Submission to the: Productivity Commission Inquiry into the Future Direction of the Universal Service Obligation in Australia.

An independent submission by
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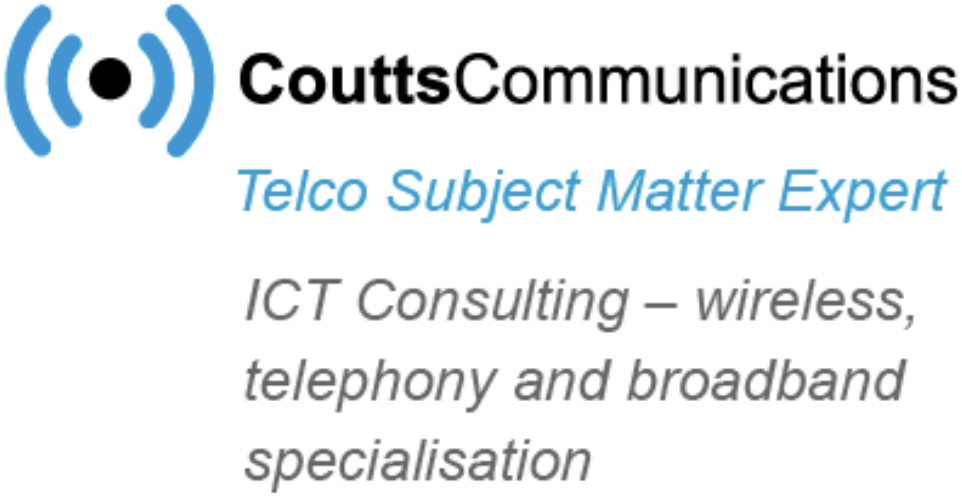

Acknowledgement

This submission is independent of any of my clients' interests.

I gratefully acknowledge that Vodafone initially funded me from mid 2014 to consider the future of the USO prior to the Deena Review [Ref 4] in 2015. Since late 2015 my further considerations of the way forward with the USO and related issues have been self-funded.

Introduction

I welcome opportunity to comment on the Productivity Commission's Issues Paper released at the end of April as part of it's inquiry into *the future direction of a universal service obligation in an evolving telecommunications market.* The final report due at the end of 2017 will have significant implications for both the telecommunications industry and regional and remote communities in Australia.

I strongly applaud the grasp shown in the Issues Paper of the complex nature of the USO policy and it's interaction with other policy issues in telecommunications. This submission to the Inquiry is to support my broad recommendations to move from Telstra to NBN in increased collaboration with the mobile network operators to be the primary national infrastructure.

However, my key message is that Australia's current perspective of remote & regional communications as highly unprofitable focus thus requiring expensive government intervention such the current USO policy. The new perspective is to recognize where direct government support is needed but increasingly support the exploitation of innovative technology solutions to both build sustain best practice cost effective communications solutions for remote & regional users.

Adoption of my forward from the current expensive regulatory relic will require a transition over many years but starting by building on the potential for NBN to deliver wholesale fixed services and mobile services. In parallel, the current funding model and contracts regarding the USO to be renegotiated to be directed at the longer term transparent technology neutral model.

Broad Way Forward to 'Rethinking the USO'

In my Vodafone commissioned report [Ref 3] and subsequent paper to the TelSoc http://telsoc.org Journal[1] [Ref 6] I recommend five interrelated recommendations primarily address to Universal Access.

I am glad to observe the Deena Regional Telecommunications Review [Ref 4] picked up the essential elements of these recommendations. However, I note while her report was forthright in describing the crucial role of better mobile communications for regional communities, the report does canvass ways to expand mobile service into the minimum service mix.

The emphasis of my research is in a sense the traditional one of achieving Universal Access and I have not discussed Universal Service as pointed out by my colleague John de Ridder [Ref 5] who addresses Affordability and Consumer Safe Guards equally important to the Review.

I have repeated my recommendations here adding a few additional points:

Recommendation 1: Universal Service Fund

Establish a Universal Service Fund (USF), to help fund non-commercial but socially important telecommunications infrastructure. The USF would be funded from contributions via an improved levy scheme that would look to reduce the

[1] ***ajTDE*** **Australian Journal of Telecommunications and the Digital Economy**

distortionary impositions of the current arrangements.

By an improved levy scheme, I envisage:

- The levy be a 50/50 (Industry/Government) of a similar order to the current level depending on demand. The USF would be technology neutral and have a broader remit broader covering mobile, backhaul etc

Recommendation 2: NBN as the Universal Infrastructure Provider

Consistent with NBN's current remit, formally designate NBN as the Universal Infrastructure Provider to connect all premises in Australia. This would mean that all Retail Service Providers on the NBN would be able to provide voice and broadband services to all premises in Australia.

The current situation where NBN Fixed Wireless and NBN LTSS Satellite is not empowered to provide a 'quality equivalent voice service' needs to be assessed.

Recommendation 3: NBN as the Standard Communications Service Provider

Plan the phase-out of Telstra's current USO obligation, to maintain its copper network to provide a Standard Telephone Service, and provide funds to NBN to deliver a modern Standard Communications Service delivering voice and broadband capability to all premises.

The above two recommendations are directed at recognizing the need for a transition strategy for NBN including mobile wholesale become the national provider of wholesale infrastructure and 'enable' a minimum service through a 'retailer of last resort' regularly assessed in an open tendering process.

Recommendation 4: Mobile coverage and choice

The Universal Service Fund should also consider the provision of funding for other essential services such as improving mobile coverage and choice in regional Australia via an expanded Mobile Black Spot Programme. The NBN should also develop a project plan to assist the industry expand competitive mobile services in regional Australia by providing access to NBN backhaul and by upgrading its fixed wireless towers to deliver a wholesale 4G regional mobile network

As discussed in the GSA report [Ref 2] a competitive mobile service (and broadband mobile) where possible offers the more relevant benchmark for a Universal Service going forward.

Two ways to expand mobile coverage and depth of coverage are:

- Inclusion of an amended[2] mobile black spot program in the USF
- The scope of NBN to:
    - expand its fixed wireless to include a mobile wholesale service to the mobile operators to retail
    - offer backhaul services using BOTH terrestrial and satellite

[2] Two immediate changes are the inclusion of backhaul and the prevention of State Government deals with Telstra limiting competition.

- Consider new platforms such as Aerostats (see http://www.designation-systems.net/dusrm/app4/aerostats.html to economically expand coverage

Recommendation 5: Broader range of telecommunications solutions

As an alternate to traditional payphone subsidies, consider broadening the remit of the Universal Service Fund to deliver a broader range of telecommunications solutions for regional communities and other consumers, such as public open access WiFi. Consideration should also be given to providing funds for small-scale community-led innovative communication projects to enable broadband services to all Australians.

Innovation in communication solutions for regional/remote communications in a country like Australia SHOULD receive stronger support from Government and industry. A few key examples that come to mind of innovations almost in spite of Government have been:

- The Digital Radio Concentrator System (DRCS) developed in the then Telecom Research Laboratories in the late 70s and supplied by NEC through the 1980s.
- The Satellite Payphone and WiFi extension developed by Active8me for the Government's Indigenous Phone program in recent years.

Discussion of the International Context of USF

As part of my research into options for a future USO, I reviewed the publically available material including reports done by the ITU and OECD that primarily focused on developing countries many of which I would characterise as in Phase 2 in the evolution of USO policy [Ref 2] or 'pre-Internet'. Yet examination of their approach to expanding rural telecommunications beyond the 'market efficiency gap' is the establishment of a Universal Service Fund (USF) funded from an industry levy. The oldest USF is in the United States managed by the FCC initially established in the 1930s and continues to evolve to include broadband but inclusion of the mobile service is under consideration.

The other observation, is that many developing countries that have struggled to provide fixed infrastructure have opened up competitive mobile networks to include rural coverage. Further South Africa and Mexico have examined the potential for a single mobile whole sale with retail competition [see discussion ref 3,6]. In this international context, the GSA report [Ref 2] provides an excellent overview of the increasing role of USFs to expand universal access and service particularly in the developing world. Much of the innovation in extending mobile coverage (ie wholesale mobile in Sth Africa, Mexico) is happening in developing countries as many other service innovations.

Section 6 of the report recommending priority to market efficiency measures are worth reading. Quoting: *"There is strong evidence, however, that the degree of success is affected by the degree to which government enables and empowers the market to work efficiently and to push the frontiers by its own means. There is every possibility that this trend can continue and deepen into poorer areas."*

The discussion application of the three-gap model to understanding the Australian

context is very helpful:

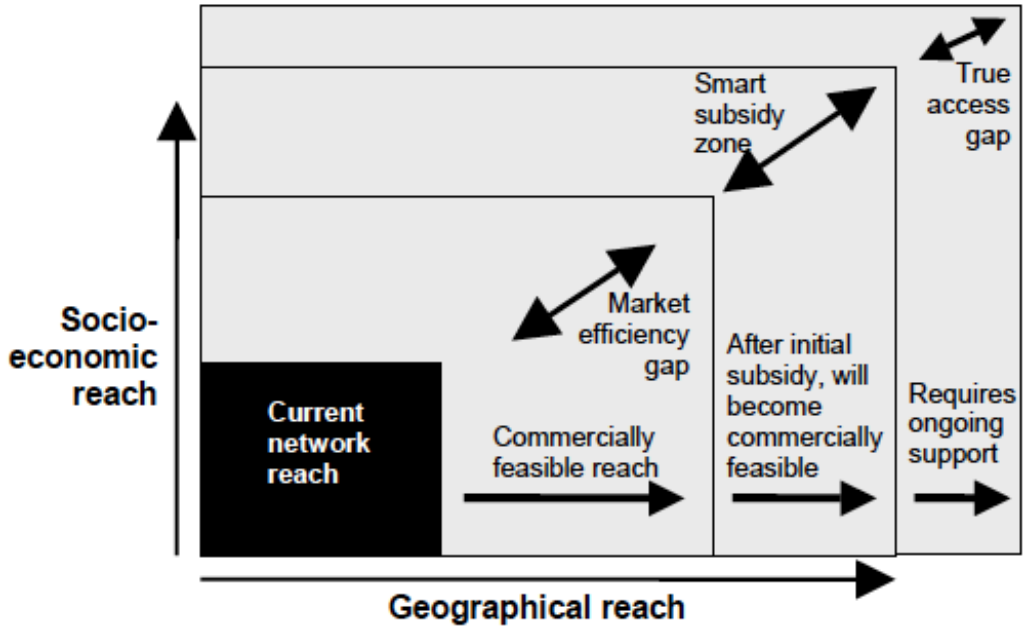

Figure 1 – The Three-Gap Model (Source: GSA [Ref 2])

Observations I would make on the Australian mobile sector of the telecommunications market:

- There is a likely significant 'market efficiency gap' as the Telstra mobile coverage so far exceeds that of Optus and Vodafone that have little incentive to try to match them
- Because the previous mobile black spots program allowed:
  - Telstra to secure deals with State Governments (eg VIC) to secure Telstra only, Vodafone[3] could not compete
  - Back haul access was not regulated

  The smart subsidy zone was not met
- The true access gap other than for remote is unclear particularly with greeter satellite backhaul possible and micro-base stations

Some of the elements of the US USF model while not covering mobile do target schools and hospitals for priority reliable broadband access.

Information Requests and My Responses

The Productivity Commission's Issues Paper makes information requests that provide a useful framework to summarize my views.

THE CURRENT USO

How many USO standard telephone services are currently provided and where? Who are the main groups of users of USO standard telephone services and payphones? What are the respective shares of these user groups? Aside from the rollout of the

[3] The reasons for non participation of Optus are no known to me

NBN, what are the major factors affecting the use of USO standard telephone services? What will be the impact of the NBN rollout on the provision of USO standard telephone services, particularly once the NBN rollout is completed? What are the major factors affecting the use of payphones? What are the main benefits and costs of the current USO? How effective is the current USO in meeting its objective of being 'reasonably accessible' to all people in Australia on an 'equitable basis', wherever they reside or carry on business? To what extent is the current USO consistent with promoting competition and innovation in the telecommunications sector? Has the current USO affected competition positively or adversely? Has it discouraged innovation or created distortions that have affected the use, quality and reach of telecommunications services in Australia?

I cannot provide any direct experience of the current USO but certainly look forward to reading the submissions of those who have.

In particular we would all be interested if Telstra release information on the number of USO services (and "STS equivalent"), delivery technology (eg copper, DRCS/High Cap, satellite), trends over time. This complete lack of transparency on how $300 million is utilized should be unacceptable in today's public policy consideration.

However, from my observations and experience in the industry over 40 years, the USO in the early phase of network liberalization in the 90s played a pivotal role in assuring regional and remote Australians the maintenance of the basic telephone service 'in the bush'. However, by the end of the 90's with the ubiquity of mobile phones and the Internet in urban Australia, the USO tied to the basic fixed phone (ie the STS) emerged as an expensive, complex and ineffective government intervention that retarded competition in the mobile sector.

In 2004 I first raised in the public domain that the USO include the mobile service. [Ref 1] which drew comments from colleagues like "don't talk about the war".

OTHER CURRENT POLICIES AND PROGRAMS
What other current government policies and programs interact with the current USO or may be seen as acting as a substitute for the USO? What are their main benefits and costs? How effective are these policies and programs in achieving their objectives?

The main recent government policy that that can be seen as part acting as a substitute for the USO is the Government decision to roll out a national broadband network (NBN) to provide a national wholesale broadband network with competitive retail suppliers. The curious anomaly of the NBN policy is it does not factor potential synergies with complementary mobile broadband networks and entrenches the USO and STS regulatory bureaucracy in a 20-year contract with Telstra.

The current USO policy sees $300 million directed to Telstra to provide a fixed telephone service and the non-commercial costs of the NBN [Ref 8] while still in debate are of a similar order. The recommendations of my way forward intrinsically recognize:

- The STS (or equivalent) is just one of the minimal essential services for today
- Mobile broadband and fixed broadband while complimentary are inseparable.

Emerging consensus on 5G around the world is consistent with this view.

- Any industry levy should combine any USO and NBN levy and should apply to both fixed and mobile operators

Some of these views are at odds with the views of the BCR [Ref 8]

RATIONALES AND OBJECTIVES

Are the underlying rationales for the current USO still valid in today's evolving telecommunications market? Can the NBN be treated as an alternative (wholesale) USO service? What is the justification for funding two sets of infrastructure (the NBN and the current USO standard telephone service) in the highest cost areas? What evidence is there to support the rationales? For example, are changes in technologies reducing the costs of providing telecommunications services in regional and remote areas? To what extent are there market-based alternatives to the delivery of universal services through the current USO? What evidence is there to support social or equity based rationales? What should be the objectives of any new universal services policy? Are objectives such as universal availability, affordability and accessibility appropriate?

In my view the policy objectives of universal availability, affordability and accessibility are still appropriate. With the realignment of the policy Telstra to NBN and mobile networks becoming the infrastructure providers, there is the potential generally for more market-based innovative alternatives to provide better telecommunications. A government/industry levy to stimulate industry best practice infrastructure and targeted social subsidies through a Universal Service Fund.

BROAD POLICY OPTIONS

What policy options should be considered in addressing universal services objectives? Is there a single policy or combination of policies that should be considered? What are their benefits and costs? Which countries should be considered in relation to any new universal services policies in Australia? What aspects of their universal services policies should be considered? Which evaluations or reviews shed light on the benefits and costs of different policies? Could the 'optimal' policy option for Australia be no USO?

The broad recommended policy recommendation is to move from the current focus on a fund[4] to fund a specific telecommunications service (s) to a technology neutral infrastructure Universal Service Fund (USF) in uneconomic areas (true access gap in the Figure) and targeted social subsidies (eg Indigenous communities). The optimal policy option for Australia is therefore to end the USO as we know it.

SCOPE

What types of services should be included in any universal services policy? Should current USO services — the standard telephone service and payphones — continue? If not, what alternatives to these services should be considered? Given the ubiquitous nature of mobile services, should fixed line services remain the focus of the USO? Given emerging market, technological and policy developments, what areas of market failure should be targeted by any new universal services policy?

[4] Note: the current USO industry levy is still referred to as a USF in some reports [Ref 2] unlike in this report.

Should there continue to be a voice services safety net for particular user groups and, if so, what would be the best approach to providing this? Which particular user groups (for example, Indigenous communities) and locations (for example, remote locations) should be targeted by any universal services policy? What are the telecommunications needs of these particular groups? Should telecommunications users in regional and remote locations reasonably expect exactly the same service quality and price (including usage) as those living in cities irrespective of the cost of provision? What should be the criteria for the inclusion or exclusion of particular telecommunications services, user groups and locations? Are the underlying rationales for the current USO still valid in today's evolving telecommunications market?

In my view, it is unreasonable for users in regional and remote locations to expect exactly the same service quality and price (including usage) as those living in cities irrespective of the cost of provision. The underlying rationales for the current USO are no longer valid in today's evolving telecommunications market?

However, it is reasonable for regional and remote users to establish a USF to target deficiencies in regional and remote infrastructure extending competition and promoting innovative community solutions.

QUALITY

How should the benchmark for minimum standards of quality be set for universal services? Are existing consumer protections applicable to telecommunications services provision reasonable? Is there scope to make these measures more efficient or cost-effective? Should consumer protection requirements be replaced or supplemented by transparent reporting by retail service providers?

No I don't think the existing consumer protections applicable to rural and remote telecommunications services provision reasonable that only apply to a very narrow definition of universal service. (ie the STS). I would note for example that the NBN fixed wireless and the NBN LTSS satellite CAN provide a 'quality' equivalent fixed telephone service that cannot currently meet the STS definition.

UNIVERSAL SERVICE PROVIDERS

How should universal service providers be determined? Should there be competitive tendering for the provision of services? Should a provider of last resort be designated and if so, on what basis? What incentives are required to ensure that a provider of last resort operates at minimum cost? Is imposing reporting requirements on universal service providers as to who uses the services technically feasible? What, if any, requirements should apply to all service providers?

Under the recommendations, I have outlined the way forward enables all NBN retailers to compete to provide fixed services including the 'quality voice' service as well as 'data volume intensive' services as well as better leveraging the NBN to enhance mobile competition. The USF once established can target critical gaps in infrastructure and target specific customer groups.

OTHER POLICY ISSUES

How might technological neutrality be implemented under any new universal services policy? How frequently should any universal services policy be reviewed, particularly given rapid changes in technology? What other issues should be considered with

respect to universal services policies?

FUNDING

How should the costs of delivering universal services be determined or benchmarked, and by whom? Who should pay for the costs (and wear the regulatory burden) of delivering universal services? Is it reasonable that telecommunications users in regional and remote locations do not bear more of the actual infrastructure costs of providing telecommunications services? What should be the main mechanisms used for funding the delivery of universal services? What is the role of government in funding social policy objectives? What should be the basis for determining any industry levy? How should any user co-payment for services be determined? Should there be means testing for users to access universal services?

An approach to establishing costs and the number of USF projects is through community consultation (eg through 'regional development councils') identified then open tender to the carriers.

As said previously, the USF fund would be used to cost effectively address priority deficiencies in our rural and remote infrastructure and USF projects should be identified by a bottom up process and funded through collaboration with carriers and communities with minimal government subsidy.

IMPLEMENTATION AND TRANSITION

How will agreements relating to the current USO affect the implementation of, and transition to, any new universal services policy? What impact will the timing of the NBN rollout have? Is there a need to review current governance arrangements? What should be the role of state and territory governments? What other matters should be considered in relation to implementing and transitioning to any new universal services policy?

There is no question this change from the current narrow regulatory 'universal service' to a the new model will need to be done over stages starting with stakeholders including Government, industry and regional communities reaching consensus on the long term.

In the short term Government and Telstra (and industry) need to agree a way forward that while honoring financial agreed commitments that is future looking providing opportunities for *all* Australians to benefit from the world's technological developments.

References

[1] Coutts Reg 2004 “The USO policy debate”, article in Exchange 16/32, 20th August 2004

[2] GSA Report 2012 “Universal Access : How Mobile can Bring Communications to All” http://www.gsma.com/publicpolicy/wp-content/uploads/2012/03/universalaccessfullreport.pdf

[3]] Coutts, Reg. 2015. "Better telecommunications services for all Australians Rethinking the USO Report", Commissioned by Vodafone Hutchison Australia. http://www.couttscommunications.com/Published Articles/RethinkingTheUSORegCoutts.pdf , published July 2015

[4] Shiff, D. 2015. "Regional Telecommunications Review", Australian Government, 23rd. Available at: http://apo.org.au/resource/regional-telecommunications-review-2015, published August 2015

[5] De Ridder, John. 2015. "The Future of the Universal Service Obligation (USO), An Occasional Paper", Commissioned by ACCAN https://accan.org.au/our-work/research/1132-the-future-of-the-uso , published November 2015

[6] Coutts, Reg 2015 “Better telecommunications services for all Australians - Further Thoughts on the Universal Service Obligation” for the TelSoc Journal AJTDE - Vol 3, No 4 - December 2015

[7] Productivity Commission 2016, “Telecommunications Universal Service Obligation Issues Paper”, released 7 June 2016 http://www.pc.gov.au/inquiries/current/telecommunications/issues

[8] Bureau of Communications Research 2015 “NBN non-commercial services funding options Final Consultation Paper” https://www.communications.gov.au/have-your-say/final-consultation-nbn-non-commercial-services-funding-options October 2015

Concluding remarks

Having been involved in telecommunications policy discussions for over 25 years, many of which touched on the USO policy. I make this submission to the Productivity Commission to help identify a way forward to replace the current USO policy focusing on the Universal Access component which needs to be combined with Universal Service aspects.

I look forward to offering further opportunities to discussing this issue.

Attachment - Professor Reg Coutts CV

Summary

After 17 years in Telstra from 1976 till 1993 covering research through to executive management when Dr Coutts was appointed to the Chair in Telecommunications at the University of Adelaide. As well as research and some teaching, the role was to build links between the University and the telecommunications industry. At the end of 2003 Professor Coutts left the University as Emeritus Professor to establish his own company Coutts Communications Pty Ltd (www.couttscommunications.com) that provides strategic advice to government and industry both in Australia and overseas. In mid 2006, Professor with a business partner established a new telecommunications venture Red Button Technologies www.redbutton.com.au.

The breadth and scope of his experience across the industry, government policy, legal disputation, research and technical innovation domains have given him management experience together with the acquisition of interpersonal and political skills very useful in isolating areas of disputation and building consensus. His depth of experience, knowledge and expertise has been particularly recognized recently with his appointment to the Government's expert panel in 2008 on broadband and in 2010 with his appointment as a part-time member of the national regulator the ACMA www.acma.gov.au

Throughout his career particularly from the early 1990s, Professor Coutts has contributed to the technical, economic and regulatory evolution of spectrum management practices.

Reg holds a BSc, BE (Hons) and PhD degrees from the University of Adelaide and is a Fellow of the Australian Institute of Engineers (IEAust) and a Senior Member of the American Institute of Electrical and Electronic Engineering (SMIEEE) and a Fellow of the Australian Computer Society (FACS). In 2010 Reg became a graduate of the Australian Institute of Company Directors (AICD)

Examples of Consultancies

As **Coutts Communications** since 2004 particular examples of recent experience as Coutts Communications are:

- Conducted a series of pilot interviews for the Collaborative Research Centre's (CRC) Smart Internet 2010 in January 2004. This involved looking at issues relating to the future of the Internet from the user's perspective including spam, digital rights management, the trade-off between cost and quality, fixed and mobile access to the internet, and the impact of other applications using IP such as VoIP.

- Provided expert advice in 2004/2005 on "man made radio noise" to the West Australian Planning Authority. The advice through their legal counsel was on

behalf of a group of landowners arguing against the objections by Telstra Corporation to the rezoning of land adjacent to one of Telstra's major satellite earth stations.

- 2007 as part of a task for the Australian economic regulator the ACCC on the comparison of WiMAX and HSPA technologies, a key question in was the likely availability and utility of suitable spectrum. This issue is very important in the consideration of broadband options in regional Australia.

- In March 2008 the Minister for Broadband, Communications and the Digital Economy, Senator the Hon Stephen Conroy, announced the 6 member Panel of Experts which included Professor Reg Coutts to assess proposals to build the National Broadband Network to advise the Government on the awarding of a A$4.7 billion contract to part fund the construction of the national broadband infrastructure. The panel submitted its report to the Government on the 21st of January 2009. The Government incorporated the advice of the Panel of Experts into the NBN policy announcement of April 9th 2009 to build the $43 billion FTTP network now being implemented. A key platform technology for the NBN that was advised by Professor Coutts was the Ka band satellite component.

- At the end of January 2009, Professor Coutts appeared as an Expert Witness before the Judicial Enquiry into the conviction of Mr Phuong Ngo for organising the murder in 1994 of the NSW Politician Mr Newman.

- Through 2009/12 Reg advised a number of clients in Australia and the US on their strategies to take best advantage from the Government's NBN policy.

- Since 2009 Professor Coutts has acted as an expert witness in various legal cases in regard to the use of mobile phone records

- In October 2010, Professor Coutts was appointed by the Government for a 5-year term as a part-time member of the Australian Communications and Media Authority (ACMA see www.acma.gov.au) which is the national regulator of the ICT industry in Australia much like the Federal Communications Commission (FCC) in the USA. He resigned in May 2014 to resume private practice.

- Since 2011 until 2015 Reg provided expert advice on Spectrum Auctions outside Australia.

- In the latter part of 2014 Reg undertook a study for Commercial Radio Australia (CRA) to consider the capability of mobile broadband networks to obviate the need for broadcast digital radio (https://www.radioinfo.com.au/news/mobile-good-supplement-not-replacement-radio-new-report)

- In the latter part of 2014 Reg undertook a broad research study funded by Vodafone Australia into possible policy approaches to reforming the out-dated USO policy