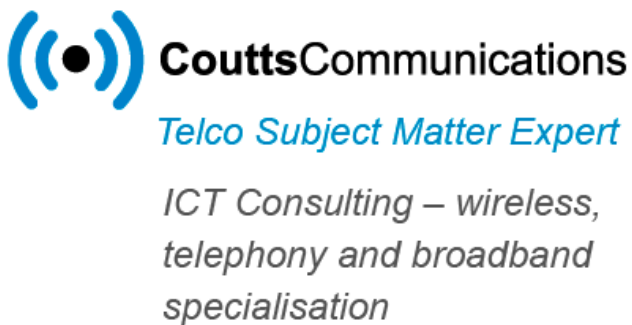


Better telecommunications services for all Australians

Rethinking the Universal Service Obligation

Professor Reg Coutts

<http://www.couttscommunications.com>



Commissioned by Vodafone Hutchison Australia

Contents

Contents	2
Foreword	3
Executive summary	4
Recommendations	5
What is the USO?	6
Evolution of the USO	6
Overseas experience with universal service schemes	8
Rethinking the USO	10
The increasing importance of mobile and the need for choice	11
The opportunity provided by the NBN	12
Bringing payphones into the modern era	14
Recommendations	15
Biography of the Author	16
Acknowledgements	16
References	17

Foreword

Three decades ago, prior to the internet, most Australians used a fixed line telephone, especially people living outside major cities. Mobile phones were in their infancy and public payphones were a vital communications service outside the home.

The main role of the Universal Service Obligation (USO) was to provide funding to Telecom Australia (in 1995 becoming “Telstra”), to maintain its copper access network in regional areas where it was deemed uneconomic. This infrastructure subsidy has been funded largely via a levy on telecommunications companies.

In 2015, the Australian society and economy have been forever and fundamentally altered by the internet and new telecommunications technologies. Smart devices and mobile telecommunications have increased connectivity, grown the economy and jobs, enabled new industries and boosted productivity.

Consumers are demanding improved mobile coverage, devices are becoming more data-hungry and businesses want access to next-generation networks to improve productivity. Consumers now expect a choice of providers so that can examine who is best able to meet their needs and give them the best deal.

Unfortunately, public policy on delivering access to the benefits of modern technology outside our major cities is stuck in the past.

The NBN gives Australia a unique opportunity to close the digital divide between city and country by massively improving access for voice and broadband data services using new technologies. With the profound changes the NBN will deliver, government funding and policy arrangements need to change.

As it stands, the USO is a costly and ineffective scheme which is holding Australia back and treating people living in regional Australia as second-class citizens. Through the NBN, taxpayers are spending billions of dollars funding the replacement of copper lines in regional areas, with fixed-wireless and satellite, for the delivery of internet services. Yet in the same areas, taxpayers also help fund Telstra to maintain its copper wire network for fixed-line home phones despite the capability of fixed-wireless and satellite technologies to provide a high quality telephone service.

A new, smarter approach is needed. Overcoming the roadblocks to competitive investment in regional Australia will ensure consumers and businesses receive greater coverage, better value, better service and greater innovation.

Vodafone has commissioned this report to analyse the current USO and propose recommendations to reshape the USO for the 21st century to deliver reliable communications services for all Australians.



Iñaki Berroeta
Chief Executive Officer
Vodafone Hutchison Australia

Executive summary

When it was created almost 30 years ago, the Universal Service Obligation (USO) scheme was leading edge public policy. When the Australian telecommunications market was deregulated, the USO was created to ensure that standard telephone services and payphones were reasonably accessible to all people in Australia wherever they live. This was when the dominant form of communications for Australians was the fixed line home phone and payphones were considered a necessity.

Almost three decades later, the telecommunications market is vastly different. Internet and mobile services are now considered by consumers to be essential and access to fast and reliable broadband is seen as very important. The deployment of fast 4G services has resulted in Australians becoming some of the fastest adopters of internet-enabled smart phones in the world.

The rollout of the NBN will see further changes in the telecommunications market as over time the old copper access network will be made redundant by a mixture of fibre optic cable, fixed wireless and satellite technologies. The NBN can also be used to deliver improved mobile services, particularly in regional Australia.

Despite these enormous changes and the increasing use of data, the USO remains in its original outmoded form as a costly subsidy scheme for fixed line phone services delivered over the copper wire network¹. Each year, the telecommunications industry and Australian taxpayers spend approximately \$300 millionⁱ maintaining ageing copper wire and payphone networks under the complex and opaque USO arrangement.

The NBN rollout and the increasing consumer preference for mobile services anywhere, anytime means now is the ideal time to have a discussion about how best to reshape the USO for the communications needs of today and the future.

The Federal Government has acknowledged the need to modernise the USO. For example, the Agricultural Competitiveness White Paperⁱⁱ released in July 2015 states that “traditional policy responses need to be updated so that internet connectivity can be funded as an essential service.”

Australia has the opportunity to create a new universal service scheme that delivers reliable voice and internet services for all Australians using a range of technologies through the NBN.

In addition, some of the current USO funding could be used to improve mobile coverage and choice in regional Australia by co-funding much needed infrastructure in remote areas and by creating incentives for the industry to innovate, further invest in and share mobile networks.

This report makes five interrelated recommendations to replace the current USO scheme with a more transparent and efficient scheme that uses the NBN as a springboard for change.

The report does not address other communications services that are similarly challenging to extend to rural and remote Australia including the Triple Zero emergency service and Public Safety Mobile Broadband. These could however be incorporated in the proposed scheme.

¹ An obvious historical relic of the current USO is the need for ‘pre-selection’ allowing customer selection of long distance carrier

Recommendations

Recommendation 1: Universal Service Fund

Establish a *Universal Service Fund* (USF), managed by the Department of Communications, 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 distortionary impositions of the current arrangements.

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.

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.

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

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 communication projects to enable broadband services to all Australians.

What is the USO?

The USO is an industry and taxpayer-funded scheme designed to ensure that all Australians have access to a 'Standard Telephone Service'² and that payphones are reasonably accessible.

The USO was created to ensure that a voice telephony service could be provided, even in remote uneconomic areas. The *Telecommunications Act 1991* provided that Telstra would bear the USO and all telecommunications carriers would be required to contribute to the cost of it.

Prior to 2012 the Minister, based on advice from the Australian Communications and Media Authority, set the annual level of USO funding. In July 2012 Telstra entered into a contractual obligation to deliver the standard telephone service for a term of 20 years. At this time, the government increased the annual USO levy provided to Telstra and included an annual Budget contribution of \$100 million from 2014-15.

Currently, \$253 million per annum is allocated to the provision of a standard telephone service, with \$44 million per annum allocated to the provision of payphones.ⁱⁱⁱ It is important to note that funding is provided to deliver uneconomic infrastructure. In effect the current framework brings together the 'infrastructure-provider-of-last-resort' and the 'service-provider-of-last-resort' obligations. With the delivery of the NBN this intertwining of obligations requires a rethink.

Once the NBN is rolled out Telstra will deliver the standard telephone service over NBN technology within the NBN fibre footprint. Outside the NBN fibre footprint, which includes much of regional Australia, Telstra is required to provide a standard telephone service, largely via its ageing copper network. This appears to be a conflated and redundant requirement given the NBN has in effect become the 'Universal Infrastructure Provider' using modern technology platforms. 'Service provider of last resort' obligations could now be provided by a wider range of providers in more flexible and innovative ways.

Evolution of the USO

When the USO was introduced, Telstra as the incumbent national carrier was chosen to deliver the standard telephone service to high cost/low revenue regional and remote areas. As part of industry liberalisation, all telecommunications service providers contribute to the USO fund in proportion to their industry revenue.³

Over the period of the next 10 years from the mid-1990s, governments conducted a number of reviews to enable the USO to be more technology relevant and sustainable, with minimal change to the USO as a result.

After much public discussion, the USO service definition was modified to include data⁴ and services to enable better access for people with disabilities. Despite attempts to introduce provider contestability and to review ways to improve transparency to the cost of the subsidy provided to Telstra, few changes were made.

² The Standard Telephone Service (STS) is a service proscribed by regulation. Essentially it is a voice grade service which enables the user to establish a telephony connection to another user. There is also a set of service performance requirements such as reliability and service quality. Broadband capability is not a remit of the current USO scheme.

³ Eligible revenue as assessed by the ACMA for the USO levy termed the Telecommunications Industry Levy (TIL).

⁴ The requirement is to allow 'reasonable access' to a data service.

Further, the definition of the USO solely around the fixed telephone began to be questioned.^{iv} Despite the significant increase in the reliance on mobile services, including in regional and remote Australia, there has been a reluctance for any policy intervention to deliver greater mobile coverage as part of the NBN.

Mobile services are now considered by many Australians to be their primary avenue of access to broadband and telephony services. Since the launch of 3G HSPA, HSPA+ and 4G LTE data services, mobile has become a reliable and fast mechanism to deliver broadband for many people in regional Australia.



Figure 1 – Regional attitudes to mobiles^v

Despite the changes to consumer behaviour (and priorities) and the developments in mobile services, the policy debate about broadband delivery remains focused on fixed services. The more recent policy conversation has been focused on the political debate about the NBN, preventing a fresh analysis of the role of a universal service scheme or consideration of how best to reshape the policy framework.

To put the USO in perspective, the evolution of USO policy can be described in four distinct successive phases.

Phase 1: Coverage

In the early development of telecommunications it was recognised that the value of a telephone increased with its interoperability with more people who were connected. This is the 'externality value' that still applies in many developing markets. The argument is then made for an internal cross subsidy by the monopoly incumbent to deliver a broad geographic service. A monopoly solution was seen as an acceptable model, largely because this was how telecommunications services were provided up until the 1980's and 1990's.

Phase 2: Affordability

In a developed economy, competition is progressively introduced in high margin segments such as long distance calls. The need for a USO-type scheme is argued to ensure affordable access to all citizens. This is usually funded by the industry rather than by government. Relative to the US that entered this phase in the early 1970s, Australia started this phase in the early 1990s. Competition was the main driver for reducing prices but if there were monopoly areas then the infrastructure subsidy of the USO tacitly expected that these areas would not pay higher prices.

Phase 3: The Internet

The third phase accelerates from the mid-1990s with the transformative impacts of the internet and mobile services. In this phase the standard telephone service is no longer the universal service, broadband has become the norm and smart phones have become an essential tool for both internet access and telephony.

The convergence of telecommunications with information technology and broadcasting and the growth of Over the Top (OTT) services results in reduced viability of levying only telecommunications companies as part of a USO scheme. At the same time, the USO payments to one telecommunications entity, which is usually the original incumbent, distorts competition in higher cost areas, particularly rural and regional areas.

Phase 4: Digital Convergence

Given the convergence of fixed and mobile technologies, the need for integrated fixed and mobile broadband must now be recognised. In Australia this requires a modification of the original strategic decisions behind the NBN and an examination of the role the NBN can play in delivering better mobile services in addition to fixed broadband services. It also requires changing the current USO to a more transparent and efficient scheme that uses the NBN network to bring improved services to more Australians.

While there are some programs that facilitate the provision of mobile services, there are no examples overseas of the Phase 4 of the USO policy evolution where governments have committed to an intervention in universal broadband, although the United States is in the process of attempting change. In my view, Australia has the opportunity to be again at the forefront of this policy approach with a forward looking Universal Service Fund (USF) to replace the USO.

Overseas experience with universal service schemes

Both developing and developed countries continue to grapple with how to intervene effectively in telecommunications markets for the national good. A key observation from the universal service scheme experiences overseas of the last 10 years, particularly in developed countries, is that these schemes have not been developed to take into account the rapid adoption of new technology.⁵ Indeed, some of the major innovations in universal service policy are in fact coming from developing economies.^{vi}

A theoretical framework for universal service schemes has been developed by the International Telecommunications Union (ITU). This defines the two components of the Universal Access and Service (UAS). The ITU has reviewed the approach taken to policy and implementation of UAS around the world.^{vii}

European Union

There have been moves to broaden the USO service definition in the European Union to incorporate broadband policy objectives in universal service and access strategies, but there has been a reluctance to include mobile services. There is currently a variety of USO arrangements across Member States.

The European Commission's response is illustrative of the glacial pace of progress. The EU Universal Service Directive introduced a requirement that the scope of universal service obligations be reviewed every three years. To be included in the scope of a universal service policy in the EU, a service has to satisfy two tests:

⁵ In Australia this is compounded by the scale of the incumbent's geographic dominance.

(a) In the light of social, economic and technological developments, has the ability to use the service become essential for social inclusion?

(b) Are normal commercial forces unable to make the service available for all to use?

This is a somewhat backward looking perspective and continues to neglect the need for subsidies to enhance not hinder competition.

United States

In the United States, the \$4.5 billion Universal Service Fund (USF) covers a myriad of services. Since 2011, the USF has included broadband and mobile. While it is highly complex, it does take a broad funding approach as I recommend rather than being service-specific like Australia or Europe.^{viii}

Latin America

Latin American countries have been successful in using reverse auctions as a way to achieve competitive tension and allow for the provision of services in areas which have previously not been serviced.

For example, Chile implemented an innovative USO policy that has both achieved spectacular results and confirmed the value of a transparent process. The Chilean approach is based on government funding for specific projects via a competitive tender process. This has resulted in minimising the need for state funding and achieving greater leveraging of private investment with subsidies determined by market forces rather than administrative determinations.^{ix} I note that the Australian Government's Mobile Black Spot Programme has incorporated a similar approach and has garnered significant community support.

In developing countries, mobile broadband offers the most attractive platform for introducing integrated broadband making no distinction between fixed and mobile. In Mexico, for example, the Government proposes a single mobile wholesale operator initially owned by government but to be then sold.

Africa

The African continent in particular has achieved seen tremendous growth⁶ in tele-density as a result of the adoption of mobile communications effectively 'leap-frogging' the need for a fixed telecommunications infrastructure as we have known it. A number of countries in Africa are considering mobile broadband and USF schemes to provide affordable access to all.

The potential of a single LTE broadband mobile wholesale has recently received a lot of interest to extend mobile coverage into regional areas⁷.

Broader international activity

The ITU World Regulatory Database helps in detecting trends in regulatory practice. Summarising the data supplied on universal service policies over the last 14 years^x indicates that:

⁶ See the ITU news in ref vii

⁷ Wholesale broadband mobile is discussed in ref xxix and xxx

- Universal Access and Service Funds are rising in popularity, and in 2007 were used in 60 per cent of countries that responded to the ITU survey;
- Obligatory investment in unprofitable areas has correspondingly been declining in popularity; and
- The use of state-imposed tariff controls to benefit all customers or just to benefit specific eligible groups has declined steadily since 2003 and dipped below 20 per cent of respondent countries in 2007.

The OECD has examined reforming the USO for what are called ‘next generation’ networks where service evolution is considered in a broad service architecture.^{xi} To create an updated USO, it states that the challenge has moved from simply ensuring equitable access to voice services to including broadband, content and applications.^{xii}

In summary, some of the good practices from overseas are:

- The definition of ‘essential services’ is updated in policy;
- The move towards a Universal Service Fund model to fund required infrastructure and services in regional communities;
- The use of reverse auctions as a way to achieve competitive tension instead of using an administrative approach to costing subsidies;
- The move away from relying on telecommunications industry taxation towards alternative models to fund subsidies; and
- The use of ‘smart subsidies’ to leverage public investment from telecommunications providers and communities.

It has been argued that there is no economic argument for a universal service scheme in developed economies and that it is just another tax on industry.^{xiii} If this approach was followed in light of the current Federal Government’s deregulation agenda, the USO could be seen as an easy target for removal. In its current guise, the argument for abolition of the USO is compelling. It is essentially an anti-competition tax on industry to benefit of the already dominant telecommunications provider.

In my view however, reform of the current USO presents an opportunity for targeted subsidies to protect regional consumer interests and promote competition and innovation.

Rethinking the USO

The current outdated ‘one size fits all’ USO scheme has resulted in unintended consequences – taxing some companies and their customers, distorting competition, blocking innovation and subsidising one industry participant at the expense of others.

Over more than a decade, three successive Regional Telecommunications Reviews have all commented on the increasing failure of the USO to achieve its perceived purpose. Unfortunately, successive governments have failed to act to address the crucial role affordable access by all Australians to modern telecommunications plays in our economy and society.

The 2002 Estens Review^{xiv} said: “In particular, we found that the current Universal Service Obligation (USO) arrangements are not working well. Nearly all stakeholders are dissatisfied with them and they are neither practical nor functional for modern telecommunications.”

The 2008 Glasson Review^{xv} identified that a new regulatory framework was needed to replace the existing USO legislation and noted that the transition to the NBN provided a clear opportunity to reform the USO.

The 2012 Sinclair Review^{xvi} made a clear recommendation for greater mobile coverage including the consideration of regional roaming. The current Government has recently announced the first round of implementation of the Mobile Black Spot Programme under a policy approach that incentivises co-investment as discussed later in this report.

The objective of any universal service scheme is to provide an economic incentive to invest in infrastructure to enable affordable access to basic telecommunications services where it is uneconomic to do so without the incentive.

Under the current USO scheme, the most profitable market participant receives 100 per cent of the benefit of the scheme, which results in significant market distortion. With the significant changes in the telecommunications market, including the construction of the NBN fixed wireless and satellite networks in regional Australia, the current USO funding of the copper access network in particular is increasingly redundant.

Consequently, the current USO scheme needs to be urgently updated to address inadequacies in regional telecommunications infrastructure for voice and internet services that cannot be addressed by market forces alone.

The roll out of the NBN to regional and remote premises provides the opportunity and basis for updating the current USO and moving to a *Universal Service Fund* approach. The worldwide trend to a *Universal Service Fund* approach provides for better targeting of the incentive and avoids the narrow legislative prescription of the basic telecommunications service.

In short, a modern telecommunications infrastructure underpins the digital economy, particularly in regional and remote Australia where its contribution the Agricultural sector is recognised. A Universal Service scheme via a *Universal Service Fund* makes sense in Australia because it can improve access to telecommunications services in regional areas where population densities are low and it is often uneconomic for the private sector to provide such infrastructure.

The increasing importance of mobile and the need for choice

For many regional Australians, mobiles are increasingly more important than fixed telephone services^{xvii}. Despite this, competitive mobile services are not available to many regional and remote areas of Australia.

The initial starting premise for this report was that mobile services should be part of a reformed universal service scheme. Today's mobile services support voice and data and have been progressively recognised^{xviii} as an essential element of a modern universal service scheme.

Even though mobile phones are now widely accepted as a way of providing voice and data and are also used to provide public access, developed countries have to date not used USO-style interventions to provide better mobile coverage in rural areas. Policy makers have been wary not to distort the competitive rivalry in addition to coverage licence conditions⁸. Meanwhile, in developing countries mobile services are often recognised as the only way to provide an accessible and affordable broadband communications service.

While there has been an assumption by successive governments in Australia that mobile carriers would continue to expand coverage, the investment required to improve networks is prohibitive where there are

⁸ Coverage license conditions for mobile operators were rightly removed in the late 90s review of competition unlike many other countries.

large distances and small markets. The build economics in many places in regional Australia mean that even one infrastructure network is not viable without subsidies.

There is, however, a smarter way to approach the issue of mobile coverage expansion beyond the existing coverage footprint by using government funds to encourage private sector investment and boost industry collaboration.

The Federal Government's Mobile Black Spot Programme was borne out of the need to provide coverage to places where it was uneconomical for the mobile carriers to build the infrastructure needed to deliver a mobile service.

Under the Programme the Government is offering subsidies to improve the business case for coverage expansion, thereby accepting that there needs to be an intervention in the market to deliver coverage to many places outside of the existing coverage footprints of the mobile carriers. By requiring the winning bidder of a site to explore opportunities to share or co-fund with other mobile network operators, the Programme is also helping to create a more competitive market in regional areas.

The Mobile Black Spot Programme process has identified more than 6,000 black spots in need of coverage expansion. The \$100 million in Government funding for the first phase of the Programme and \$60 million in funding for phase two is a good start in tandem with state government and carrier funding. The Government has announced that under the first round of funding, the Programme will deliver almost 500 new or upgraded mobile base stations around Australia – 429 Telstra base stations and 70 Vodafone base stations.

The Programme is not enough by itself to deliver improved coverage to every inhabited area that requires it however. In my view, a modern policy framework that addresses the need for mobile coverage expansion and competition must include a rural wholesale mobile infrastructure option.

To further improve mobile coverage and choice in regional Australia, this report therefore recommends that a portion of the current Government USO funding of \$100 million per annum be diverted to an expanded Mobile Black Spot Programme. This will provide a sizable fund to improve and expand mobile services and competition in regional Australia. An ongoing, as opposed to ad hoc, programme would have the additional benefit of providing greater opportunities for industry collaboration for infrastructure sharing and more strategic long term planning by regional communities about what are the long term objectives of their telecommunications requirements.

The opportunity provided by the NBN

In 2009, based on recommendations of an expert group, the Federal Government announced that it would fund the construction of a wholesale only fixed National Broadband Network (NBN) to provide broadband services to all premises in Australia, including the remotest seven per cent.

This remote portion was estimated to account for some 25 per cent⁹ of the total capital cost of the NBN. The NBN will deliver broadband services via a mix of fibre optic cable, fixed wireless and satellite to urban, regional and remote consumers.

The NBN will not provide a standard telephone service to the remotest seven per cent of Australia.^{xix} It is proposed that these premises receive NBN fixed wireless or satellite internet services but will continue to rely on the ageing copper wire network, or equivalent, for their telephone service. As will be discussed

⁹ The author assessed this figure based on the NBN 2008 Implementation Study.

below by proscribing the technology solution, government policy has established dangerous rigidities in objectives and outcomes.

In the recent Vertigan report, the net cost of delivering the NBN's fixed wireless and satellite services has been estimated at \$6.1 billion.^{xx} This represents a huge investment in broadband for regional and remote Australia and shapes the context for any discussion of a reformed USO scheme.

The case for reform of the USO in Australia has been building for more than ten years as a result of rapid technological change and convergence and a more competitive market. The rollout of the NBN presents an opportunity to manage the progressive retirement of the redundant copper wire network that underpins the current USO scheme, providing an ideal case for urgent reform.

We need to be recognise that the entire copper wire network will be retired over time, not just in the metro fibre rollout. The NBN fixed wireless and LTSS satellite services can both provide a high quality telephone service. USO funding can accelerate this opportunity and enable a wider range of better solutions where the standard NBN project cannot deliver the requirements.

It is therefore difficult to justify taxpayer funding to Telstra for the upkeep of a redundant copper wire network while also funding the delivery of superior fixed wireless and satellite services to the very same premises.

The fixed wireless network the NBN is deploying is using point to point LTE technology that is capable of delivering a high quality Voice over LTE (VoLTE) service. The NBN satellite delivery of broadband is also capable of delivering a telephony service called Traffic Class 1 (TC-1) which will benefit remote and indigenous communities in particular. In the long term future satellite deployments (or partnerships) could deliver even better low latency solutions.

The scope of NBN's fixed wireless mandate should be extended to provide an open access wholesale 4G mobile network that would significantly improve the depth of coverage to residences over the more targeted individual coverage of the three mobile network operators.

Further, the NBN could also provide access to its infrastructure on reasonable terms, including facilities and backhaul, to facilitate the supply of better mobile services in rural and regional areas. A modernisation of the current USO scheme could help fund these important extensions to the NBN network and may go some way to addressing competition distortions caused by current policies in these areas and to reducing the overall funding burden associated with the current cross-subsidy arrangements.

This report recommends that the Government formally designate NBN as the *Universal Infrastructure Provider* to connect all premises in Australia. This is already part of its roll out remit and would mean that all Retail Service Providers on the NBN would be able to provide voice and broadband services to all premises in Australia.

In parallel, this report recommends that the Government direct NBN to 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. NBN's success should be to deliver improvements in both fixed and mobile voice and broadband services.

The Government should also plan the phased diversion of USO funding from Telstra to NBN to help fund its Universal Infrastructure Provider obligations via a new *Universal Service Fund*. This fund could help deliver infrastructure to premises and mobile base stations. Consideration should also be given to provide funds for NBN to upgrade its fixed wireless network to enable a wholesale regional 4G mobile network.

Bringing payphones into the modern era

The USO includes the provision of public payphones, the need for which has been challenged by the routine availability of mobile phones. Over five years Telstra has decommissioned half of its payphones in recognition of reduced demand¹⁰. Despite the decreasing number of payphones, a set amount of \$44 million per annum is allocated under the USO for the provision of payphones.^{xxi}

The question is whether there is an ongoing need for access to some form of public payphone as part of the USO reform. More recently there has also been a growing argument that public open access should be through WiFi, because broadband access now rivals telephony as an essential service. In considering this we would need to assess demand trends coupled with coverage gaps and competition issues.

In November 2014, New York embarked on a new age payphone infrastructure based on free WiFi that addresses demand from the disadvantaged.^{xxii} Closer to home, Telecom NZ^{xxiii} and Telstra^{xxiv} both have programs which will convert payphones into WiFi hotspots.

Yet unlike New York, these WiFi zones will be available free only to customers of Telecom NZ and Telstra with customers of other providers able to access these services at a cost. The Government is also expanding the provision of free WiFi, with the indigenous payphone program opening up the concept of public access.

A payphone that provides affordable open access to basic telecommunications (e.g. internet, voice and social networking) is still relevant but needs to be recast around free public WiFi. The risk of competitive distortion of the potential public good needs to be addressed.

As an alternate to traditional payphone subsidies, it is recommended that a review be undertaken into the costs and benefits of the provision of public open access WiFi services in regional centres and other areas. Consideration should also be given to provide funds for small scale community-led telecommunication projects utilising WiFi and other technologies.

In areas of remote Australia where, even with micro-base station technology and incentives, 'continuous' mobile is not realistic, islands of WiFi coverage fed from satellite hubs can provide a much improved mobile experience.

There is therefore an important opportunity to allocate funds towards community led local solutions. The immediate opportunity is WiFi services but it could expand into other services. For example *Universal Service Fund* funds could be allocated to facilitate the development of important end user requirements. Examples that come to mind include:

- **Farming productivity:** Development of mobile coverage expansion technology that farmers could deploy on their properties using the NBN. Individual farmers could use this technology to deliver improved mobile coverage where they need it, resulting in significant improvements in farm productivity.
- **Disability services:** The key challenge in disability services is to source funds to deliver improvements and changes to disability telecommunications equipment and services. USF funds could be used to deliver telecommunications products for end users that have specific needs.

¹⁰ According to the ACMA Communications report 2008-09, there were around 39,328 payphones. According to the ACMA Communications report 2013-14, there were around 17,805 payphones.

- **Indigenous communities:** Indigenous communities often have distinct telecommunications requirements that require tailored solutions. Funds could be made available to meet these specific needs.

Recommendations

The basic challenge for universal service policy reform is to deliver a scheme that leverages the NBN, progressively encourages the involvement of the private sector and drives greater competition.

This report makes five interrelated recommendations to replace the current USO policy with a more transparent and efficient approach by establishing a *Universal Service Fund* which uses the NBN network as a springboard for further service improvement and recognises the importance of mobile services to regional Australians.

Recommendation 1: Universal Service Fund

Establish a *Universal Service Fund* (USF), managed by the Department of Communications, 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 distortionary impositions of the current arrangements.

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.

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.

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

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 communication projects to enable broadband services to all Australians.

Biography of the Author

Emeritus Professor Reg Coutts



Reg Coutts' career spans over 35 years in the telecommunications industry. After completing his PhD in communications engineering in 1976, Reg began working in the research labs of what was then Telecom. Reg was involved in the early developments of 3G mobile technologies with the International Telecommunications Union.

In the 1980s Reg moved to an executive management role in the new mobiles division of Telecom as the national manager strategy. In 1993 Reg took up the inaugural chair in telecommunications at the University of Adelaide. Following this Professor Coutts formed his own company, Coutts Communications and founded Red Button Technologies in 2006.

In 2008 Reg was appointed a member of the Government's Expert Panel on the National Broadband Network (NBN). In October 2010 Reg was appointed to the Australian Communications and Media Authority and served as a member of the Authority until 2014.

Currently Reg is an Emeritus Professor of Telecommunications of the University of Adelaide, and is Chair of the Telecommunications Association (TelSoc). Reg is a graduate of the Australian Institute of Company Directors.

Acknowledgements

Although this report was commissioned by Vodafone Hutchison Australia Pty Ltd, the views expressed in this report are those of the author. The author acknowledges the advice and suggestions of colleagues, many of who have been on the USO journey over the past 25 years and who have provided advice, references and criticisms in relation to this report.

References

- i** Telecommunications Universal Service Management Agency (2014), Annual report 2013-14, p46
- ii** Agricultural Competitiveness White Paper, Stronger Farmers Stronger Economy, Australian Government July 2015
- iii** Telecommunications Universal Service Management Agency (2014), Annual report 2013-14, p46
- iv** The USO policy debate, Reg Coutts, Exchange 16/32, 20th August 2004
- v** Empirica Research Report, Telecommunications in Australia, 2014
- vi** Connecting everyone by mobile phone, 2007 ITU news
<http://www.itu.int/itunews/manager/display.asp?lang=en&year=2007&issue=07&ipage=universal-telephony>
- vii** Introduction – Universal Access and Universal Service, Intelecon, 2009 update
<http://www.inteleconresearch.com/pages/documents/UASFFunds2009update-Oct2009.pdf>
- viii** Understanding the impact of the Universal Service Fund and Intercarrier Compensation Transformation Order, KPMG brochure 2012
<http://www.kpmg.com/US/en/IssuesAndInsights/ArticlesPublications/Pages/universal-service-fund-intercarrier.aspx>
- ix** Closing the Gap in Access to Rural Communications Chile 1995-2002, World Bank
<http://documents.worldbank.org/curated/en/2002/02/1717449/closing-gap-access-rural-communications-chile-1995-2002>
- x** Maximizing the Potential of Universal Service Funds (USFs) Through Successful Administration And Management by Janet Hernandez March 11, 2014 ITU/BDT Regional Economic and Financial Forum of Telecommunications ICTs for Latin America and the Caribbean <http://www.itu.int/en/ITU-D/Regulatory-Market/Documents/CostaRica/Presentations/Session2-1%20Hernandez%20-%20Maximizing%20the%20potential%20of%20USFs%20%282%29.pdf>
- xi** Rethinking Universal Service for a Next Generation Network Environment, prepared by Dr Patrick Xavier, OECD Working Party on Telecommunication and Information Services Policies, 18th April 2006
<http://files.eric.ed.gov/fulltext/ED504163.pdf>
- xii** Universal Service: The trends, opportunities and best practices for universal access to broadband services by Andrew Dymond Managing Director, Intelecon Research & Consultancy Ltd., Vancouver BC, Canada
http://www.inteleconresearch.com/pages/documents/OOCUR_Paper_Dymond_UAStoBroadband.pdf
- xiii** Universal Service: The New Telecommunications Entitlements and Taxes, Gasman, Cat Policy Analysis No. 310, June 25th 1998 <http://www.cato.org/pubs/pas/pa-310.html>
- xiv** Estens Regional Telecommunications Review, Australian Government, 2002
- xv** Glasson Regional Telecommunications Review, Australian Government, 2008
- xvi** Sinclair Regional Telecommunications Review, Australian Government, 2012

-
- xvii** Empirica Research Report, Telecommunications in Australia, 2014.
- xviii** The USO policy debate, Reg Coutts, Exchange 16/32, 20th August 2004
- xix** <http://www.nbnco.com.au/corporate-information/about-nbn-co/corporate-plan/corporate-plan.html>
- xx** Independent cost-benefit analysis of broadband and review of regulation – Volume II – The costs and benefits of high-speed broadband, Vertigan Report, August 2014
- xxi** Telecommunications Universal Service Management Agency (2014), Annual report 2013-14, p46
- xxii** New York Times, November 18th 2014 http://www.nytimes.com/2014/11/18/nyregion/pay-phones-in-new-york-city-will-become-free-wi-fi-hot-spots.html?_r=1
- xxiii** Telecom Asia <http://www.telecomasia.net/content/telecom-nz-turns-payphones-wifi-hotspots>
- xxiv** The Sydney Morning Herald <http://www.smh.com.au/business/telstra-payphones-to-become-wifi-hotspots-20140930-10nvr1.html>
- xxx** Government intervention in the South African broadband market. A country Case Study Prepared for the GSMA by Frontier Economics, September 2014 http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2014/10/Government_intervention_in_the_South_African_broadband_market.pdf
- xxxi** Benefits of network competition and complementary policies to promote mobile broadband coverage, A Report by Frontier Economics prepared for the GSMA, February 2015 <http://www.gsma.com/publicpolicy/wp-content/uploads/2015/02/Benefits-of-network-competition-and-complementary-policies-to-promote-mobile-broadband-coverage-Report.pdf>
- xxxii** GSMA Survey of Universal Service Funds – Key Findings, April 2013 <http://www.gsma.com/publicpolicy/wp-content/uploads/2013/04/GSMA-USF-Key-findings-final.pdf>
- xxxiii** Regional Australia in the digital economy, ACMA Research Snapshot, August 2014