Abstract
The Australian telecommunications regulatory environment has moved since 1997 from the tentative deregulation of a managed fixed line duopoly (Telstra and Optus) to full deregulation, and then since 2010 back to having a state-owned enterprise (NBN Co) as the monopoly wholesale provider of fixed broadband services. At the same time, the more lightly regulated mobile sector has continued to grow. This article provides an overview of the changing legal and regulatory regime for telecommunications and related services in Australia by charting the changes in regulation from 1901 to the present, and by indicating some of the changes that are still evolving. The article is intended to provide a framework for comparison between regulatory regimes in different jurisdictions, and as the basis for further analysis of the sector.

Introduction
This article provides an overview of the evolving legal and regulatory regime for telecommunications and related services in Australia. The approach taken is to address the core issues of the regulatory regime as a complete review would need to be addressed in a longer form (for example, Grant & Howarth, 2011 [5]).

To situate the current telecommunications regulatory environment, the article begins by considering the period leading up to partial deregulation and the managed duopoly that it established. In that context, the section also includes a discussion of spectrum management. The section ends in 1997.
The article then turns to the deregulatory and open competition period from 1997 to 2010. It provides a legislative and regulatory overview of the deregulatory approach before addressing the specific topics of Telstra privatisation, economic regulation, the access regime, carrier powers and immunities and universal service. Each of the discussions is in the context of the regulatory environment from 1997 to 2010.

The next section deals with the current regulatory settings and has the title ?The NBN era?. It provides a context to the National Broadband Network and then moves on to discuss the legislative changes that flowed from policies associated with that network. The section deals with structural separation and changes to the access regime. It then considers Telstra?s response, access regimes and disputation and the sector specific anti-competitive conduct provisions. The section moves on to consider universal service in the NBN era and dispute resolution and consumer protection as it stands at the date of this article. The section ends by providing a snapshot of the telecommunications sector in Australia.

The following section examines three areas of legislative and regulatory change. These relate to universal service, competition law and spectrum management. Finally, there are some brief conclusions.

The managed duopoly

Prior to 1975, Australia did not follow the usual European model of a single Post, Telephone and Telegraph (PTT) administration for both domestic and international services. From 1901 until 1975, the Commonwealth Postmaster General?s Department (PMG) had responsibility for domestic PTT operations together with international postal services, but international telecommunication services were managed separately. Authority was at the Commonwealth level using the powers over ?postal, telegraphic, telephonic, and other like services? provided in in s.51(v) of the Commonwealth of Australia Constitution Act 1901 (Cth). Starting in 1922, radio-based international telegraph and telecommunications services were contracted to Amalgamated Wireless Australasia (AWA). These services were provided by AWA from 1926 until 1946, when the Overseas Telecommunications Commission (OTC) was formed to take responsibility for all international telecommunications services (Nicholls, 2014c [6]).

In 1975 the PMG was split into three bodies. Its postal operations were devolved to Australia Post and its domestic telecommunications operations to the Australian Telecommunications Commission, trading as Telecom Australia. The PMG?s technical regulatory and other supervisory functions were transferred to a new Commonwealth Department of Communications. In 1981 a separate government-owned business Aussat Pty Ltd was created to provide domestic satellite-based services. In 1989, following the creation of an independent industry regulator, the Australian Telecommunications Authority (AUSTEL), the Australian Telecommunications Commission became the Australian Telecommunications Corporation (still trading as Telecom Australia).
The basic approach to fixed line telecommunications deregulation in Australia from 1989 onwards was a two-staged model of an initial “managed duopoly” followed by full deregulation. OTC and Telecom Australia were merged in 1992 to form the Australian and Overseas Telecommunications Corporation, renamed as Telstra Corporation Ltd in 1993. The Commonwealth owned satellite operator Aussat was granted a telecommunications licence and was offered for sale to create a second licensee. The second licence was allocated in a merit-based process (usually referred to as a “beauty contest”) and the licence was awarded to Optus for a fee of $800 million. The second carrier licence included an allocation of spectrum at 900 MHz for GSM Services and the right to resell Telstra’s analogue mobile services. A third mobile licence was issued to Vodafone in 1993, which was used for GSM services.

The Radiocommunications Act 1992 (Cth) (the Radcomms Act) created three forms of spectrum use licence and these are relevant to the telecommunications regulatory environment. The traditional licence is known as an apparatus licence. It provides a right to an individual named entity to use technically specified equipment (apparatus) at specified locations. Apparatus licences were expected to have a term of one year with no expectation of renewal. The specifications include antenna type and height. A second licence type known as a spectrum licence defines boundary conditions in geography (licence area), frequency (adjacent channel interference) and time (the term, usually 15 years). Spectrum licences were expected to be sold using a price-based allocation, usually by an auction (Cave & Webb, 2015 [7]; Salant, 2014 [8]). The final form of licence is a variant of an apparatus licence, known as a class licence. A class licence defines the technical parameters of apparatus that can be used without an individual licence. Examples include garage door openers, cordless phones and WiFi equipment.

Between 1992 and 1997, there were three regulators in the telecommunications and broadcasting space. AUSTEL was responsible for the technical regulation of telecommunications and had taken over this function from Telecom Australia. The Spectrum Management Authority (SMA) was responsible for spectrum matters and the Australian Broadcasting Authority for broadcasting transmission and content regulation. Telstra remained a state-owned enterprise throughout this period.


Deregulation

As part of the deregulatory and open competition phase, the regulation of telecommunications changed. The SMA and AUSTEL merged to form the Australian Communications Authority (ACA), the spectrum and telecommunications technical standards regulator. In 2002, the ACA and the ABA merged to form the Australian Communications and Media Authority (ACMA) (Nicholls, 2014a). The ACMA is an independent regulator that must respond to a Ministerial Direction if required to under the law. The independent competition regulator, the Australian Competition and Consumer Commission (ACCC) was tasked with delivering workable competition in an environment with many “natural monopolies” or bottlenecks. In 1997, telecommunications sector specific competition law was introduced as Part XIB and Part XIC of the then Trade Practices Act 1974 (Cth). That legislation was replaced in 2010 by the Competition and Consumer Act 2010 (Cth) (CCA).
The Telco Act was designed to provide a “light touch” regulatory environment. It did this by creating greater obligations for infrastructure providers than for service providers with little infrastructure. Anyone who provides a service for the carriage of communications to the public falls into a class known as carriage service providers. These carriage service providers fall into a class and are bound by the “service provider rules” associated with that class. The first of these rules is compliance with the Telco Act. In the initial phase deregulation, many entrants were simple resellers of Telstra services. As a result, they were carriage service providers. Carriage service providers that used their own infrastructure of any significance (defined in terms of length of fibre or operations of a cellular network) were determined to be carriers. Carriers need to be individually licensed and the regulator holds a register of carriers. There is no equivalent register of carriage service providers as joining such a register is not compulsory.

The Telco Act provides for a high degree of self-regulation for the sector. It has a policy objective in section 4 to promote “the greatest practicable use of industry self-regulation”. Essentially, the industry can set its own codes through Communications Alliance and these codes apply to those who agree to be bound. The regulator can make binding codes, or incorporate codes into service provider rules, if the self-regulatory regime does not deliver outcomes which are aligned with policy.

The deregulatory framework provided what was expected to be a relatively clear delineation of roles in a vibrantly competitive sector. Telstra, the state-owned enterprise, would be privatised and would compete on a relatively level playing field. Carriers and carriage service providers would be able to seek access to bottleneck facilities and services under economic regulation provided by the ACCC. Technical regulation would be primarily driven by the industry, but with intervention possible by the technical regulator, if required. The Department of Communications and the Arts, under a variety of titles, provides policy direction in the telecommunications sector.

The balance of this section describes the implementation of this framework and the following section, “The NBN Era” describes the changes that create the existing regime.

Telstra privatisation

Until 1997, Telstra remained a 100% state-owned enterprise. The company was part privatised in three tranches. In 1997, one third of Telstra was sold, a further 16% in 1999 and 31% in 2006. The balance of 17% was held by the Future Fund (Australia’s sovereign wealth fund to finance public servant superannuation). The Future Fund has sold down its stake in Telstra and ceased to be a major shareholder in 2011 and was “market weight” in the same year (Nicholls, 2014c [6]).

Economic regulation

The concept of “long-term interest of end-users” (LTIE) is one which is core to the regulation of competition issues in telecommunications in Australia. The objectives of the LTIE are set out in section 152AB(2) of the CCA. Broadly, the objectives of the LTIE are divided into three elements. The first is the promotion of competition. The second is achieving any-to-any connectivity in relation to carriage services that involve communication between end-users. The third is encouraging economically efficient use of, and economically efficient investment in, infrastructure by which telecommunications services are supplied and any other infrastructure by which telecommunications services are, or are likely to become, capable of being supplied.
The early thinking was to consider the extent to which an access network could be regarded as a natural monopoly. In general the fixed sector has an access network which has the characteristics of a natural monopoly (Sharkey, 1983 [9]). Definitions of natural monopoly are not pejorative and are often associated with the concept that a monopoly can, in some circumstances, be a socially desirable outcome (Gasmi et al, 2002 [10]).

In applying these objectives, the ACCC has historically (ACCC, 1999) [11] considered that long-term has an economic meaning. That is, a balancing of the flow of costs and benefits to end-users over time in relation to the criteria. The ACCC has used a standard approach of regarding competition as the process of rivalry between firms, where each market participant is constrained in its price and output decisions by the activity of other market participants. The benefits of competition to end-users are lower prices, better quality and a better range of services over time. In turn, any-to-any connectivity encompasses the objective of end-users on different networks being able to communicate with each other, that is, not constraining consumers to the services of a single network provider. The approach to the LTIE analysis assumes that economic efficiency has the three components of productive efficiency, allocative efficiency and dynamic efficiency.

Clearly, these objectives are interrelated. In many cases, the LTIE may be promoted through the achievement of two or all three of its elements simultaneously. In other cases, there may be some trade-off between the different elements, and this creates a need to weigh up the different effects. For example, it may be in the LTIE to receive a benefit for even a short period if its effect is not outweighed by any longer-term cost.

The access regime

There are two meanings for the term access in telecommunications policy. The first is the ability of end users to acquire services, and the second is the ability for a competing service provider to have the use of bottleneck network services or infrastructure owned by another party. Competition policy and associated access regimes deal only with the second meaning, which is used in this section of the article.

There is no general right of access to telecommunications services provided in the CCA. There is a right of access to declared services and access must be provided on non-discriminatory terms and conditions. These are known as the Standard Access Obligations (under Division 3 Part XIC of the CCA). The ACCC is empowered to declare bottleneck services if declaration is in the LTIE. Before the NBN era, a declared service was subject to a negotiate/arbitrate framework. The access seeker was expected to negotiate price and non-price terms and conditions of access. If the negotiations failed, then an arbitrator would be determined to set those conditions. The arbitrator of last resort was the ACCC and all access arbitrations were heard by the ACCC. There were two major problems with the process. The first was that the access provider benefited by delay in the process. The second was that the main objective of access seekers was price discovery. As the results of arbitrations were not usually public, the system was initially a poor price discovery mechanism. In later years, the ACCC provided media releases in respect of determined pricing for some services.

Carrier powers and immunities

Under Schedule 3 of the Telco Act, carriers have a right to enter land to inspect the land and install and maintain facilities and infrastructure. In doing this, they also need to meet the requirements of the Telecommunications Code of Practice 1997.
Carriers are exempt from some state and territory laws, including planning laws in respect of low-impact facilities. Otherwise, and as a practical matter, they must comply with state and territory laws and planning regulations. Low-impact facilities include some radiocommunications facilities (panel antennas), underground and above-ground housing, underground and some aerial cables, public payphones, emergency and co-located facilities. The facilities are designated by the Minister for Communications and set out in the *Telecommunications (Low-Impact Facilities) Determination 1997*.

The Telecommunications Code of Practice sets out the obligations on carriers. They must give 10 days’ written notice before they start any work and pay compensation for financial loss or damage they do. Carriers, and their contractors, must comply with good engineering practice and consider noise limits, the environment, and obstruction of essential services when installing or maintaining facilities. Compliance with the Telecommunications Code of Practice is a licence condition.

**Universal service**

The universal service regime was established under the *Telecommunications (Consumer Protection and Service Standards) Act 1999* (Cth). It provided a mechanism to ensure universal access to a voice telephony service defined as a standard telecommunications service. It also provided payphone access. Before the NBN era, this service was provided by the universal service provider (Telstra). The cost of the universal service was determined by the Minister or the regulator and that cost was shared between all licensed carriers (including Telstra) in proportion to their revenue.

**The NBN era**

The original National Broadband Network (NBN) was initially conceived by the Rudd Labor Government as a Commonwealth Government subsidy of up to $4.7 billion to the private sector to construct a fibre to the node network to provide broadband services to 98% of Australian homes and businesses. At the time of the policy decisions, it was thought that 12 Mbps was broadband and that the actual network cost would be about $12 billion (*Scales, 2014 [12]*) Although there were six bidders for the project, the review committee determined that Telstra’s 12 page bid was not compliant. In January 2009, the review committee found that none of the other bidders would provide a solution that represented ‘value for money’.

In April 2009, the Commonwealth Government announced that it would establish a new state owned enterprise called NBN Co. This would be charged with the construction of a fibre to the premises (FTTP) network to 90% of Australian homes and businesses, with the remaining 10% receiving services using terrestrial wireless (7%) or satellite (3%). The mix between FTTP, wireless and satellite was changed in the Commonwealth Government’s Statement of Expectations that was provided to NBN Co in December 2010 to 93% FTTP, 4% terrestrial wireless and 3% satellite. It was anticipated that the enhanced NBN network would cost up to $43 billion (*Swan, 2009 [13]*)

NBN Co was directed by the shareholder Ministers (Communications and Finance) to provide services at a uniform wholesale price throughout Australia.

After the election of the Abbott Coalition Government in 2013, the technology choices were changed. The current expectation of technology mix from NBN Co is about 20% FTTP, about 8% wireless and satellite, about 22% hybrid/fibre coaxial (HFC) cable and the balance as fibre to the node, fibre to the basement or fibre to the distribution point (*NBN Co, 2016 [14]*).
Regardless of technology, the NBN is a Layer 2 Ethernet access network which in many locations is provided as a replacement for existing fixed infrastructure with an assumption of monopoly characteristics. The legislative framework provided exemptions which would allow extensions of existing fibre networks of up to one kilometre and this ?grandfather? provision has been used by TPG to deliver fibre to the basement services in metropolitan areas.

**Legislative changes in the context of the NBN**

Since 2009 there have been two significant changes made to legislation to reflect the NBN policy.

The first was to the Telco Act in 2010. This created a choice for Telstra. It could either voluntarily provide a structural separation undertaking in a form acceptable to the ACCC, or be subject to certain limitations to its business operations. The separation undertaking would require Telstra to cease using its own fixed access network to deliver retail services but would acquire services on a wholesale basis from NBN Co. The business limitations were that Telstra would be unable to acquire spectrum licences in the 700 MHz and the 2.5 GHz band, which would be expected to be used for Long Term Evolution (LTE) mobile services. In addition, Telstra could be prevented from continuing its 50% ownership of the pay television business Foxtel and its ownership of its HFC network. This policy might seem to be an unusual regulatory approach. A more usual form would be to permit a functional separation and to enforce a structural separation if the functional separation did not achieve the intended effects. The policy reflected in the legislation was to avoid a regulatory taking. That is, the acquisition of property other than on just terms under section 51(xxxi) of the Constitution. Telstra was given the option to undertake (on a voluntary basis) to enter in to a structural separation undertaking. If it did not exercise that option, then the Government would functionally separate it (not a regulatory taking) with significant restrictions.

The second change was to the CCA (Nicholls, 2014b[15]). The ACCC can still declare services. However, there are now four potential access arrangements with a defined order of precedence. The primary access to a declared service is by an access agreement. This is a written agreement, capable of specific performance between the access seeker and the access provider for the supply of a declared service. Access agreements have to be filed with the ACCC within 30 days of execution but the ACCC does not publish these or keep a public register of the filings. The second form of arrangement is a special access undertaking (SAU). An SAU is provided under Div 5 of Pt XIC of the CCA and is an undertaking that specifies terms and conditions upon which an access provider proposes to supply a carriage service to any access seeker. There is a prohibition on the ACCC declaring a service which is the subject of an SAU and it is consequently a ?safe harbour? regime. The ACCC must assess SAUs in accordance with s 152CBD of the CCA and only accept or reject the undertaking. A binding rule of conduct (BROC) made by the ACCC under s 152BD is the third form of access arrangement. A BROC is temporary (lasting less than a year) and would be used by the ACCC to correct an unintended consequence of an access determination. It does not require a public inquiry before it is made. The fourth form of access arrangement is a safety net. This is provided through an access determination by the ACCC. An access determination sets a minimal set of price and non-price conditions for the supply of a declared service by an access seeker to an access provider.

**The role of Telstra**
In 2011, Telstra entered into definitive agreements with NBN Co and the Government to lease and sell infrastructure required to construct the National Broadband Network. The net present value of the agreements to Telstra was $9 billion in 2011 terms (NBN Co, 2011 [16]). The total to Telstra was boosted to $11 billion under the universal service arrangements set out below. This amount was not clearly set out as an element of the $43 billion originally announced (Swan, 2009). In 2012, Telstra gave a Structural Separation Undertaking (SSU) to the Australian Competition and Consumer Commission (ACCC) which committed Telstra to become a wholesale customer of NBN Co and not to use its own local loop infrastructure to provide both wholesale and retail services. The SSU has extensive migration provisions and there is a Migration Plan, which was also accepted by the ACCC. The definitive agreements have been amended to reflect the changes in technology mix over time while retaining the same net present value for Telstra (Telstra, 2014 [17]).

Access regimes and disputes

The negotiate/arbitrate element of the initial access regime was problematic as it did not provide efficient price discovery. As part of the SSU, Telstra agreed to provide rate card prices for declared services (Telstra, 2016 [18]). The final access determinations for declared services provide a large amount of pricing information, but the rate card generally provides the prices associated with the declared service and associated commercial services. All access seekers understand the highest price that they, and their competitors, will pay and a dispute is no longer necessary for price discovery.

Anti-competitive conduct

As mentioned above, the current CCA includes sector-specific competition law in Part XIB. This Part prohibits anti-competitive conduct by a carrier or carriage service provider. Relevantly, the CCA provides, at section 151AJ, that a carrier or carriage service provider engages in anti-competitive conduct if the carrier or carriage service provider has a substantial degree of power in a telecommunications market and takes advantage of that power in that or any other market with the effect, or likely effect, of substantially lessening competition in that or any other telecommunications market. That is, breach of the law is determined by an "effects test".

The important distinction between anti-competitive conduct in the telecommunications sector and anti-competitive conduct under general competition law is that section 46 of the CCA requires a "purpose test" rather than an effects test.

Part XIB sets up a scheme by which the ACCC issues one of two forms of "competition notice" if it considers that there has been anti-competitive conduct. The competition notice regime has a reverse onus of proof, in that the carrier or carriage service provider that receives the notice must show that it has not engaged in the conduct. As a practical matter, no competition notices have been issued by the ACCC since 2006.

Universal service in the NBN era

As part of the definitive agreements between Telstra, NBN Co and the Government, Telstra was awarded a 20-year contract to provide universal voice and payphone services. The Telstra Universal Service Obligation Performance Agreement (Department of Communications and the Arts, 2016c [19]) sets out the scope of services to be performed by Telstra in delivering standard telephone services and payphone services.
This has created an unusual environment where Telstra is the retail telecommunications provider of last resort and NBN Co is the wholesale telecommunications provider of last resort. The approach to funding the universal service obligation remains the same. There is also a policy discrepancy. NBN Co is required to provide universal wholesale access to a broadband service that could carry voice over Internet Protocol and Telstra is required to provide universal retail access to fixed voice service. The shortcomings of the current approach to universal service have been discussed in this journal (Coutts, 2015 [20]; de Ridder, 2015 [21]; Gregory 2015 [22]; Raiche, 2015 [23]).

In December 2016, the Government announced that it would seek to impose a charge on all fixed line broadband services to create an explicit price signal for the cost of providing broadband on a universal wholesale price basis. This approach adopts a recommendation of the Vertigan Review (Vertigan, 2014 [24]). The effect of this approach would be a charge of about $7 per broadband service (mainly payable by NBN Co and TPG). The exposure draft of the legislation, provides that NBN Co will become a Statutory Infrastructure Provider (SIP), which will require it to supply wholesale services upon request from retail service providers. When the NBN is rolled out, NBN Co will be the universal SIP.

Dispute resolution and consumer protection

The Telecommunications Industry Ombudsman (TIO) is an independent alternative dispute resolution body for small business and residential consumers in Australia who have unresolved complaints about their telephone or internet services. Disputes are funded by the carrier, rather than the customer (TIO, 2016 [25]). Customers can complain to the TIO after they have attempted to resolve the matter with the carriage service provider (Li, 2016 [26]).

Under the SSU, there is an alternative dispute resolution body for wholesale customers of Telstra who are of the view that Telstra has not provided equivalence of outcomes under the SSU or the Migration plan. This is the Independent Telecommunications Adjudicator. The Independent Telecommunications Adjudicator can only resolve non-price disputes in relation to certain fixed line declared services. These are services which are listed on the Telstra rate card, referred to above. The Independent Telecommunications Adjudicator reports that there have been no such disputes in the financial years from 2013 to 2016 (Independent Telecommunications Adjudicator, 2016 [27]). It is reasonable to suppose that simplicity of price discovery has contributed to this outcome.

The Telecommunications Consumer Protections Code is an industry code developed by Communications Alliance and registered with the ACMA. The code sets minimum standards for telecommunications providers in their interactions with customers. This includes standards for advertising services, contracts, billing, sales techniques and redress mechanisms. The TIO can investigate breaches of the code.

The Australian Communications Consumer Action Network (ACCAN) is a Commonwealth Government funded but independent body that represents Australian consumers on telecommunications issues. ACCAN works with industry and Government to promote the availability, accessibility and affordability of telecommunications services.

The telecommunications sector
In November 2016, the ACMA released its annual Communications Report for 2015/2016 (ACMA, 2016). This provides a useful basis for describing the telecommunications sector in Australia. One of the key features is the extent to which service number are dominated by mobile services. As set out in Table 1, the number of mobile internet services is 28 million and growing at 3.7% per year. There are seven million fixed line internet service subscribers.

**Table 1: Number of services**

<table>
<thead>
<tr>
<th>Service</th>
<th>June 2016 (million)</th>
<th>2015-2016 change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile services (voice and data)</td>
<td>32.59</td>
<td>2.6%</td>
</tr>
<tr>
<td>Mobile handset internet subscribers</td>
<td>21.97</td>
<td>4.6%</td>
</tr>
<tr>
<td>Mobile wireless broadband</td>
<td>6.04</td>
<td>0.6%</td>
</tr>
<tr>
<td>Total mobile internet services?</td>
<td>28.01</td>
<td>3.7%</td>
</tr>
<tr>
<td>Total internet service subscribers</td>
<td>35.26</td>
<td>4.5%</td>
</tr>
<tr>
<td>Fixed line telephone services</td>
<td>8.18</td>
<td>-3.8%</td>
</tr>
</tbody>
</table>

This is in the context of a decline in users of fixed line telephone users as set out in Table 2. However, it is important to note that the increasing number of ‘cord cutters’ may still have a fixed line service to deliver broadband. Telstra is obliged to provide unbundled network elements that are declared services. However, it does not offer an explicit ‘naked DSL’ service. That is, all Telstra retail offerings include voice services and this may have an influence on the statistics presented.

**Table 2: Number of users**

<table>
<thead>
<tr>
<th>Service</th>
<th>June 2016 (million)</th>
<th>2015-2016 change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed-line telephone users</td>
<td>12.56</td>
<td>-4.0%</td>
</tr>
<tr>
<td>Smartphone users</td>
<td>13.75</td>
<td>2.5%</td>
</tr>
<tr>
<td>Mobile phone users without a home phone</td>
<td>5.78</td>
<td>7.6%</td>
</tr>
</tbody>
</table>

Telstra has a significant portion of the number of mobile services on each of the three mobile networks as shown in Table 3, which includes mobile virtual network operators and resellers.

**Table 3: Mobile share**

<table>
<thead>
<tr>
<th>Carrier</th>
<th>June 2016 services (million)</th>
<th>June 2016 (share)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telstra</td>
<td>17.76</td>
<td>54.5%</td>
</tr>
<tr>
<td>Optus</td>
<td>9.34</td>
<td>28.6%</td>
</tr>
<tr>
<td>Vodafone Hutchison Australia</td>
<td>5.49</td>
<td>16.9%</td>
</tr>
</tbody>
</table>

The ACMA also reported that 1,098,634 premises had activated an NBN service, an increase of 126 per cent since June 2015. This includes 942,356 premises connected to the NBN fixed network and 156,278 premises connected to fixed-wireless or satellite services.
Areas of legislative and regulatory change

Changes to universal service

In April 2016, the Treasury set out terms of reference for the Productivity Commission to review the universal service regime. These included:

*The primary policy question to be addressed in this inquiry is to what extent, in the evolving Australian telecommunications market, Government policies may be required to support universal access to a minimum level of retail telecommunications services. This will involve a consideration of the nature, scope and objectives of a universal service obligation, whether the retail market for relevant services will deliver appropriate outcomes for consumers without Government intervention and, if not, what options should be considered by Government to deliver universal services and the costs and benefits of these interventions.* (Productivity Commission, 2016 [28])

The Productivity Commission delivered an issues paper in June 2016 (Productivity Commission, 2016 [28]) and is expected to provide its final report in April 2017.

In this context, ACCAN has joined a coalition of advocacy groups called the Regional, Rural and Remote Communications Coalition (ACCAN, 2016 [29]). Other members are the National Farmers? Federation (NFF), the Country Women?s Association of NSW, the Isolated Children?s Parents? Association and AgForce Queensland.

This group is advocating for five outcomes as measures of equitable connectivity for regional and remote consumers:

1. A universal service obligation that is technology neutral and provides access to both voice and data;
2. Customer service guarantees and reliability measures to underpin the provision of voice and data services and deliver more accountability from providers and NBN Co;
3. Long term public funding for open access mobile network expansion in rural and regional Australia;
4. Fair and equitable access to Sky Muster satellite services for those with a genuine need for the service, and access which reflects the residential, educational and business needs of rural and regional Australia; and
5. Fully resourced capacity building programs that build digital ability, and provide learning and effective problem solving support for regional, rural and remote businesses and consumers.

Changes proposed in competition law

On 1 December 2016, amendments to the CCA were introduced into the parliament as the *Competition and Consumer Amendment (Misuse of Market Power) Bill 2016* These included amendments to section 46 of the CCA which introduce an effects test. Following a short consultation by the Department of Communications and the Arts (Department of Communications and the Arts, 2016a [30]), most of the sector specific competition elements of Part XIB will be removed if the amendments are passed (Gregory, 2016 [31]). These amendments flow from the recommendations of the Harper review of competition law and policy (Harper et al, 2015 [32]). It is likely that the section 46 amendments will be opposed by the Labor Opposition, but accepted by the cross bench of the Senate.

Changes proposed in spectrum management
Australia was one of the first countries to use spectrum auctions and its spectrum licences, based on boundary conditions rather than being determined by technology, were leading concepts when the relevant legislation was put in place in 1992. However, as the issues raised by these case studies illustrate, there are problems with the complexity of processes and the associated uncertainty. As a result, the Commonwealth Government conducted a spectrum review that reported in May 2015 and that report has been accepted (Department of Communications and the Arts, 2015[33]). There has also been consultation on the drafting instructions for the proposed legislation (Department of Communications and the Arts, 2016b [34]).

There are three proposed policy changes:

The first is a **reduction in the complexity of processes**. The number of legislative instruments required to change spectrum use or to conduct an auction would be reduced significantly.

The second is the **introduction of a unified licensing regime**. The terms of the licence, including the processes that will occur at the end of the term of the licence, will be included on the face of that licence. This means an environment where licence charges will reflect the expectations of renewal. The single licensing arrangement is also designed to facilitate spectrum sharing on an underlay or overlay basis. It will also permit flexibility if technologies emerge which facilitate sharing.

The third is a **process for valuing spectrum**. Ultimately this process will assist in ensuring that the amounts that are budgeted for sales of spectrum are realistic and do not necessarily drive reserve prices.

**Conclusions**

This article has provided an introduction to the telecommunications legislative and regulatory environment in Australia. It has demonstrated the evolution from a managed duopoly emerging from an atypical PTT environment through a deregulatory period to the NBN era, which is characterised by a state-owned enterprise operating a monopoly fixed line network and a vibrantly competitive mobile sector.

**References**

**Legislation and subordinate legislation**


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