions in 2020²¹.

- 5.3 The Vodafone-Accenture report says Information Communications Technology (ICT) can make a major contribution in tackling climate change by eliminating the need for physical products or activities through the effective use of ICT products or services and enabling smart applications that improve energy efficiency through real-time monitoring and control of processes. Wireless telecommunications enable this to be done remotely and on the move using cellular connections, with the Report stating that machine-to-machine communications will play a major role.
- 5.4 Locally, a recent study, *Towards a High-Bandwidth, Low-Carbon Future: Telecommunications-based Opportunities to Reduce Greenhouse Gas Emissions*²², found that telecommunications networks can help reduce Australia's greenhouse gas emissions by almost five per cent by 2015 and deliver up to \$6.6 billion a year in financial savings for Australian businesses and households.
- 5.5 The study, commissioned by Telstra, prepared by climate change experts Climate Risk and peer-reviewed by independent experts Greg Bourne (CEO, World Wildlife Fund Australia) and leading Australian energy and environmental authority, Dr Hugh Saddler, identifies seven major opportunities for Australian consumers and businesses to reduce or avoid the release of carbon emissions into the atmosphere. If implemented by 2015, these opportunities could assist reduce Australia's greenhouse gas emissions by around 27 million carbon tonnes per year. Individually, each opportunity could deliver per annum carbon emission savings of:
- 1.8 million tonnes (Mt) by using broadband to remotely manage power for appliances not in use or on "stand-by";
 - 2.4Mt by improving business productivity with "in-person" high-definition videoconferencing;
 - 2.9Mt with broadband based, real-time freight allocation systems to fill empty freight vehicles;
 - 3.0Mt with presence-detecting services that turn off devices that are "on" but not being used;
 - 3.1Mt with teleworking and working in regional centres by reducing commuter car traffic;
 - 3.9Mt by bringing integrated personalised public transport to your door with a phone call; and
 - 10.1Mt by increasing renewable energy use with networked demand side management.

²¹ <http://www.environmentalleader.com/2009/07/23/mobile-technology-could-cut-eu-energy-bill-61b-by-2020-2/>

²² http://www.telstra.com.au/abouttelstra/csr/climate_change.cfm

- 5.6 This illustrates that not only is mobile telecommunication technology an enabler that drives productivity gains throughout the economy, but, given access to suitable radiofrequency spectrum, the mobile telecommunications industry can play a key role in helping Australia move towards a low-carbon economy.

Measuring and understanding productivity growth

- 5.7 In terms of actually measuring the productivity and understanding the figures, AMTA suggests it would be useful to track the actual performance of key indicators – broadband take-up, efficiency gains, contribution to the economy – against the predicted levels of performance. Given the tendency for under estimation when attempting to predict the growth and prevalence of information technology in general (consider predictions about the use of the Internet, for example, or the surprise and accidental success of text messaging on mobile phones), such analyses should prove insightful and could assist with policy development on a number of fronts.
- 5.8 The key indicators need to be carefully agreed, and would need to be flexible to some extent to take into account unexpected or new technologies. They would also need to differentiate between the key technologies; it is AMTA's experience that the Australian Bureau of Statistics (ABS) data collections currently tend to 'lump' mobile technology in with all other information communication technology (ICT) technologies and are therefore not useful indicators of the 'success' of the mobiles industry.
- 5.9 AMTA notes, however, that in international mobile telecommunications forums, such as the annual GSMA Mobile World Congress, it has been recognised that Australia has in recent years been one of the leading countries in the world in terms of mobile infrastructure and services. Further information about the most recent congress (at which several Australian speakers were invited to speak) is available at the following [link](#).
- 5.10 To address the information void noted above, AMTA has commissioned regular reports on the economic contribution and significance of the mobile telecommunications industry in Australia. A link to the most recent report is included [here](#).
- 5.11 Outside industry-commissioned research, AMTA suggests that many potentially useful figures for the mobiles industry are already collected by ACMA. To ensure data requirements on the industry are minimised, it would be useful to consider ABS access to this data before the Bureau considers approaching industry for a whole new data set. AMTA is aware that some of these issues have been previously discussed with the ABS, but is unsure on the outcome.

- 5.12 International figures to benchmark Australia's performance will also continue to be useful. Again, however, it is AMTA's experience that ABS figures in this area are difficult to use for international comparisons because they are not sufficiently disaggregated. It is difficult to usefully compare the general Australian data with more specific data produced elsewhere (the US NAICS classification, for example).
- 5.13 AMTA understands that there may be some difficulties faced by the ABS in disaggregating classes, but believes that a breakdown much closer to other developed nations is crucial if the ABS's statistics on telecommunications and information provision are to provide a meaningful and useful picture of the industry and its growth in the coming years.

Training, education and uptake of productivity-enhancing technology

- 5.14 AMTA believes that government and industry both have a role to play in ensuring that Australians are technology and media literate. This includes ensuring privacy and security issues are adequately addressed.
- 5.15 AMTA has been active in this area by producing a range of plain-English information sheets²³ and creating a website to assist young people on a range of mobile-related issues, covering subjects such as bullying, money, safety, recycling, technology and culture²⁴.
- 5.16 It is perhaps more difficult to ensure that adults are technologically literate. AMTA has addressed this in some areas, with some of its material written especially written for adults, most notably in its award-winning information about mobile bullying. AMTA has produced one information sheet for children, with another directed at parents and carers²⁵.
- 5.17 AMTA has also produced material about spam and scams to help Australians understand the issues and protect themselves and to direct them to further information where relevant. The industry also shares information, through AMTA, about new scams to allow each carrier to take early action to protect their customers from problems. AMTA has also provided detailed submissions to government as it has reviewed its regulation, enforcement activities and international collaboration, and is encouraged that the regulator has recently been demonstrating its willingness and ability to enforce its regulation.
- 5.18 AMTA is a supporter of Scam Watch and works with ACMA on cyber-safety issues and is always keen to work with its members to explore further opportunities for

²³ See AMTA's website at: <http://www.amta.org.au/default.asp?id=367>

²⁴ See: <http://www.str8tlk.amta.org.au/>

²⁵ See: <http://www.str8tlk.amta.org.au/default.asp?id=635>

assisting Government and other relevant organisations to act holistically to further educate and inform the Australian community, as appropriate.

6. Conclusions

- 6.1 The mobile industry is a significant - and growing - contributor to Australia's productivity and its economy. It is a key plank in enabling Australians to participate in the digital economy.
- 6.2 As the government has identified, access to broadband is critical if Australian businesses and individuals are to reap the full benefits of participation in the global digital economy. The geographic and demographic conditions in Australia dictate that wireless broadband service is even more important here than in many otherwise comparable nations.
- 6.3 Given future demand projections, there is a critical need to address future mobile growth trends from an infrastructure perspective. Radiofrequency spectrum is fundamental infrastructure for the provision of mobile telecommunication services. Without it, mobile service is not possible.
- 6.4 Government must ensure that sufficient and appropriate radiofrequency spectrum is made available to the mobile telecommunications industry to allow it to meet future mobile growth demand. This includes spectrum from the digital dividend as well as spectrum in the 2.6 GHz band. It must also provide certainty about spectrum licence reissue.
- 6.1 AMTA thanks the House of Representatives for the opportunity to comment and would be happy to provide further information on these or any other relevant issues, or to meet to discuss issues raised.