ANNUAL REPORT

2016

AMTA

Australian Mobile Telecommunications Association

AMTA Members

Carriage Service Providers

Optus, Telstra, Vodafone Hutchison Australia Pty Ltd, Lebara Mobile, Lycamobile

Handset Manufacturers

LG Electronics Australia, HTC (Aust & NZ), Motorola Mobility Australia, Samsung Australia, Sony Mobile, ZTE Australia

Infrastructure Suppliers

Ericsson Australia, Huawei Technologies, Nokia Solutions & Networks Australia Pty Ltd, Qualcomm International

Retailers

Mobile Monster, Mobile Network

Support Industries

Acquirecomm, Axicom, Brightstar Logistics, Evans Planning, Futureye, ParadigmOne, Risk insure, RF Industries, Urbis Pty Ltd, Warren & Brown Technologies

AMTA Contacts

Membership

For information about AMTA or membership inquiries phone (02) 6239 6555 or see website: www.amta.org.au

MobileMuster

To contact MobileMuster phone 1800 249 113 or email mobilemuster@amta.org.au. For more information about MobileMuster see www.mobilemuster.com.au

Mobile Carriers Forum

To contact the Mobile Carriers Forum (MCF) phone (02) 6295 8191 or view www.mcf.amta.org.au

AMTA's Vision

The Australian Mobile Telecommunications Association (AMTA) is the peak national body representing Australia's mobile telecommunications industry.

AMTA's vision is to promote an environmentally, socially and economically responsible, successful and sustainable mobile telecommunications industry in Australia.

AMTA aims to achieve its vision by:

- Effective industry representation and leadership.
- Generating consensus on whole-of-industry issues.
- Improving the level of trust between the industry, related industries, key stakeholders and the wider community.
- Promoting an improved understanding of its contribution to the Australian Community.

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CHAIR'S REPORT

2016 and Beyond

2016 was a year where the mobile industry continued to transform and improve the way Australian's live, work and play. The influence and relevance of mobile services continues to increase throughout our economy and society. Strong demand for 4th generation (4G) mobile technologies continues with mobile data services, Mobile Broadband and smart devices offering customers more and more options. As a result, mobile subscriptions are now approaching 32 million, mobile data traffic grew by 85% to June 2015 and around 80% of online adults used the internet via the mobile phone with the market penetration of smartphones approaching 90%.

While the 4G ecosystem continues to evolve - in the background a new mobile era is taking shape as a central feature of an increasingly converged (mobile and fixed) ecosystem. This new era will be characterised by 5th Generation (5G) mobile technologies that will deliver – the network speed, capacity and responsiveness needed to support Internet of Things (IoT), Machine 2 Machine (M2M), latest generation (4k - 8k) video, virtual and augmented reality, smart homes, cars and cities, m-health and the list goes on.

The unprecedented level of connectivity in this new era will ultimately support 10's of billions of connections in the so-called "networked society" based largely around 4G/5G mobile networks and services.

For AMTA and its members this future gaze is important context in 2016 for several reasons;

- The speed of the evolution which projects commercial 5G deployments by 2020. This rapid advance of 5G standards is being driven by unprecedented levels of global collaboration within the mobile industry.
- The infrastructure needed to support 5G will require policy and regulatory outcomes in relation to radiofrequency spectrum and mobile network deployment – which are typically lengthy processes.
- Clearly this future also includes significant flow-on implications for industry planning and investment - all of which points to a sense of urgency for both industry and government.

To be successful the industry needs to work with the Government to ensure that policy settings evolve to maximise the opportunities for Australia.

L-R Matthew Lobb, AMTA Chair, Communications and Arts Minister The Hon. Mitch Fifield, John O'Mahony Partner (Deloitte Access Economics) and Ric Simes Partner (Deloitte Access Economics) at the 'Mobile Nation: Driving workforce participation and productivity' Report launch in Parliament House Canberra.

2016 Election Year

In this election year, as always, AMTA has worked hard to represent whole-of-industry issues across the political landscape - working with all parties and independents at all levels of government. What has been pleasing is the strong recognition by all stakeholders that the mobile revolution will play a crucial role in ensuring Australia's economic and social success.

The election period was an opportunity to promote key themes and issues that are not only central to a successful mobile industry but also central to realising the key enabling impacts of mobile technologies and services in terms of productivity and connectivity.

Early in 2016 AMTA released the latest Mobile Nation report with our research partner Deloitte Access Economics (DAE). Once again the DAE analysis focused on productivity – estimating a $34b impact arising from the enabling role of mobile. The 2016 report also explored the impact of mobile on workplace participation and revealed a further $9b impact – resulting in an estimated combined impact of $43b. These positive impacts featured as the core theme for AMTA during the election period.

Policy Focus

In 2016 AMTA retained a key focus on the big ticket policy and regulatory issues that will influence our industry's future. This requires strong engagement with the Department of Communications and the Arts (DoCA) and the Australian Communication and Media Authority (ACMA) as well as many other arms of government as the relevance of mobile now extends to virtually all portfolios.

Over the course of 2016 AMTA identified key policy and regulatory settings needed to support the growth of the mobile industry including the evolution to 5G – which will show even greater potential in terms of flow-on productivity and related impacts.

In short, the 5G mobile world will demand more spectrum and an ongoing need for significant investment in network infrastructure. This means industry will need to work closely with government to manage a process of policy and regulatory reform to achieve the timely delivery of required outcomes.

To this end, AMTA continues to strongly support the Government's Radio-Frequency Spectrum Review as an important policy initiative with direct relevance to the future of mobile. Similarly, the industry is working to identify reform of mobile network deployment regulation as a priority.

Customer Focus

Last year I reflected on the very pleasing downward trend in complaints received by the Telecommunications Industry Ombudsman (TIO) in relation to mobile services. Notably the trend has continued in 2016 with the TIO noting that the number of complaints about mobile services has decreased by 48% over the past four years, while services in operation have increased 8.5% in the same period (TIO April 2016).

Conclusion

As my term as AMTA Chair concludes I would like to thank the broad range of stakeholders that engage with the Association on an increasingly broad agenda.

I would like to thank my fellow Board members for their contribution to AMTA's continuing success.

I would also like to highlight the high levels of constructive collaboration across the AMTA membership. In areas of common interest, the industry and consumers benefit from effective self and co-regulation mechanisms. This approach is delivering huge gains and must continue.

Finally, I thank the AMTA members and staff for their engagement and efforts in supporting the industry by active representation which not only benefits the industry but also the enormous impact the mobile industry has on the lives of the majority of Australians. Chris and the team should be very proud of their contribution to ensure that Australia is best placed to benefit from the mobile transformation.

Matthew Lobb, AMTA Chair.

CEO'S REPORT

Evolution is a common theme in the mobile sector. The 4th generation of mobile technology is dominated by networks based on the Long Term Evolution (LTE) technology platform.

We can clearly see an incredibly dynamic evolution when looking back at past mobile generations. While a typical generation is around 10 years there is considerable overlap where generations co-exist for extended periods.

AMTA CEO Chris Althaus with Shadow Minister for Communications Michelle Rowland.

For example, currently 2G, 3G and 4G platforms are operating in Australia with 2G scheduled to cease during 2016/17.

In evolutionary terms there is nothing about the mobile industry that could seriously be considered "long term" – perhaps "meteoric" or "relentless" better describe the mobile evolution reality.

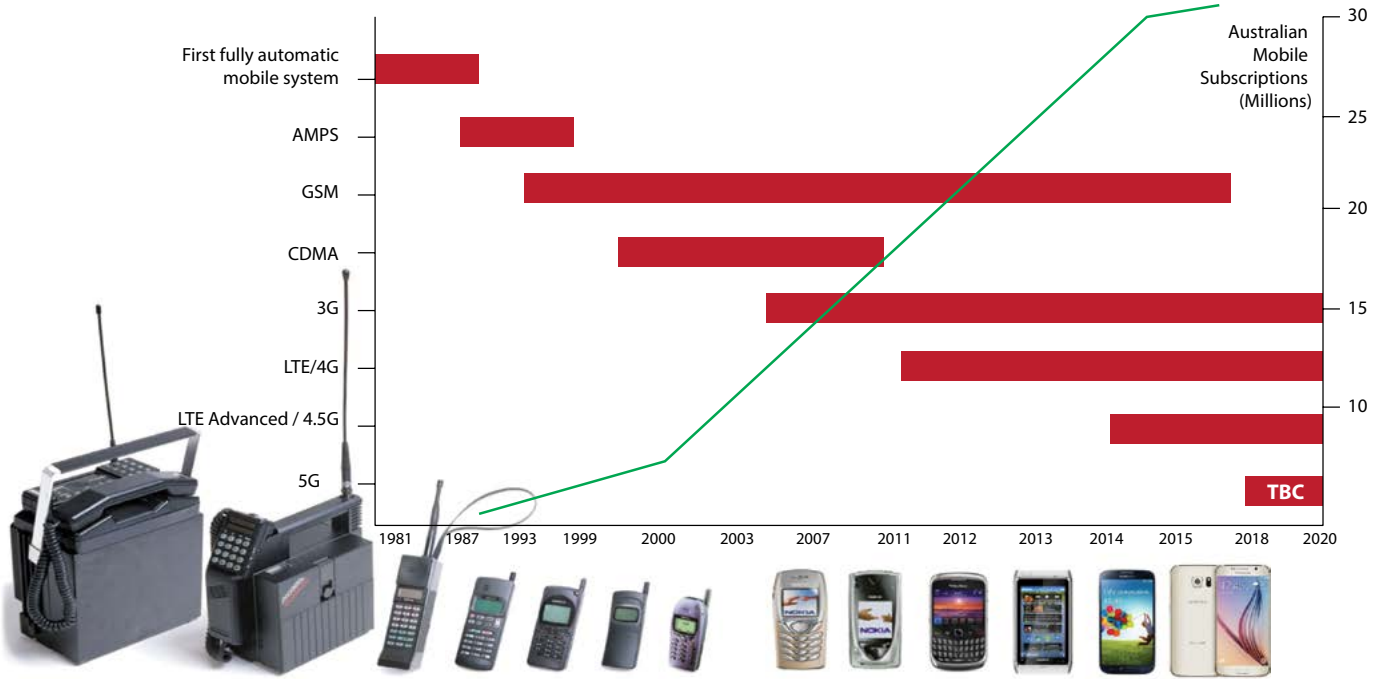
In 2016 the mobile evolution continued, with 4G maturing and the pathway to 5G beginning to emerge via an enormous global effort to produce the standards for 5G in time for trials at events such as the Commonwealth Games (2017) and Winter Olympics (2018) ahead of commercial deployments from 2020.

Clearly 4G has substantial growth and development remaining so the future for mobile will be dominated by a co-existence with 5G well into the 2020's.

Regulatory reform needed to support 5G

As industry prepares for the 5th generation of mobile technology, the need for regulatory reform in the key areas of spectrum management and network infrastructure deployment is increasingly urgent.

Throughout 2016, AMTA has remained focussed on its engagement with the Government's Spectrum Review process and is preparing an agenda of spectrum reform focused on the need to plan and allocate new spectrum to support 5G.



5G will also require the roll-out of new and additional mobile network infrastructure – AMTA's Mobile Carrier's Forum (MCF) is already engaged with Government regarding proposals for legislative and regulatory reform in the area of deployment. The next stage of this reform agenda will be broadened to include specific requirements for 5G.

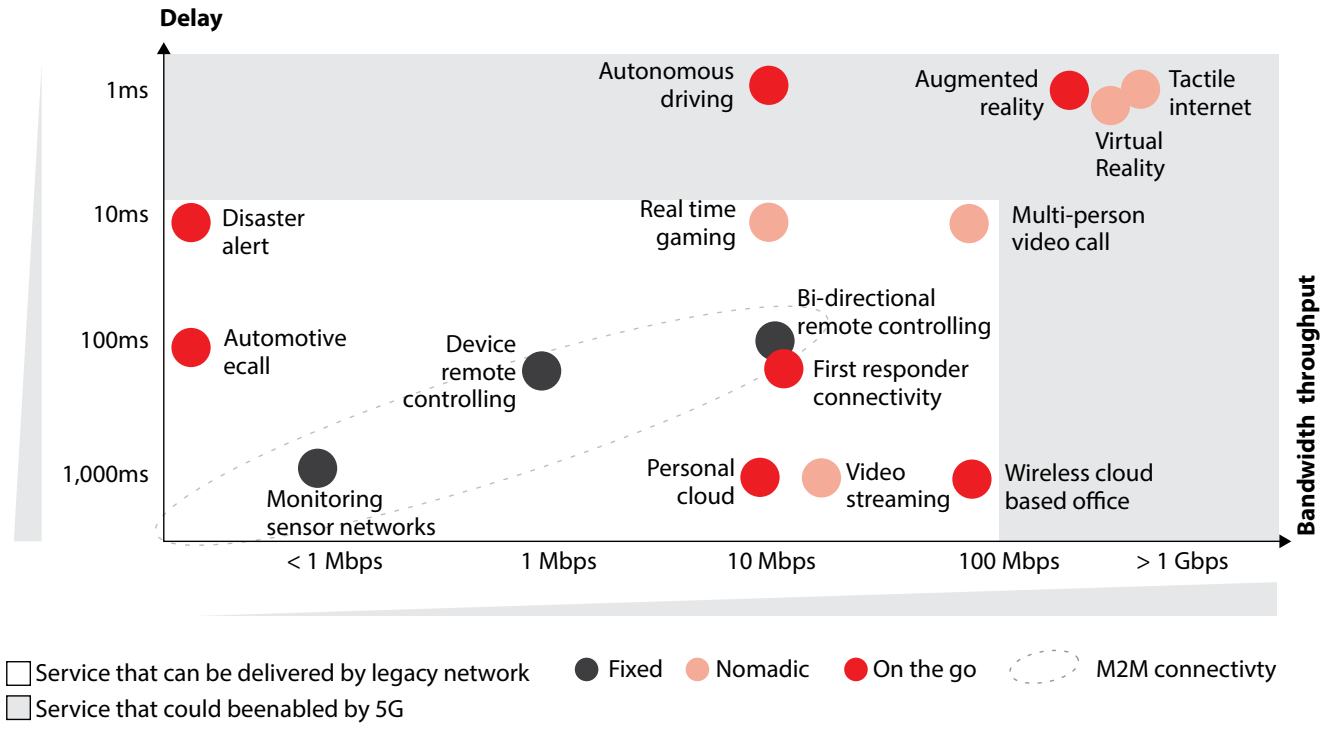
While this reform agenda has the potential to streamline deployment activities for mobile carriers; the proposals are always balanced with AMTA's long-standing commitment to address community concerns around deployment activities as well as any perceived health and safety issues.

Progress on the Spectrum Review and deployment reform has been interrupted in 2016 by the Federal election, however, AMTA is encouraged by the Government's ongoing commitment to these critical areas of policy / regulatory reform.

AMTA is committed to working closely with government to ensure a clear understanding of industry's future policy and regulatory needs as 5G standards are completed and the supporting infrastructure requirements defined. To this end AMTA has established a broadly based members 5G Group with a scope to provide:

- An industry forum to discuss the 5G evolution and related policy, regulatory and technology issues from both domestic and international perspectives;
- A reference point for agreed consolidated Australian industry perspectives on 5G issues eg;
  - identifying barriers to 5G network deployment with reference to existing legislative framework, including codes;
  - identifying, planning and allocating appropriate and sufficient spectrum for 5G
- A point of contact for exploring possible partnerships with research and/or government agencies and relevant 5G international fora.

Bandwidth and latency requirements of potential 5G use cases



Source: GSMA Intelligence – Understanding 5G: Perspectives on future technological advancements in mobile

AMTA Board Members with the Hon. Mitch Fifield – Minister for Communications and the Arts (3rd from right). L-R: John Demezieres (Motorola Mobility Australia), Sean O'Halloran (Axicom), Stuart MacIntyre (Optus), Chris Althaus (AMTA), John Chambers (Telstra), Hakan Eriksson (Ericsson), Matthew Lobb (VHA), Ashley Mackrell (ZTE), Minister Fifield, Ray Owen (Nokia Solutions & Networks Australia) and Prasad Gokhale (Samsung).

Mobile Nation: Driving workforce participation and productivity

The growth and development of mobile in Australia and globally is a phenomenal story of staggering proportions when the aggregate statistics are considered. In 2015 there were 4.7 billion unique subscribers – over 60% global penetration, and 7.3 billion subscriptions – 99% global penetration; fuelling 49% compound annual growth in data traffic.

However, the bigger picture of flow-on economic and social impacts portrays the real significance of this remarkable technology.

In 2016 AMTA once again collaborated with Deloitte Access Economics (DAE) to produce the latest Mobile Nation report entitled *Driving workforce participation and productivity*.

Pages 7 to 10 outline the key themes and results of the Deloitte Access Economics (DAE) *Mobile Nation* study.

Conclusion

The mobile sector continues to expand its contribution and influence. In representing the industry, AMTA continues to enjoy close and productive relationships with members and key stakeholder organisations. I thank you for your engagement with AMTA in 2016. In particular, I note the very constructive engagement with the Department of Communications, the ACMA and our industry colleagues at Communications Alliance.

In closing, I thank the Chair and Board and all AMTA committee members for their engagement, advice and commitment of time to AMTA in 2016. On behalf of the AMTA team, we look forward to continuing the journey with you in 2017.

Finally, I acknowledge and sincerely thank the AMTA staff for their hard work and professionalism.

The Three Ps of Economic Growth

In the post-election period it is time to refocus on the importance of productivity and workforce participation to build Australia's economic capacity to support, sustain and drive living standards over the long term.

Deloitte Access Economics has recently undertaken research that finds mobile telecommunications creates significant benefits when it comes to productivity and workforce participation.

The Commonwealth Treasury regularly refers to the 'Three Ps" of growth – **Productivity, Participation and Population**. As Australia faces the post-mining boom's economic challenges to maintain national income and living standards, it's the **"Three Ps" that provide opportunities for other sources of economic growth.**

Mobile Enabled Productivity Growth

Mobile technology has played a key role in stimulating labour productivity growth over the past few years. It is a driving force in connecting people and businesses, stimulating innovation and technological progress, and transforming industries. Future development of mobile technologies will continue to help shape the Australian economy and drive productivity improvements.

Mobile Productivity and Workplace Participation Benefits

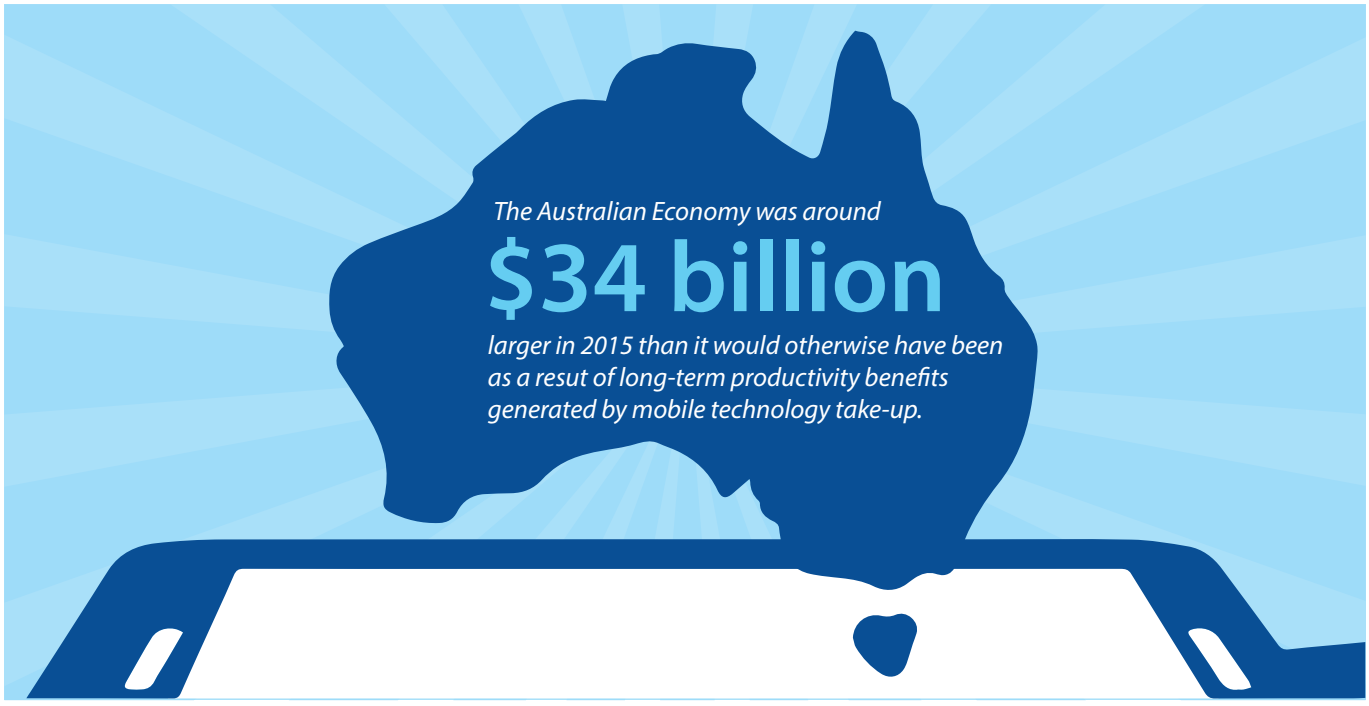
The Australian Mobile Telecommunications Association (AMTA) commissioned the latest Deloitte Access Economics study, *Mobile Nation: Driving workforce participation and productivity.*

The report's key findings are:

- Australia's economy is **$42.9 billion** (2.6% of GDP) bigger in 2015 that it would otherwise be because of the:
  - long-term **Productivity**($34 billion, 2% of GDP) and
  - workforce **Participation** ($8.9 billion, 0.6% of GDP) benefits generated by **mobile technology take-up**
- **65,000 full-time equivalent jobs** were supported by the increased GDP attributable to workforce participation (equivalent to 1% of total employment in the Australian economy).

Ric Simes, partner at Deloitte Access Economics said:

"Mobile has had a transformative impact on both productivity and labour force participation which, along with population, are two of the 'Three Ps' we need to get right in terms of driving Australia's future economic growth".



Mobile Enabled Workforce Participation

The impacts of mobile on the labour market are wide-ranging. It has not just been confined to improving labour productivity.

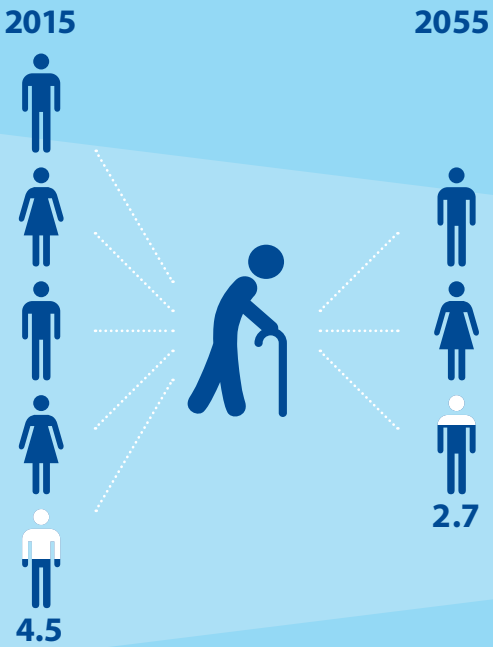
It also allows more people to work or facilitates more working hours, thereby improving participation in the workforce.

This will be important for future economic growth with the Intergenerational Report (IGR) (2015) projecting that by 2054-55 the participation rate of Australians over 15 years old will fall to 62.4% compared to 64.6% today.

According to the IGR, the number of Australians aged 65+ is projected to more than double by 2055. There will be less than 2.7 working age Australians (15-65 year olds) for each person over 65 years of age, compared to 4.5 today.

The Deloitte Access Economics report provides a fresh contribution to our understanding of the impact of mobile technologies on workforce participation in Australia.

Increasing labour force participation is one of the key challenges Australia faces to ensuring continued economic growth in coming decades.



Working aged Australians to support each person over **65**

More people can join the labour force, or work more hours, because mobile helps them to overcome some of the barriers to employment, such as:

- location;
- other personal or family commitments; and
- frictions and search costs associated with finding a job.

Mobile technology allows people to work from anywhere, anytime – removing locational barriers such as remoteness or commuting time and costs. It also enables people to work and take care of personal or family responsibilities such as caring for children or parents while still participating in the workforce. Finally, Australians are increasingly using their mobile devices to search and apply for work.

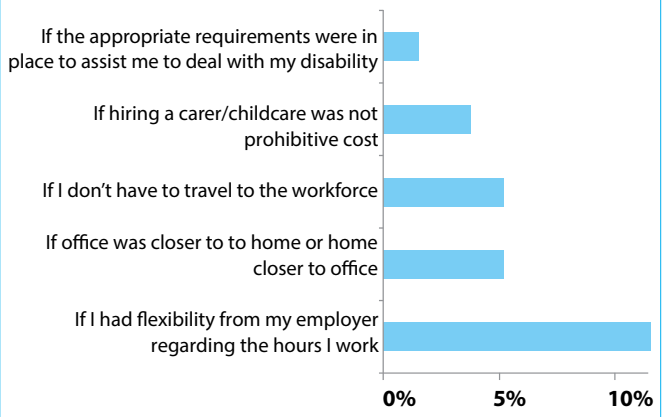
Deloitte Access Economics found that the economy is $8.9 billion bigger than it otherwise would have been in 2015 if the participation benefits of mobile were removed.

Reaping the Benefits of Mobile Technology

There is potential for more economic benefits of mobile technologies to be realised. Many employers and workplaces do not yet offer roles or jobs which harness the potential of mobile devices.

One third of survey respondents said that their employer did not facilitate working remotely, or only allowed working from home in special circumstances. There is great potential for growth in mobile-enabled workforce participation, as employers offer more roles which provide flexibility in the workplace. Of those who are not currently employed, 2 in 5 said they would take up a paid employment opportunity if an employer offered them the ability to work remotely regularly, or meet personal commitments at work.

Factors which would enable individuals to enter the paid workforce



Source: Deloitte Access Economics 2015

For example:

- 58% of individuals with a disability would take an opportunity which allowed them to work remotely regularly
- Half of carers would take an opportunity which allowed them to meet personal commitments while at work
- 37% of those considering retirement would remain in the workforce longer if an employer allowed them to work remotely regularly.

Jigsaw: mobile technologies for people with disabilities

Jigsaw is a social enterprise run by Fighting Chance that provides employed opportunities for people with disabilities. It connects clients such as Holroyd and Warringah Councils and Royal North Shore Hospital with services support such as document management, information audit and paperless office services.

According to Founder Laura O'Reilly, mobile technology plays an important role in facilitating the employment of Jigsaw workers, who may otherwise not be in the labour market. Mobile devices have apps such as reading aloud, and magnifying glasses that can assist vision impaired workers with documents. Apps such as Genie can make devices simpler than traditional desktop options.

Mobiles also act as a security device – helping Jigsaw participants in travelling to work, and link to assistance if lost or in trouble. This is important, according to Laura, because while working from home is part of the solution to providing more meaningful work to people with a disability, mobile devices facilitating getting out of the home and into the workplace is also beneficial because of the broader socialising opportunities it provides.

Summary

With the next wave of new technology emerging – drones, the Internet of Things (IoT), mobile wallets and autonomous cars – mobile will continue to grow in coming years. 5G is positioned to address the evolving demands and business contexts of 2020 and beyond.

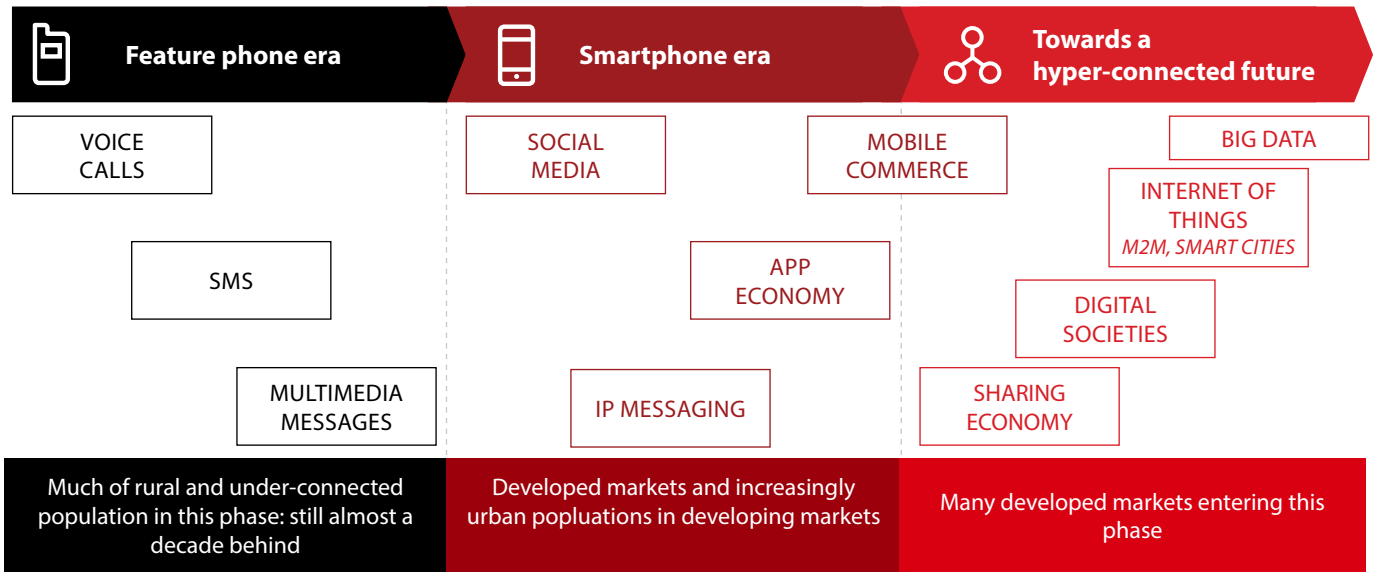
The impact of these technologies on society and the economy is yet to be seen. However, it is clear that mobile will continue to shape the way Australians communicate, work and interact.

Harnessing the potential of new and existing technologies will be important to securing economic growth and living standards in the future.

Reference: Deloitte Access Economics. 2016."Mobile Nation: Driving workforce participation and productivity".

L-R: Emilio Romeo AMTA Director, Matthew Lobb, AMTA Chair, Minister Fifield, Stuart MacIntyre AMTA Director and Chris Althaus AMTA CEO at the 'Mobile Nation: Driving workforce participation and productivity' Report launch in Parliament House Canberra.

Evolution of the mobile industry across the world



Source: GSMA – The Mobile Economy 2016

AMTA POLICY PROGRAM

AMTA's Policy Committee meets regularly throughout the year to identify policy issues affecting the mobile telecommunications industry and develop strategies to enable the industry to effectively respond to those issues.

The Committee aims to influence policy makers in order to achieve policy settings that enable and encourage continued investment by the mobile industry in order to deliver the next generation of mobile technology and services.

Our objective is to encourage policy settings that:

- Promote public trust and confidence in mobile services, devices and technology;
- Build consumer awareness and deliver robust consumer safeguards;
- Encourage ongoing innovation and continued investment in infrastructure; and
- Result in a regulatory and legislative framework that is reasonable, flexible and proportionate.

With a broad remit on issues in the area of economics and infrastructure; the Committee focusses on policy issues relating to network infrastructure and radiofrequency spectrum, as well as promoting awareness of the economic and social benefits of mobile technology.

The Committee also maintains a strong commitment in the area of social responsibility. This involves a focus on community engagement, consumer education and awareness, including issues relating to mobile device security and illegal or prohibited devices. It also involves engagement with policy makers in relation to issues of law enforcement and national security priorities as well as co-operation and engagement with law enforcement, national security agencies and emergency service organisations.

In 2016 we have made more than 15 (formal and informal) submissions to Government and/or regulatory authorities in relation to various policy issues and proposals for regulatory reform.

L-R: Renae White, MCF/AMTA Office Manager, Lisa Brown, AMTA Policy Manager & Ray McKenzie, MCF Manager.

Economics and Infrastructure

Radiofrequency Spectrum

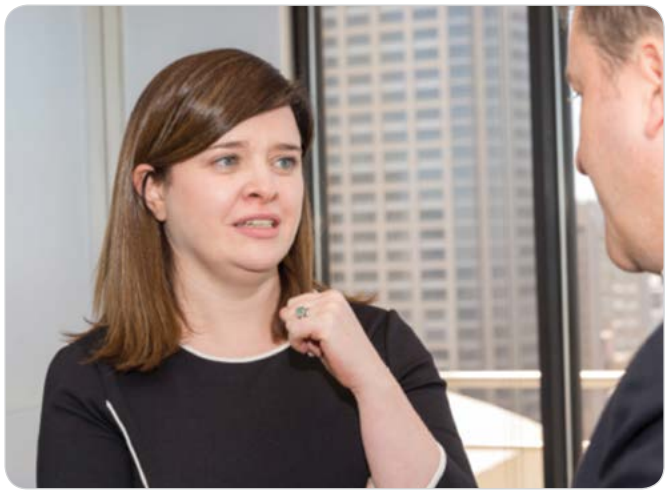
The Department of Communication and the Arts (DoCA's) Spectrum Review was an early focus for AMTA in 2016 with two submissions made to the Review in January. The Review process is expected to continue into next year with a draft Bill expected to be before the end of 2016.

AMTA has also participated in the ACMA's Australian preparatory process for the International Telecommunication Union (ITU) 2019 World Radiocommunication Conference (WRC-19). Certain items on the WRC-19 Agenda are related to the international harmonisation of radiofrequency spectrum bands for use for International Mobile Telecommunications (IMT)[1].

AMTA's participation in the ACMA's processes is targeted at influencing the development of Australian positions for WRC-19 that support the identification of suitable bands for use by IMT. The key WRC-19 Agenda item for AMTA is 1.13, which will consider certain bands above 24 GHz—including 'mm-wave' spectrum—for harmonisation for future 5G services.

Target spectrum bands for 5G are being identified in consultation with AMTA's members via the Policy Committee —engagement on this particular topic was kicked off in 2016 with AMTA's '5G Evolution – Mobile Network Operator Perspectives' workshop.

1 International Mobile Telecommunications (IMT) is the ITU's term to collectively describe a number of cellular mobile communications technologies, typically used to provide mobile broadband services to end-users.



Michelle Phillips (Optus) Chair AMTA Policy Committee with AMTA Chair Matthew Lobb (VHA)

AMTA's engagement with the ACMA on spectrum interference issues continues. We met with the ACMA in February and discussed potential principles for interference management. The Policy Committee has convened a technical sub-committee to facilitate the sharing of information about interference issues by carriers. The sub-committee is pursuing a more consistent approach from the ACMA in relation to compliance and enforcement in relation to interference.

AMTA members were also given the opportunity to engage with the GSMA at a workshop in August to discuss opportunities for the mobile industry with regard to planning for 5G, IoT as well as GSMA programs including MobileConnect. Spectrum considerations for IoT are also being monitored through participation in the IoT Alliance Australia (IoTAA).

Mobile Blackspots Programme

In 2016, AMTA members participated in Round 2 of the Government's Mobile Blackspots Programme, supporting a co-investment approach to deliver new or upgraded base stations in regional and remote areas of Australia. The Government has committed $60 million in funding for Round 2 and results of the competitive selection process for locations will be announced later this year.

Social Responsibility

The Policy Committee maintains a strong commitment to providing reliable consumer information and raising awareness on topics of concern including mobile device security, affordability, accessibility, cyber-safety and bullying, safe driving practices as well as general health and safety.

MobileTips and Consumer awareness – www.mobiletips.org.au

The MobileTips website is the public face of AMTA's social responsibility program and in 2016 MobileTips provided accessible and consumer friendly tips on topics ranging from direct carrier billing and 2G network shut-downs to how to safely play PokemonGo on your mobile.

The Telecommunications (International Mobile Roaming) Industry Standard 2013 was made on 27 June 2013. The Standard had a staged implementation with obligations taking full effect from September 2014.

Following consultation with industry and other stakeholders in 2015-16 the Minister directed the ACMA to amend the IMR Standard. The resulting amendments enable:

- simplification of the delivery of mobile roaming information to customers overseas;
- more options for customers if they want to cancel roaming while travelling;
- the ability for customers to opt out of receiving roaming usage alerts; and
- an extension of the deadline for MVNOs to comply with the regulations.

AMTA provided a submission to DoCA's 'Communications Accessibility: 2016 and Beyond' consultation paper, looking at opportunities and options in relation to the sustainability of the National Relay Service.

AMTA also maintains a regular formal engagement with the Australian Communications Consumer Action Network (ACCAN). AMTA continues to participate in the ACMA's

Consumer Consultative Forum (CCF) and has also engaged with the Office of the Children's eSafety Commissioner.

AMTA believes that such regular engagement, collaboration and co-operation between industry, government, regulators and consumers is a major part of the foundation for a socially and economically responsible mobile telecommunications industry in Australia.

Prepaid ID Checks

In 2016 AMTA participated in the ACMA's review of the Telecommunications (Service Provider – Identity Checks for Pre-paid Public Mobile Telecommunications Services) Determination 2013 (the Determination). The ACMA convened a working group that included AMTA as well other stakeholders such as mobile service providers, law enforcement agencies and the Department of Communication and the Arts (DoCA). The working group's report made 17 recommendations to improve the effectiveness and efficiency of the Determination.

AMTA is now engaging with the ACMA regarding amendments to the Determination based on the working group's recommendations. AMTA will also work with members and other stakeholders to develop proposals around how digital identity can be managed in the longer-term, including how planned Government digital identity management systems for customers of Government services can be leveraged by the mobile industry.

Chris Althaus – AMTA CEO with Angus Taylor, Assistant Minister for Cities and Digital Transformation.

Law Enforcement and Emergency Services

AMTA is committed to strengthening and facilitating the well-founded partnership that exists between law enforcement and national security agencies, emergency service organisations and the mobile industry. In 2016 this policy area was dominated by the Government's consultation and ultimate introduction of Data Retention legislation as well as ongoing discussions regarding Telecommunications Sector Security Reforms (TSSR) legislation. This work was undertaken in close collaboration with Communications Alliance.

AMTA is also working with the ACMA, the Australian Maritime Search & Rescue Authority (AMSA) and carriers to develop protocols for AMSA's proposed use of a 'network in a box' type solution to locate missing persons using their mobile. This involves both technical considerations as well as putting in place appropriate arrangements and protocols for use.

Mobile Jamming in Correctional Facilities

This year the Policy Committee continued its engagement with the ACMA and NSW Corrective Services with regard to the use of mobile jamming in prisons and correctional facilities as well as other options for controlling illicit mobile use.

In 2016 the trial of mobile jamming in NSW was extended to now include two facilities in Lithgow and Goulburn. While all stakeholders appreciate the usefulness of mobile jamming; there is also agreement that such use must not interfere with surrounding mobile networks or prevent access to emergency services.

AMTA has advocated for an approach that includes managed access and/or detect and locate systems, as well as jamming where appropriate and where interference can be adequately and safely managed. This broad approach is now being adopted by NSW Corrective Services.

VALE – Peter Rossi – CTO Huawei

AMTA members and staff were saddened in 2016 following the sudden passing of Peter Rossi – CTO Huawei. Peter was a strong contributor to AMTA's Policy Committee. He is missed and our best wishes remain with his family.

MOBILEMUSTER

mobile muster
PRODUCT STEWARDSHIP PROGRAM
KEEPING OLD MOBILES OUT OF LANDFILL

PRODUCT STEWARDSHIP
Australian Government Accredited

Microsoft · SAMSUNG · MOTOROLA · htc · HUAWEI · ZTE中兴 · alcatel · oppo · OPTUS yes · vodafone · Virgin mobile

As the MobileMuster program moves into its seventeenth year, the mobile telecommunications industry is continuously proving to be leaders in product stewardship; providing a free recycling service for consumers as well as retailers, workplaces, government organisations and local councils within Australia. That way everyone can play their part in keeping old mobiles and accessories out of landfill.

MobileMuster is funded voluntarily by its members and managed by the AMTA. The contributing members are Microsoft, Samsung, Motorola, HTC, Huawei, ZTE, Alcatel, OPPO, Telstra, Optus, Vodafone, and Virgin Mobile. In October 2016 AMTA was pleased to announce that global smartphone manufacturer, OPPO, has joined MobileMuster to ensure that their smartphones, batteries and accessories, once they have finished their useful life, will be recycled to the highest environmental standards.

Yuchen Hou, Managing Director, OPPO Australia and Chris Althaus, Chief Executive Officer, AMTA.

The program is committed to continuing to raise awareness on how to recycle and provide easy and convenient access to recycling.

Awareness

Every year the program promotes one major campaign nationally to raise awareness and drive collections. In FY15-16, MobileMuster partnered with the Salvation Army; consumers were encouraged to recycle their old mobiles and accessories around the country and by doing so they would be helping the environment and the Salvation Army's Christmas Appeal.

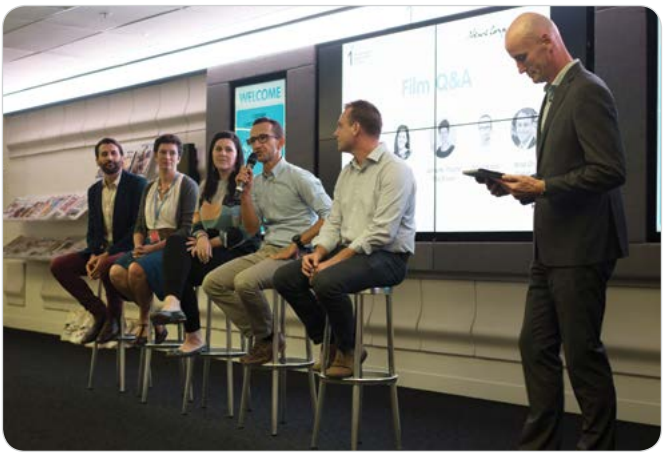
For every kilogram of mobiles phones and accessories collected by the program in December and January, MobileMuster gave $2 per kilo to the Salvation Army's Christmas Appeal. During the campaign 13,869 kilograms of mobile phone components were collected, allowing us to raise $27,737 for the Salvation Army. The campaign was promoted through outdoor, radio, and digital advertising platforms.

Each year at the end of the campaign MobileMuster conducts market research to measure the awareness of the program. Awareness of mobile phone recycling declined slightly from 78% in FY14|15 to 76% in FY15|16, however awareness of the MobileMuster program has increased year on year with 19% of those interviewed naming the program.

Spyro Kalos Manager, Recycling (AMTA), Leigh Cleave, Communications and Fundraising Director (The Salvation Army) and Matthew Lobb, Chairman (AMTA).

In the lead up to World Environment Day, MobileMuster partnered with renowned declutter expert, Peter Walsh, to highlight our research that there are 25.5 million old handsets cluttering up our homes, including 4 million that are broken and no longer working[1]. The consumer research revealed that whilst very few people around 3% throw their previous mobile into the rubbish bin overcoming Australia's hoarding behaviour to keep their old mobile 'just in case' is a major barrier to recycling. MobileMuster put out the call for Australia's biggest mobile phone hoarder and the competition winner received a dream decluttering package which included an in-home personal organisational session with Peter Walsh. The campaign was supported with digital adverting and PR.

MobileMuster's schools program works with teachers and students to provide educational resources focussing on the benefits and need to recycle mobile phones. The program educates students on the life cycle of mobile phones from the design stage right through to the circular economy. Last year MobileMuster received over 16,500 visitors to the school's section of our website, 6000 downloads of our education games and over 2800 teachers accessed our learning modules.



Q&A Panel at 1 Degree hosts zero waste and circular economy forum L-R: Tim Silverwood – Take3, Annette Mayne – The Bower, Melinda Tually – Fashion Revolution, Spyro Kalos – MobileMuster, Brad Gray – Planet Ark

1 Independent online survey conducted in January and February 2016 by IPSOS on behalf of AMTA of 1006 mobile phone users, aged 16 years or older randomly selected from all States across Australia.

IN 2015-2016

76 TONNES

OF MOBILE PHONE COMPONENTS COLLECTED

INCLUDING AN ESTIMATED 1,050,000 HANDSETS AND BATTERIES

31,699 KG
HANDSETS

16,525 KG
BATTERIES

27,849 KG
ACCESSORIES

Collections

This year MobileMuster has seen an increase in our overall collections year on year from 74 to 76 tonne; a result driven by effective marketing and communication campaigns, support from committed members who help spread the message to their customers, and motivated channels who want to play their role in product stewardship.

MobileMuster's extensive collection network provides consumers with an easy and convenient way of recycling their old and unwanted mobiles and accessories. There are over 3,100 public drop off points around Australia including over 2,000 retail stores. MobileMuster also partners with local councils, schools, workplaces and government agencies across the country who promote mobile phone recycling to their staff and run collection drives within their community.

The free post back service through Australia Post provides consumers with a convenient way to recycle their old mobiles and accessories. The MobileMuster reply paid satchel can be picked up from 3600 participating AusPost outlets around the country, or comes included in the box when purchasing new mobile phones from Samsung, HTC, Microsoft, ZTE, Alcatel and Motorola.

Spyro Kalos, Manager MobileMuster with a local council representative at the Australian Local Government Association (ALGA) national conference in Canberra in June

Spyro Kalos, Manager MobileMuster – presenting awards at the Australian Local Government Association (ALGA) national conference in Canberra in June

360
LOCAL COUNCILS

2100
WORKPLACES

1290
OTHER RETAILERS

1895
MOBILE PHONE RETAILERS

3600
AUSPOST OUTLETS*

64
REPAIR STORES & SERVICE CENTRES

500
SCHOOLS

*Auspost outlets distribute free MobileMuster reply paid satchels

Larissa Shashkof, Education and Communications Officer MobileMuster presenting the sustainable smartphone workshop to students from Meadowbank Public School at the Youth Eco Summit.

Program Performance

The performance of MobileMuster is measured against nine key indicators which include changes in consumer behaviour, collections and recycling rates, diversion from landfill and industry participation. Each of these is assured independently by PriceWaterhouseCoopers. The table below highlights the program's performance against its key performance indicators as part of the program's accreditation under the Product Stewardship Act 2011.

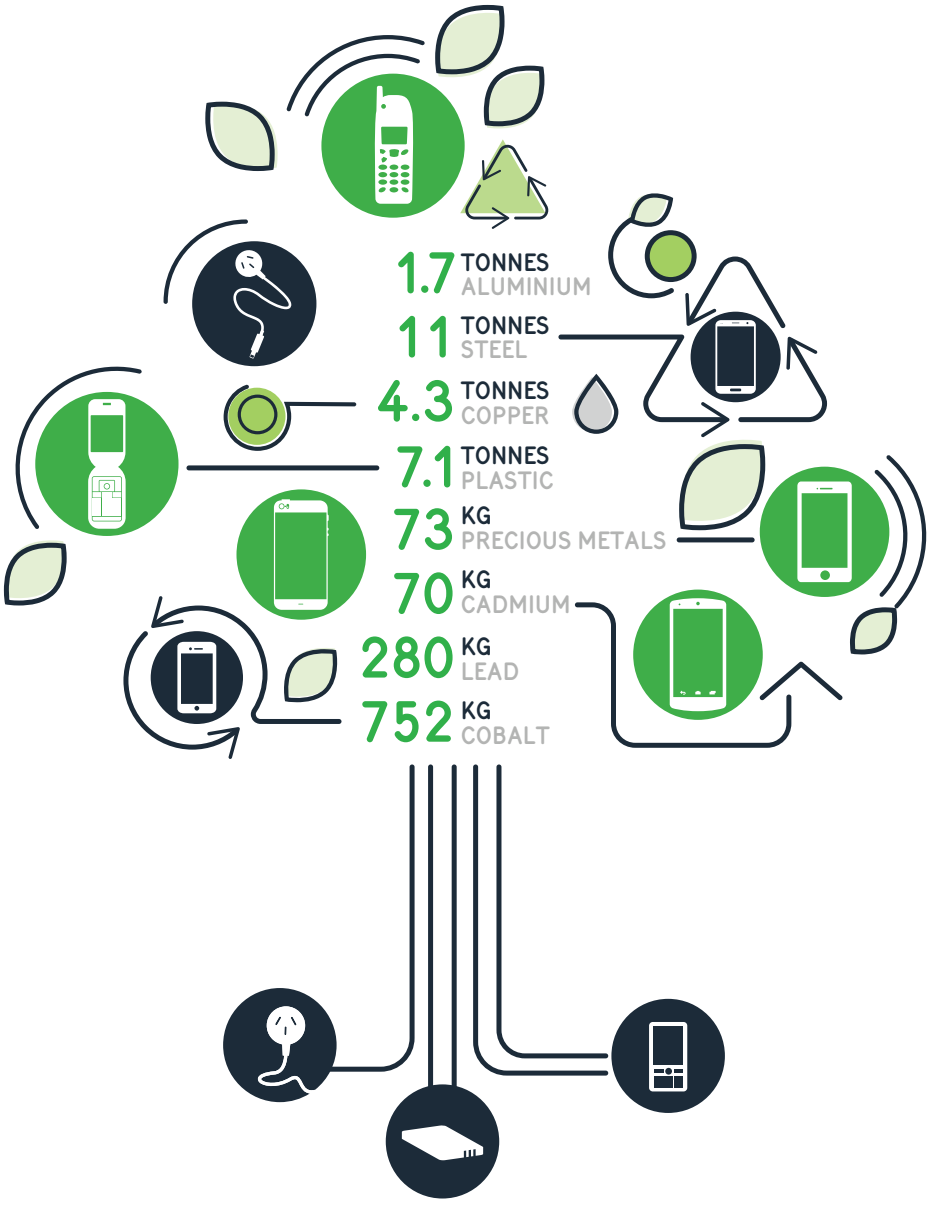
Targets were revised to reflect the decline in handset shipment numbers during FY15-16.

Key Peformance Indicators	2015-16	
	Forecast	Actual
Collections		
Mobile Phone Collections (tonnes)	*72.5*	***76.1***
Annual Collection Rate, Discarded Phones	*52%*	***60.30%***
Annual Collection Rate, Net imports	*10.40%*	*9%*
Recycling		
Diversion from Landfill	*97%*	***98.40%***
Recycling Rate (estimated material recovered)	*>90%*	***99.30%***
Consumer Behaviour		
Personal Storage Rate (% users with 2 or more handsets at home)	*37%*	*42%*
Disposal to Landfill Rate	*2%*	*3%*
Awareness of Mobile Phone Recycling	*>80%*	*76%*
Industry Participation		
Manufacturers	*56%*	*43.20%*
Mobile Network Carriers	*91%*	*90%*

MobileMuster is committed to ensuring all components collected are recycled ethically, securely, safely and to the highest environmental standards. We work with our recycling partner TES-AMM to ensure transparency of all downstream processes. All mobiles, batteries and accessories collected by MobileMuster are dismantled into their core components and put through further processes with TES-AMM downstream recycling partners. Our resource recovery rate has remained high with the program recycling 98.4% of materials.

The industry has invested over $40 million into the MobileMuster program which has recycled over 10 million handsets and batteries since the program started. The members are committed to working together to ensure that the promotion, collection, transportation and recycling of old mobiles is done with transparency and accountability. AMTA looks forward to further development of the program as it works closely with members, partners and other stakeholders to create a more sustainable telecommunications industry. Our resource recovery rate continues to remain high with over 98% material recovery from mobile phone components collected."

What we've recovered



MOBILE CARRIERS FORUM

In 2016 the MCF has continued to work with the industry to help it anticipate and respond to community concerns regarding the deployment of mobile telecommunications networks and balancing community expectations with the demand from Australia's nearly 32 million mobile phone services. The MCF continues to seek a better regulatory environment for planning, building and operating mobile telecommunications networks at federal, state and local government levels.

More flexible, efficient and effective regulation

Throughout 2016 the MCF has promoted a substantial suite of reforms with the Federal Department of Communications and the Arts, seeking in particular to reform and update legislation and regulation related to the Low Impact Facilities Determination (LIFD).

The LIFD regulation permits deployment of mobile network infrastructure without undergoing full local or state planning processes where the infrastructure meets the definitions of 'Low Impact' in the Determination. The definitions are based on infrastructure having minimal impact on visual or other amenity in the community where it is deployed, and balances this impact against the substantial benefits of mobile communications to the community concerned. The LIFD plays a crucial role in facilitating the upgrading and growth of Australia's mobile networks to meet ever increasing customer demand for the services mobile telecommunications provide.

However, more than a decade since its introduction, the Determination has become out of date with modern deployment practices. The suite of reforms the MCF has negotiated throughout 2016 includes a range of amendments to bring the Determination up to date, permitting modern technologies associated with 4G (such as 'small cells') to be included in the Determination, and to more readily allow deployments in high demand areas of the community such as commercial and industrial zones.

A particular focus of the MCF's work in 2016 was to analyse and document the economic benefits that could be expected if the proposed reforms were implemented (and thereby assist the Department in its own decision making processes in regard to adopting the reforms). The MCF analysis, including the latest findings from the AMTA commissioned 'Mobile Nation Report 2016' produced by Deloitte Access Economics, indicated that potential benefits exceeded $160 M per year, with more than a third of this flowing directly to the public through the increased productivity that mobile communications services allow. The social benefits of the greater connectivity between family, friends, colleagues and the community at large, while not costed in the MCF analysis, are also well understood and are an additional argument in favour of adopting the proposed reforms.

MCF is now turning its focus towards the implications of the emerging 5G deployment environment. 5G will bring with it a more complex, variable and denser suite of deployment solutions, as well as a real sense of urgency given the projected deployment of 5G by 2020.

The evolution of mobile technology including the nature and ubiquity of the associated infrastructure, is much too rapid for conventional regulatory instruments to keep pace. New regulations will be required to ensure regulations remain flexible enough to accommodate whatever future technology may bring, delivering the undoubted benefits of the technology to the Australian public while still respecting and managing the impacts the infrastructure may have on some communities.

The MCF looks forward to a busy 2017 working with the regulators and industry stakeholders in helping to shape this future regulatory environment.

Providing confidence in the safety of mobile network infrastructure

When designing and deploying mobile network infrastructure, mobile carriers comply with strict science based safety standards limiting exposure of the public to radiofrequency fields from their equipment. The industry complies with all limits and is audited to ensure its processes meet the requirements of the regulators.

The carriers must also provide an Environmental EME Report, produced following a protocol specified by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) for every mobile base station. The report shows the RF fields in the vicinity surrounding a site, and is available to the general public via the industry's Radio Frequency National Site Archive (RFNSA) website at **www.rfnsa.com.au**.

In 2016 the MCF has continued the measurement program it instituted in 2015 which aims to confirm that the fields actually measured at selected points near the base station site do compare with the maximum field calculated in the Environmental EME Report. The measurements are undertaken

by an independent and accredited RF measurement expert using calibrated equipment to provide the utmost confidence in the results from the measurement program.

With almost 100 sites now measured, analyses show that the measured fields from base stations are many times below the maximum fields calculated in the Environmental EME Report (typically by a factor of 10, even when adjusted for maximum operating conditions which almost never occur in normal operation). A selection of measured and modelled results is shown in Figure 1 as an example.

This result is not unexpected given broad and conservative assumptions incorporated into the ARPANSA protocol for calculating the fields for the reports, including high operating powers, no path losses due to environmental clutter such as buildings and trees, and over estimation of antenna gains. However, this conservative approach provides additional confidence to the public that the levels provided in the Environmental EME Report will never be exceeded under any foreseeable conditions. Overall, the MCF considers the measurement program is providing results within expectations and which can provide the public with even more confidence that RF fields from mobile networks remain far below the safety limits in places where they are typically exposed.

The MCF also commissioned measurement of background levels of EME from all radio sources in the environment such as those from broadcast radio and TV. These measurements allow the fields produced by mobile networks to be placed in context of the total RF fields present in the community. A typical example of the overall fields present is shown in Figure 2. Mobile networks produce only about 40% of the fields, while broadcast radio and TV produce more than half of the fields present (as related to the overall limits in the Australian safety standards specified by ARPANSA).

The MCF will publish all the results from the measurement program along with supporting explanatory information on a new website page to be launched in 2016. The measurement program will continue in 2017 with the website to be updated with the new information and analyses as the results become available.

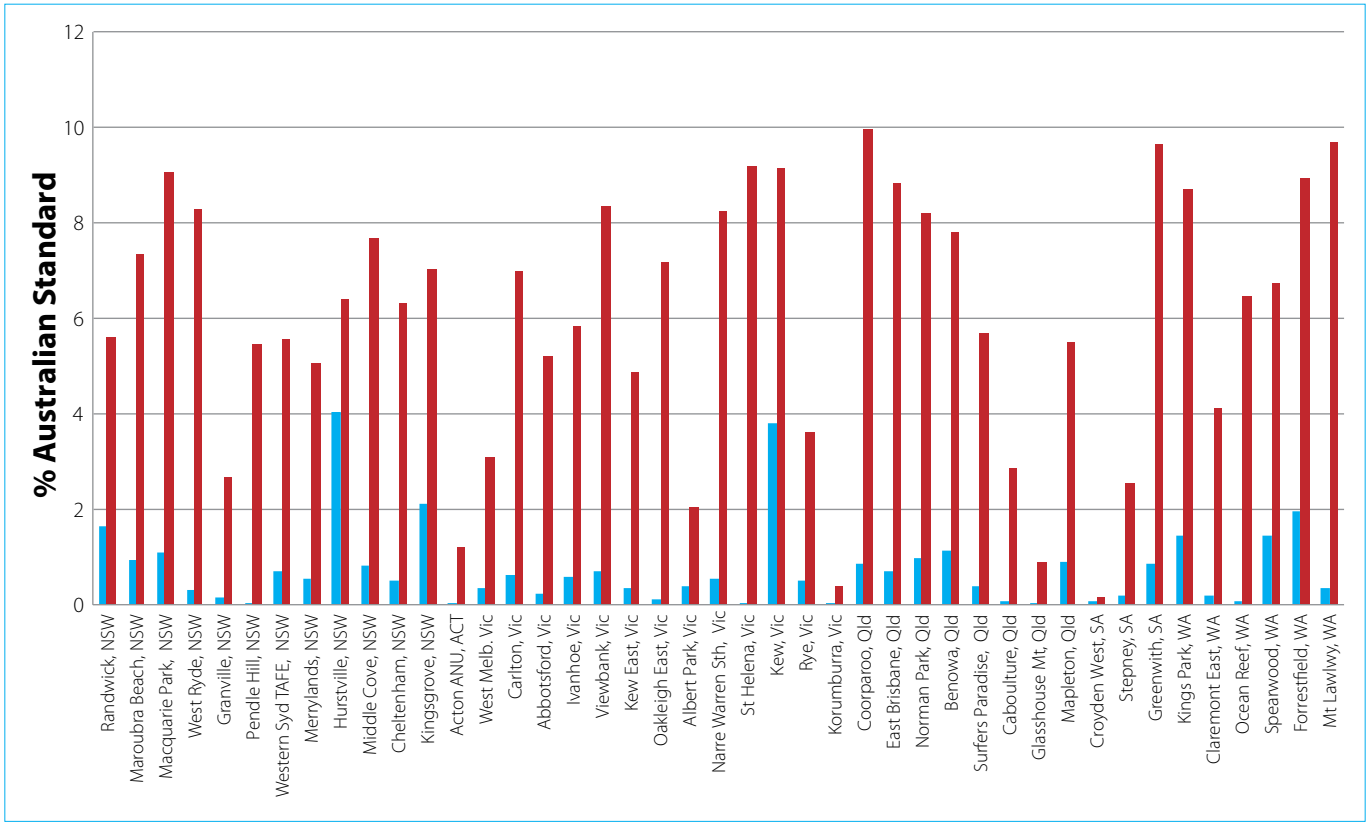
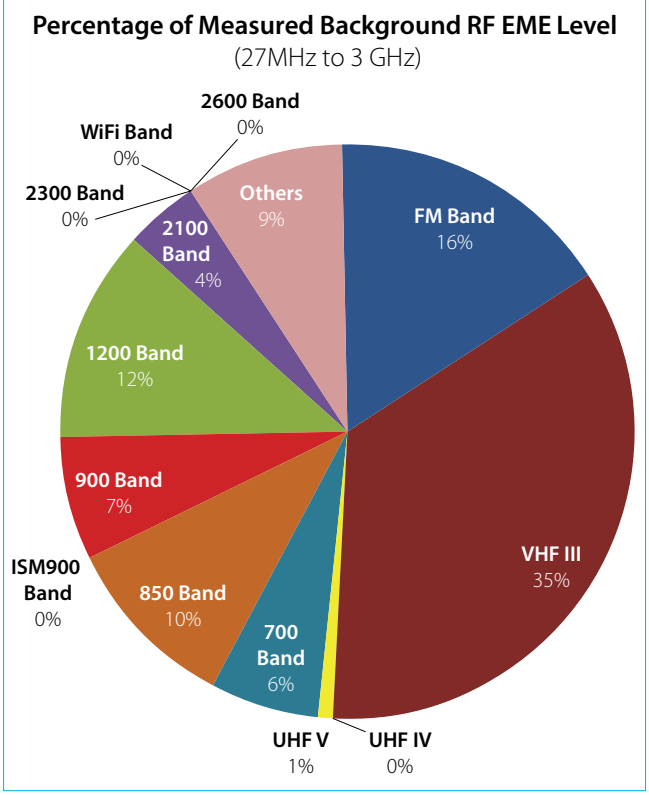


Figure 1: A comparison of measured and modelled EME levels for a selection of mobile base station sites throughout Australia showing measured levels many times lower than officially reported.

Figure 2: Typical example of RF fields produced in a suburban location by all sources including mobile networks. Jells Park Victoria



Improved state and local planning arrangements

A key objective of the MCF is to provide regulatory consistency and certainty in the planning process and in particular encourage the adoption of state-wide telecommunications infrastructure planning policies and codes.

In 2016, the MCF has been working with the Tasmanian Planning Commission (TPC) in a process initiated by the Tasmanian Government to harmonise local planning schemes throughout all local governments in Tasmania. The MCF had already been engaging with several local governments regarding the introduction of Telecommunications Schedules or Codes into their local planning schemes, in particular Launceston, Hobart and Break O'Day. The Codes proposed by the MCF for these planning schemes were intended to be a model for wider adoption throughout Tasmania, although the process would prove to be a lengthy one if taken one local council at a time. The Codes themselves provided for facilitated approvals of network infrastructure proposals that fall within certain height, planning zone and other amenity impact considerations.

Subsequently, the TPC invited the MCF to participate in the development of a single state planning scheme for all local governments, including all local planning matters, not just telecommunications or mobile deployment. This process has resulted in a draft statewide planning scheme which is now under consideration by the TPC and includes a Telecommunications Code.

While adopting much of the model proposed by the MCF in its early work in Launceston in particular, variations have appeared in the draft code, in particular some unnecessarily restrictive height limitations and lack of flexibility that poses concerns for Carriers. The MCF appeared before a hearing of the TPC in Hobart in October 2016 to reinforce its original case for a more flexible scheme and which had initially been well received. The MCF is hopeful that progress will be achieved before the scheme is finalised in late 2016 or early 2017.

The MCF also seeks to continue its dialogue directly with local governments around Australia. As part of its regular participation in local government events, it attended both the Australian Local Government Association (ALGA) national conference in Canberra in June, and the South Australia Local Government conference (SALGA 2016) in Adelaide in October. It also presented to a special meeting of the SA Local Government Property and Asset Management Group in Adelaide in August, where it provided a seminar on the significant planning and design effort that goes into selecting the best possible location for new mobile network sites. The session also covered how unwarranted concerns around health impacts or other matters can significantly compromise service outcomes with no benefits to the community.

At our conference appearances, the ever increasing demand for mobile broadband to service smartphones and other mobile devices and the need for new and upgraded mobile network infrastructure, dominated the comments from visitors attending our stand at both conferences.

Ray McKenzie, Manager MCF at the Australian Local Government Association (ALGA) national conference in Canberra in June.

Ray McKenzie, Manager MCF answers questions about regional mobile coverage at a Local Government conference.

HEALTH AND SAFETY

The AMTA Health and Safety Committee, under the chairmanship of Mike Wood (Telstra), meets monthly to consider issues related to industry compliance with scientific safety standards and consumer access to independent expert information allowing them to make informed choices about their use of mobile telecommunications technology.

EME safety standards review

Throughout 2016, the H&S Committee has continued to monitor the ongoing review of international safety standards for radio frequency electromagnetic energy (RF EME) emissions from mobile telecommunications devices, television and radio, which is being undertaken by the international body responsible for setting standards, the International Commission on Non-Ionizing Radiation Protection (ICNIRP). The review is now much delayed but there is some prospect for its completion in early 2017.

Once completed, it is expected that the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), the federal regulator setting EME safety standards in Australia, will adopt the revised ICNIRP standard into its local version, thereby keeping Australia harmonised with the rest of the world.

AMTA supports periodic review of safety standards to ensure they remain relevant and based on the latest scientific evidence. Industry is required to comply with official safety standards via regulations on the sale of devices and on the operation of radiocommunications infrastructure.

Media - ABC Catalyst – Program on WiFi withdrawn

2016 also saw substantial media profile given to health and safety issues related to electromagnetic energy courtesy of the ABC's science program Catalyst which aired a report entitled "Wi-Fried" on Feb 16.

Prior to the program going to air AMTA provided a comprehensive submission to the Catalyst producers based on our long held position that the mobile telecommunications industry takes seriously all issues related to health and safety of mobile products and relies on expert advice from national and international health agencies, such as the World Health Organization (WHO).

For example, the World Health Organization (WHO) in its latest factsheet released in October 2014 says:

> ***"A large number of studies have been performed over the last two decades to assess whether mobile phones pose a potential health risk. To date, no adverse health effects have been established as being caused by mobile phones."***

Following the Feb 16 2016 ABC Catalyst program AMTA along with many viewers including some of Australia's leading scientists in this field complained about the unbalanced, biased and highly selective nature of the reporting.

Independent scientific experts labelled the *Catalyst* program as "*scaremongering and pseudoscience*" after it alleged that there was a growing fear that use of mobile telecommunications devices was linked to brain cancer.

ABC TV's Media Watch program said that the *Catalyst* program on the safety of mobile telecommunications was "*shockingly one-sided*", giving 14 minutes to "*controversial campaigners*" alleging health effects from mobile phones compared to only two minutes for the Australian Government's safety watchdog, which said there was no established evidence of a link between mobiles and cancer.

In response, AMTA submitted a detailed complaint to the ABC documenting many serious concerns with the information presented by the program.

The subsequent deliberations of the ABC's independent Audience and Consumer Affairs Unit recognised many of AMTA's concerns in reaching the following judgement announced on July 5 by ABC's Director of Television:

> ***"On 16 February 2016, Catalyst aired 'Wi-Fried?', a program about the safety of wireless devices such as mobile phones.***
>
> ***The ABC's independent Audience & Consumer Affairs (A&CA) unit investigated complaints about the program and found that it breached the ABC's impartiality standards by unduly favouring the unorthodox perspective that wireless devices and Wi-Fi pose significant health risks".***

In accepting the findings of the A&CA Unit's investigation the ABC acknowledged that errors were made in the preparation and ultimate approval of the program.

In response, the following announcement about the findings was broadcast directly following the *Catalyst* program on 5 July 2016; *the* ***"Wi-fried program will be removed from the ABC's Catalyst website; information relating A&CA's findings will be added to the Catalyst website; and information regarding A&CA's investigation and findings will be published on the ABC Corrections page"***.

ABC Director of Television, Richard Finlayson said the A&CA investigation had been thorough, involving complex issues and a wide range of material.

ARPANSA-AMTA Liaison Forum

AMTA met with the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) in Melbourne in August for its regular annual formal meeting with the Federal Government's radiation safety authority. The Radio Frequency standards review by the International Commission on Non- Ironising Radiation Protection and the World Health Organisation remained a key topic of discussion, in particular the timeline for ARPANSA's adoption of the revised standard.

"Shielding" devices

During 2016, the relaunch and marketing of a so-called shielding devices which were the subject of significant AMTA activity in 2015 once again required the Health and Safety's Committee's attention.

Through a number of actions drawing attention to authoritative advice from national and international expert bodies, AMTA responded to public claims that so-called shielding devices attached to mobile handsets would reduce EME emissions from phones.

The World Health Organisation, the pre-eminent international authority on EME and health effects, says that use of commercial devices to reduce radiofrequency field exposure have not be shown to be effective. ARPANSA also says such claims are inconsistent with scientific knowledge and recommends use of hands-free devices to reduce emissions if people are concerned.

Driver safety

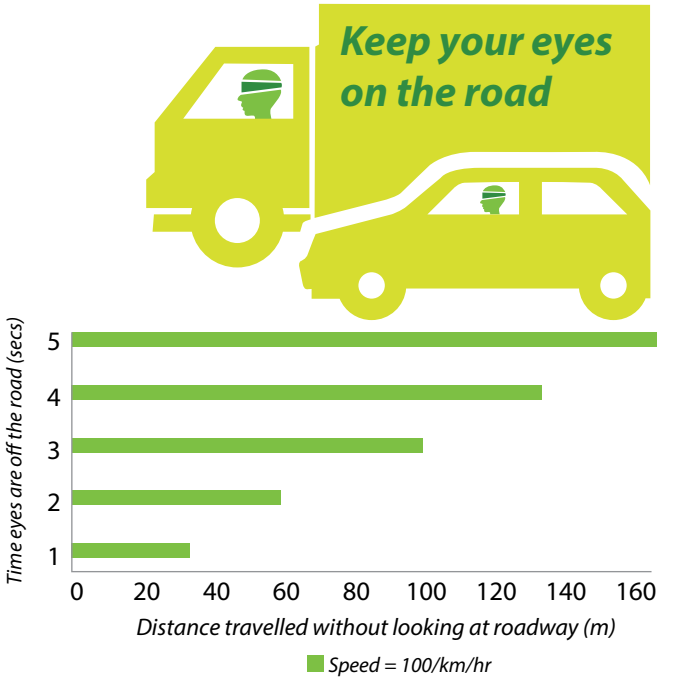
AMTA's driver safety sub-committee continued its outreach program in 2016 with carrier members (Optus, Telstra and Vodafone Hutchinson Australia) supporting AMTA's membership of the National Road Safety Partnership Program (NRSPP), which aims to help Australian businesses develop a positive road safety culture through building and sharing strategies to reduce the road toll.

The NRSPP promoted AMTA's safe driving tips and Mobile Phone Use policy under its "thought leadership" program to promote road safety in the workplace.

In 2016 the NRSPP worked with a coalition of Australian road safety authorities, research institutes, motoring clubs, peak medical bodies, insurance and telecommunications companies to develop and launch the first ever comprehensive national Mobile Phone Use in Vehicles Policy Guide (Guide).

This policy was launched on 15th August 2016 and contains the key messages of AMTA's Keep your eyes on the road campaign.

The Guide and Safe Use of Mobiles in Vehicles (SUMV) campaign launched by the National Road Safety Partnership Program (NRSPP), outlines how organisations can manage the risk of smartphone distraction in vehicles by developing and successfully implementing a policy tailored to their business environment and worker needs. Australian businesses are being urged to take advantage of the Guide to ensure their workers are aware of unsafe driving practices and organisations are providing a safe vehicle environment to help minimise risk.



LOST AND STOLEN

Mobile Device Security (IMEI blocking program)

Mobile device security continues to be a high priority for the mobile telecommunications industry. Introduced by AMTA in 2003, the IMEI blocking program has proven very successful in establishing Australia as a world leader in the prevention of mobile handset theft. Consumers are able to report their lost or stolen mobile phone and have it blocked from accessing all mobile networks in Australia.

In the first full year of the program's operation in 2003-4 there were 170,000 net blocks. For the corresponding period 2015-16, there have been 122,963 blocks – a 27.6% decline.

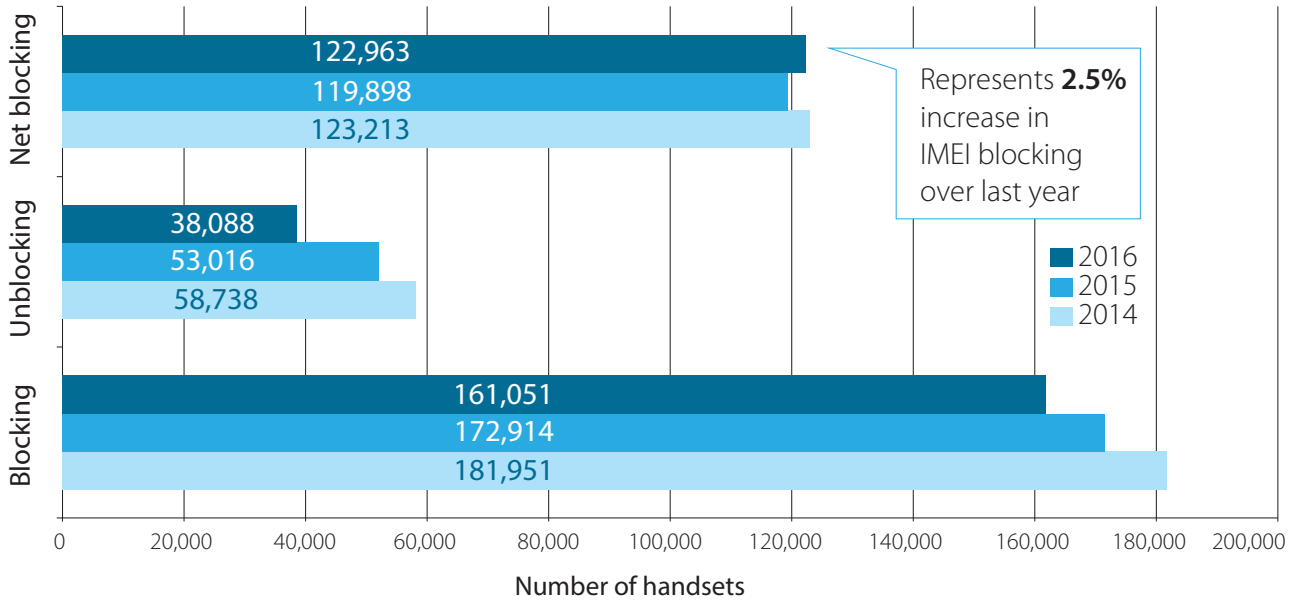
The growing demand for smartphones and tablets, has necessitated further enhancements to the program to ensure it remains an effective measure in total mobile device security. Smartphones are more valuable and also contain far more personal and confidential information than earlier generation devices. AMTA stressed the importance of utilising the various handset and network security features to protect against hackers and unauthorised access to data.

Our aim is to ensure the program continues to offer community benefits such as:

- Prevention of theft and assaults related to thefts;
- Prevention of fraud; and
- Prevention of a black market in smartphones and tablets (the program partners with dealers of second-hand goods to provide an access point for them to check if a device is blocked before they sell it a third-party).

To find more about Mobile Device security see **www.lost.amta.org.au**

Comparison IMEI Blocking Activity



AMTA BOARD AND STAFF

Chair: Matthew Lobb
Vodafone Hutchison Australia
Director since 15 September 2011

Danny Adamopoulos
Motorola Mobility Australia
Director since 2 May 2013

Jane Van Beelen
Telstra
Director since 19 March 2015

Ray Owen
Nokia Solutions & Networks Australia
Director since 2 July 2015

Stuart MacIntyre
Optus
Director since 19 November 2015

Emilio Romeo
Ericsson Australia
Director since 16 March 2016

Josh Delgado
Samsung Australia
Director since 8 September 2016

Sean O'Halloran
Axicom
Director since 8 September 2016

Daniel Zhao
ZTE Australia
Director since 8 September 2016

Retired Officeholders

Håkan Eriksson
Director since: 17 March 2012
Resigned: 16 March 2016

John Chambers
Director since: 19 March 2015
Resigned: 16 March 2016

Scott Zhang
Director since: 24 June 2014
Resigned: 8 September 2016

Sean O'Halloran
Director since: 12 March 2012
Resigned: 2 July 2015

Prasad Gokhale
Director since: 16 March 2014
Resigned: 8 September 2016

Finance and Audit Committee

Emilio Romeo (Chair)
Stuart MacIntyre
Jane Van Beelen

Remuneration Committee

Matthew Lobb (Chair)
Josh Delgado

AMTA Staff

Chief Executive Officer
Chris Althaus
Manager, Finance & Business Development
Glenn Brown
Manager, Policy
Lisa Brown
Manager, Office & Member Services
Renae White

MobileMuster

Manager, Recycling
Spyro Kalos
Education & Communications Officer
Larissa Shashkof
Office/Program Co-ordinator
Chantelle Singh

Mobile Carriers Forum

Program Manager
Ray McKenzie
Manager, Office / Executive Assistant
Renae White

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