Regional Telecommunications Review
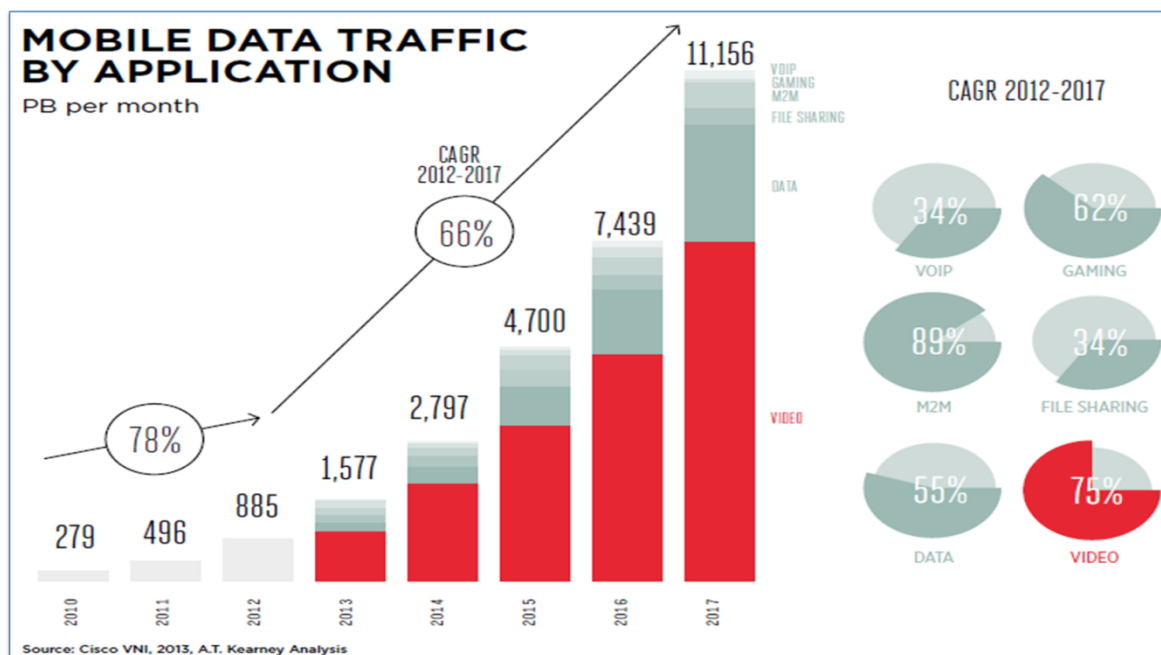
2015

AMTA Comments on Issues Paper

Introduction

The Australian Mobile Telecommunications Association (AMTA) welcomes the opportunity to participate in the 2015 Regional Telecommunications Review.

In particular, AMTA appreciates being heard by the Committee on 7 July and provides the following responses below to questions raised by Committee members as well as in the Issues Paper.

Continued growth in demand for mobile services

The rising number of smartphone subscriptions and increasing data consumption per subscriber are driving global mobile data traffic growth. This will result in an 8-fold increase in global traffic by the end of 2020. The growth in global data traffic between 2019 and 2020 will be greater than the total sum of all mobile data traffic up to the end of 2013.[1]
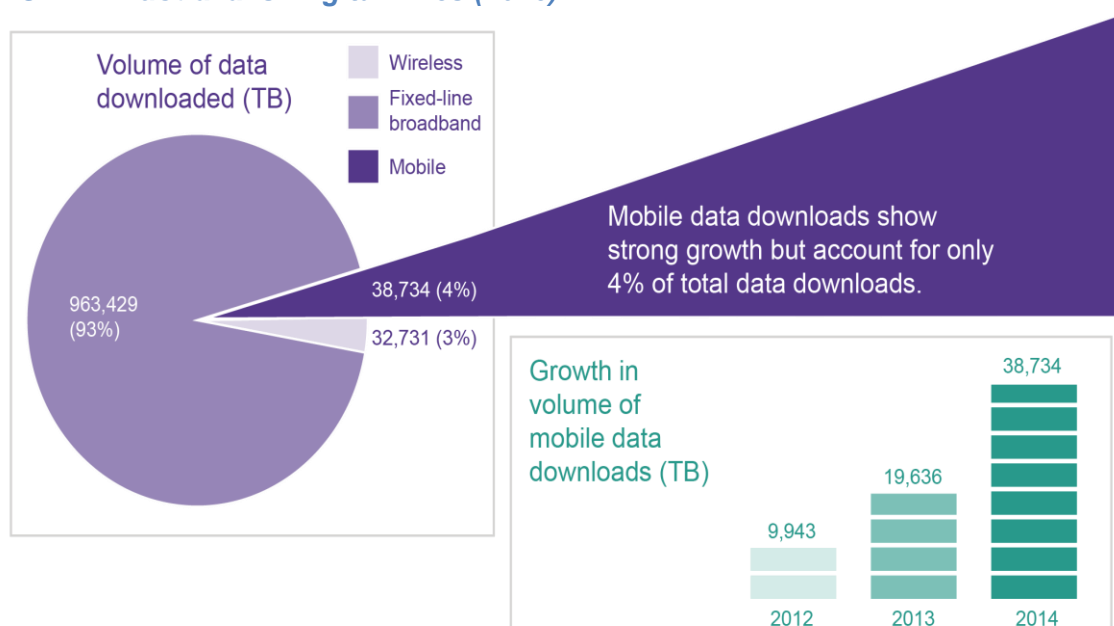

MOBILE DATA TRAFFIC BY APPLICATION — PB per month. CAGR 2012-2017: 66%, 78%. 2010: 279, 2011: 496, 2012: 885, 2013: 1,577, 2014: 2,797, 2015: 4,700, 2016: 7,439, 2017: 11,156. CAGR 2012-2017: VOIP 34%, GAMING 62%, M2M 89%, FILE SHARING 34%, DATA 55%, VIDEO 75%. Source: Cisco VNI, 2013, A.T. Kearney Analysis

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[1] Ericsson Mobility Report: http://www.ericsson.com/res/docs/2015/ericsson-mobility-report-feb-2015-interim.pdf

In Australia, the ACMA's research program has noted the following developments:

- 12.07 million people owned a smartphone as at May 2014[2]
- Use of the internet over mobile phones grew by 196% over three years from 2010-2013[3]
- The use of mobile commerce services is soaring with an increase of 448% in the use of m-commerce services from 2010-2013[4]
- 12% of Australians were exclusively mobile-users for accessing calls, internet and messaging services as at Dec 2014[5]
- 29% of Australians were mobile only users for phone use (no fixed line at home) and 21% used only their mobile for internet access.[6]

ABS figures for the June 2014 quarter show that Australians continue to have an increasing appetite for mobile data. While fixed-line broadband continues to account for the largest proportion of total data downloaded (93 per cent), mobile data downloads showed the strongest growth. They almost doubled from the June quarter 2013 to June 2014, with an increase of 97 per cent to 38,734 terabytes. This makes mobile the fastest growing way of downloading data, while fixed-line broadband download volumes increased by 53 per cent and wireless by 20 per cent.

ACMA – Australians' Digital Lives (2015)

Volume of data downloaded (TB)

Wireless
Fixed-line broadband
Mobile

963,429 (93%)
38,734 (4%)
32,731 (3%)

Mobile data downloads show strong growth but account for only 4% of total data downloads.

Growth in volume of mobile data downloads (TB)

38,734
19,636
9,943

2012 2013 2014

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[2] ACMA Research Snapshot, M-Commerce http://www.acma.gov.au/theACMA/engage-blogs/engage-blogs/Research-snapshots/m-Commerce-Mobile-transactions-in-Australia

[3] ibid

[4] ibid

[5] ACMA Research Snapshot, Australians Get Mobile http://www.acma.gov.au/theACMA/engage-blogs/engage-blogs/Research-snapshots/Australians-get-mobile

[6] Ibid

Productivity benefits of mobile telecommunications

The mobile telecommunications industry makes a significant contribution to Australia's economy. An AMTA commissioned report by Deloitte Access Economics found that the total value added to the economy by the mobile industry was $14.1 billion (for 2011-12) with $7.6 billion direct contribution and $65 billion indirect activity across the economy.[7]

AMTA notes the Australian Communications and Media Authority's (ACMA) recently commissioned research by the Centre for International Economics (CIE) that found:

> "Mobile broadband has wrought substantial change across the Australian economy and has been taken up rapidly by Australian households and businesses." [8]

CIE was able to quantify the impact of mobile broadband on Australia's economy and productivity:

> "Without mobile broadband…the Australian economy would be $33.8 billion smaller in 2013. Further, Australian households would have consumed $652 per person less in goods and services than they actually consumed in the absence of mobile broadband. These very substantial impacts of mobile broadband reflect the productivity growth within the mobile communications sector and the impacts of mobile broadband reported by over 1000 Australian businesses operating across all sectors of the economy." [9]

The ACMA report also found that the capacity of the mobile sector to enable more productivity growth means that technological developments in the sector and their diffusion throughout the economy have the potential to reverse Australia's declining productivity performance. The Deloitte Access Economics report predicted a productivity benefit of $11.8 billion over the period to 2025 from mobile technologies.[10]

An Ovum report, predicts that Australia's M2M market will be worth over half a billion dollars by 2019.[11] Mobile carriers expect significant growth in M2M services in the next five years.

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[7] Mobile Nation Deloitte Access Economics, Feb 2013

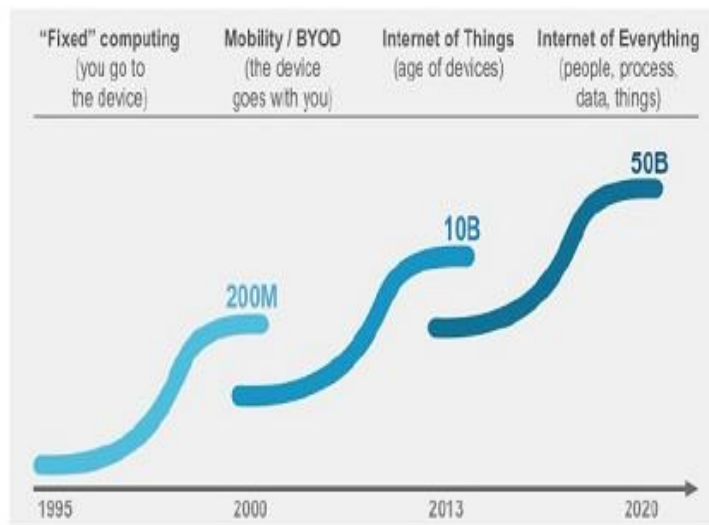[8] *The economic impacts of mobile broadband on the Australian economy, from 2006 to 2013,* Research report prepared for the ACMA by The Centre for International Economics, April 2014
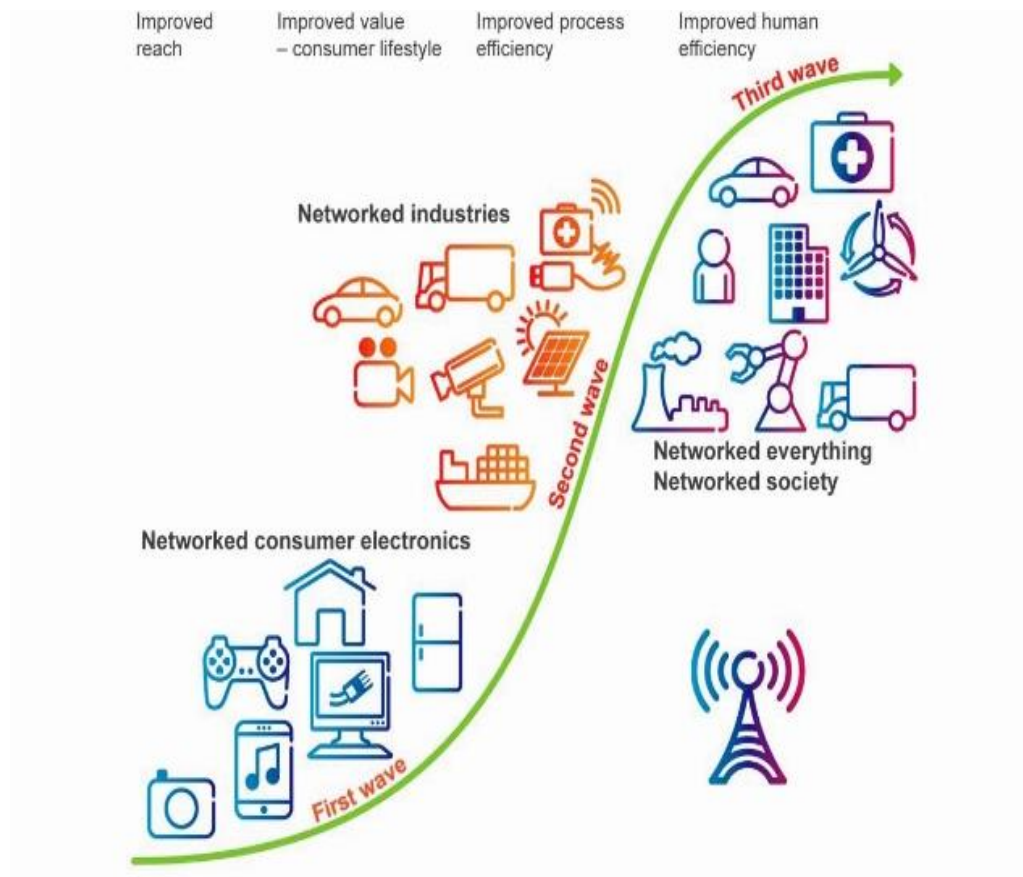
[9] Ibid

[10] Mobile Nation Deloitte Access Economics, Feb 2013

[11] http://www.theaustralian.com.au/business/latest/australian-m2m-market-to-be-worth-530m-by-2019/story-e6frg90f-1227054911166

Rapid Growth of the Number of Things Connected to the Internet

| "Fixed" computing (you go to the device) | Mobility / BYOD (the device goes with you) | Internet of Things (age of devices) | Internet of Everything (people, process, data, things) |

200M — 1995–2000
10B — 2013
50B — 2020

Improved reach   Improved value – consumer lifestyle   Improved process efficiency   Improved human efficiency

Third wave

Networked industries

Networked everything
Networked society

Second wave

Networked consumer electronics

First wave

12 Ericsson
13 Ericsson

The strong growth in demand for mobile services that currently drives investment by mobile carriers needs to be understood in the context of declining revenues.

A report by Anaylsys Mason, forecasting demand for spectrum, notes:

> "In terms of recent trends in pricing, blended monthly average revenue per user (ARPU) has fallen from AUD50 per month to AUD43 per month over the last three years in the case of Telstra and from AUD48 per month to AUD40 per month in the case of Optus (equivalent data is not available for VHA)."[14]

Globally, Mobile Network Operator (MNO) revenue growth is forecast to fall (see graph below). At the same time, infrastructure investment by MNOs is at high levels to meet customer expectations, especially in relation to coverage and capacity.
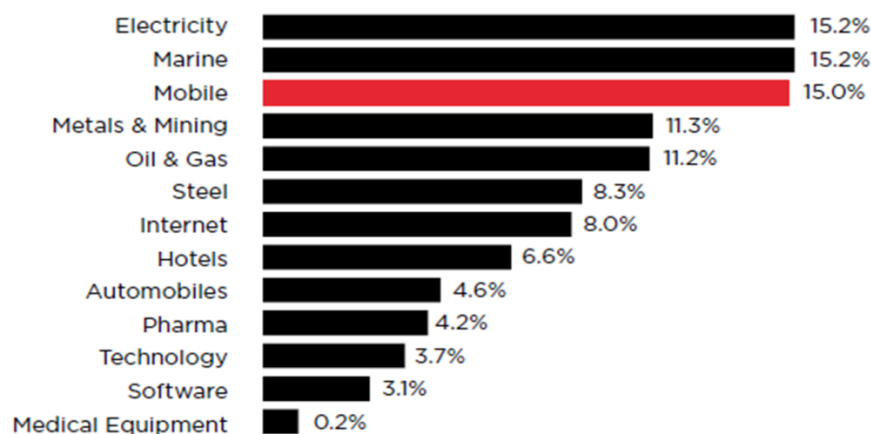

Source: A.T. Kearney, EIU, Gartner, GSMA Wireless Intelligence, IDC, Wireless Matrix

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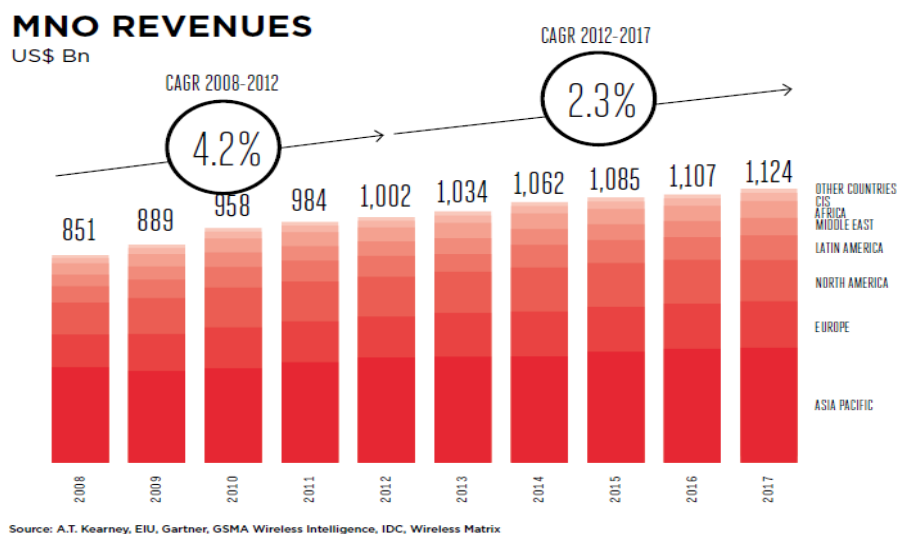
[14] Analysys Mason Mobile Network Infrastructure Forecasts (Contracts 13ACMA013 and 14ACMA149) 10 June 2015 at page 9

Q6. "What opportunities do the mobile network industry see for extending coverage in regional Australia and increasing investment in mobile networks?"

The strong current and projected demand for mobile telecommunication services in Australia is being matched by significant investment by carriers to deploy and upgrade mobile network infrastructure.

CAPITAL EXPENDITURE ACROSS A SELECTION OF INDUSTRIES
Capex as a % of Revenues, 2012

Industry	%
Electricity	15.2%
Marine	15.2%
Mobile	15.0%
Metals & Mining	11.3%
Oil & Gas	11.2%
Steel	8.3%
Internet	8.0%
Hotels	6.6%
Automobiles	4.6%
Pharma	4.2%
Technology	3.7%
Software	3.1%
Medical Equipment	0.2%

1. Weighted Average CAPEX / Sales. Selection of 100 companies by sector.
Source: Confidential Operator data; Bloomberg; A.T. Kearney Analysis

Investment by Australian mobile carriers will deliver the next-generation of mobile data and broadband services and includes investment in:

- new spectrum assets and the renewal of existing assets; and

- engagement with a complex array of Commonwealth, State and Local Government planning processes that govern deployment activity.

Mobile carriers are committed to continued investment in terms of infrastructure deployment and expansion of 4G networks.[15]

- Telstra has publicly committed to spending $5 billion in the three years up to 2017 in its mobile network.[16]
- Optus has also announced increasing infrastructure spending to $1.77 billion in the next year.[17]

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[15] http://www.computerworld.com.au/article/433391/updated_4g_australia_state_nation/

[16] http://www.afr.com/business/telecommunications/telstra-to-spend-5-billion-in-mobile-war-with-optus-20150709-gi5uq7

- And Vodafone recently stated that it spent $1 Billion in 2014 on its network.[18]
- Optus and Vodafone are committed to a joint venture that includes infrastructure sharing as well as domestic roaming arrangements.

The Government's Mobile Black Spot Programme has successfully implemented a co-investment scheme that will deliver close to 500 new or upgraded base stations around Australia under the $100 million first phase. The winning bidder of a site is required to explore opportunities to share or co-fund with other mobile network operators under the Programme guidelines.

As part of the Black Spot Program Telstra will build 250 "Small cell" installations over 3 years in small country villages which will provide localised 4G services with a radius of some 200-300m. It is anticipated that an ongoing program for small cell deployment will be continued as a cost effective alternative to the deployment of macro base stations in these areas.

There are certain considerations that must be undertaken by carriers when expanding coverage areas and planning new sites for base stations.

 On the technical side:

- Coverage, capacity and enhanced services
- Efficient roll-out and deployment (including potential for co-location)
- Structural integrity
- Safe access and maintenance
- Access to power supply
- Land and tenure

There are also considerations around the community impact of any new site:

- Compliance with EME guidelines and standards
- Public concerns around schools, hospitals, child care facilities etc.
- Visual impact
- Compliance with planning regulations
- Community consultation processes

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[17] http://www.afr.com/business/telecommunications/optus-to-raises-infrastructure-spending-to-177-billion-as-network-competition-heats-up-20150514-gh17x6

[18] http://www.smh.com.au/business/vodafone-bets-on-billiondollar-boost-to-network-20140803-1000el.html

Co-location arrangements

AMTA notes that Telstra, Optus and VHA are all members of the Mobile Carriers Forum (MCF) and that the MCF manages a well-established framework for site-sharing and co-location arrangements.

Consideration of co-location and site sharing opportunities is a formal requirement under the Communications Alliance Industry Code of Practice 564:2011, "Mobile Phone Base Station Deployment" (the Code). To meet these requirements, MCF members circulate information regarding proposed deployments in each region on a regular basis, and determine co-location opportunities. Where such opportunities exist, a lead Carrier is appointed to co-ordinate deployment at that site.

AMTA believes that existing MCF arrangements and compliance with the Code provide good incentives for encouraging co-location and site sharing.

For example, during the 2014/15 FY, Telstra processed 3400 co-location applications and a further 900 co-site applications for Optus and VHA. The majority of these applications (approximately 75%) were for site upgrades. The records cannot be readily segmented to show the broad locations, but it can be reasonably assumes that 65% would be in urban areas, 25 % in Regional areas and 10% in Rural areas

Similarly, Optus received 34 (Level 2) co-location applications in 2014. This comprised of 10 from Telstra, 23 from NBN and 1 other. And Optus lodged approximately 450 co-locations, (Level 2 submissions), in calendar 2014. Of these, 443 were lodged with Telstra and the remainder with NBN.

The NBN and Mobile Networks

The MCF and its members also share information, including network deployment plans, with NBN Co. We note that NBN Co is a subscriber to AMTA's Deployment Compliance Management System (DCMS), and has indicated an in principle undertaking to follow industry's deployment practices where viable for them, which includes the consideration of co-location opportunities.

MCF members and the NBN Co also share information about deployment plans and have the ability to share infrastructure through Facility Access Agreements (FAAs).

Telstra and NBN Co have reciprocal FAAs and share information in relation to their respective deployment programs. Telstra and NBN Co also provide opportunities for the sharing carrier to build the structure if the lead carrier does not have funds available. The lead carrier then refunds the co-locating carrier at a later date once they install their equipment

Optus has entered into a FAA with NBN Co and a number of sites have been deployed under that agreement. Vodafone has also entered into a FAA with NBN Co.

Notwithstanding the above, many NBN deployments may not be suitable for the co-location of mobile network infrastructure.

Wi-Fi

Wi-Fi should be seen as complimentary to the traditional infrastructure utilised for mobile network deployments. Unlike Mobile spectrum, Wi-Fi spectrum is unlicensed, and has commercial uses beyond creating wireless networks. Cordless phones are a common example of a device which shares the spectrum. In addition to this, the frequency bands used by Wi-Fi are susceptible to interference from a variety of devices and appliances, such as microwave ovens. This can lead to significant contention issues.

The usable range of Wi-Fi networks can vary significantly depending on the amount of competing networks, devices and local interference sources, but will always be smaller than mobile network infrastructure. The resource contention issues will also mean that the network performance will vary significantly among Wi-Fi users.

As such, Wi-Fi networks should not be seen as a substitute for mobile network infrastructure in a rural environment.

How consumers can safely and legally enhance mobile coverage

AMTA provides consumer advice about how to safely and legally enhance mobile coverage on its 'MobileTips' website:

http://www.mobiletips.org.au/pages/Tips.on.enhancing.coverage

Consumers can also download a copy of the AMTA/CA fact sheet on network performance and mobile coverage from the 'MobileTips' website. (see Attachment A)

Mobile Repeaters

The MobileTips website includes important information for consumers about the use of mobile repeaters.

Mobile repeaters must only be used if they are authorised by a carrier so customers need to get in touch with their service provider to see if a repeater will work for them. Unauthorised repeaters (which can be bought online from overseas providers) can cause significant interference issues with networks or may not work at all. AMTA is currently working closely with the ACMA to raise consumer awareness around the problem of interference caused by the use of illegal devices such as unauthorised mobile repeaters.

It should be noted that mobile repeaters require an ambient mobile signal to be present and the amplitude of that signal will determine the extra coverage provided by the device. This limits deployments of authorised repeaters to areas within existing coverage areas. Other factors affecting the effectiveness of a repeater device include the amount of noise received and the isolation between the receiving, (donor antenna) and the broadcast antenna.

Significant success has been seen in rural areas through the deployment of Residential Grade solutions such as the Telstra Mobile Smart Antenna. These devices still require authorisation from a carrier but can be deployed by customers through a self- install or carrier provided installation service. These devices have been most useful in enhancing in-building coverage to a home or small office to approximately 900 square meters.

For larger areas it is possible to deploy carrier grade repeater devices. These are higher power devices and have a greater range to around 500 meters in perfect conditions but again these are dependent on the amplitude and quality of the ambient signal. These devises would only be supplied and deployed by a mobile carrier.

Conclusion

AMTA would be happy to discuss the above responses in more detail with the Committee if that would be helpful. For any questions in relation to this submission, please contact Lisa Brown, Policy Manager, AMTA on 02 6239 6555 or at lisa.brown@amta.org.au.