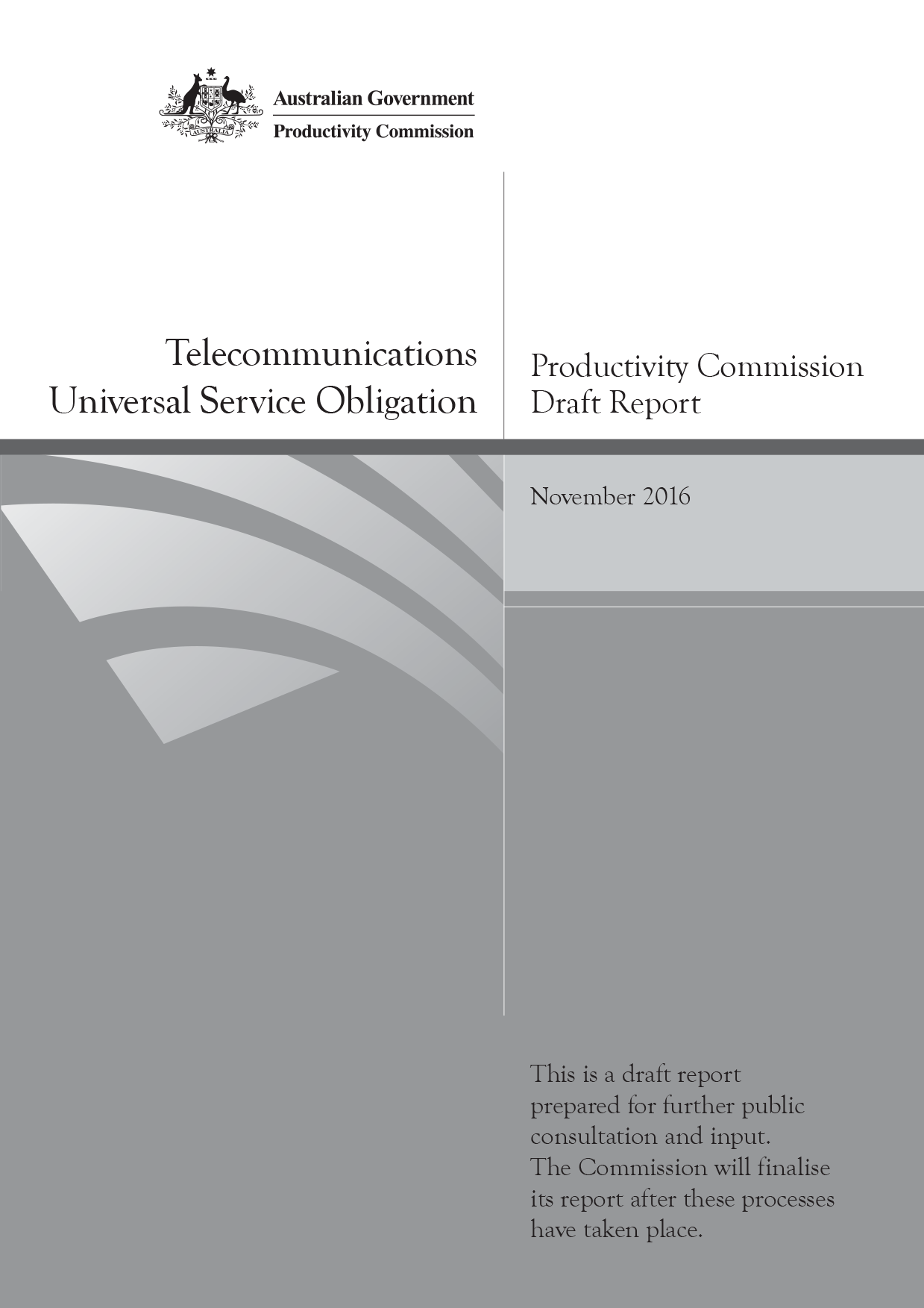
# Telecommunications Universal Service Obligation

Productivity Commission Draft Report 

Commonwealth of Australia 2016



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| The Productivity Commission is the Australian Government’s independent research and advisory body on a range of economic, social and environmental issues affecting the welfare of Australians. Its role, expressed most simply, is to help governments make better policies, in the long term interest of the Australian community.  The Commission’s independence is underpinned by an Act of Parliament. Its processes and outputs are open to public scrutiny and are driven by concern for the wellbeing of the community as a whole.  Further information on the Productivity Commission can be obtained from the Commission’s website ([www.pc.gov.au](http://www.pc.gov.au/)). |
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# Opportunity for further comment

You are invited to examine this draft inquiry report and comment on it by written submission to the Productivity Commission, preferably in electronic format, by **20 January 2017** and/or by attending a public hearing

The final report will be prepared after further submissions have been received and public hearings have been held and will be forwarded to the Australian Government by 28 April 2017.

### Public hearings

The Commission will be holding public hearings in Cairns, Sydney, Dubbo, Port Augusta, Launceston and Melbourne in late January and early February 2017. Details regarding dates and venues will be made available on the Commission’s website in due course.

### Commissioner

For the purposes of this inquiry the Commissioner is:

|  |
| --- |
| Paul Lindwall |

# Terms of reference

I, Scott Morrison, Treasurer, pursuant to Parts 2 and 3 of the *Productivity Commission Act 1998*, hereby request that the Productivity Commission undertake an inquiry into the future direction of a universal service obligation in an evolving telecommunications market.

## Background

Historically the standard voice telephone service has provided the basis of a ubiquitous telecommunications service which has been a fundamental part of Australian society. To ensure the benefits of this basic service are as widely available as possible, the regulated standard telephone service and payphones Universal Service Obligation (USO) provides for access to a standard telephone service and payphone services to consumers, where provision of those services might otherwise not be commercially viable. The USO is supported by a combination of ongoing funding from the Australian Government and an annual levy on carriers.

The Australian telecommunications sector has undergone significant changes over the last two decades, in market structure and technology, and will continue to evolve. There has been rapid and continuing technological development and innovation across the industry, with significant expansion in the availability, use and sophistication of mobile services, and ever increasing demand for broadband data services (including Voice Over Internet Protocol services). Demand for standard (fixed line) voice services and payphones has reduced and continues to decline.

The Australian Government is rolling out the National Broadband Network (NBN) which will use a range of technologies to provide a capped price wholesale-only broadband platform to all premises. NBN Co will deliver fast broadband to Australian premises as the infrastructure 'provider of last resort'. The availability of universal broadband will provide a platform for increased competition in the development of retail products and services for consumers.

In the context of these and other changes, the current USO arrangements may not be effective.

## Scope of the inquiry

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.

In undertaking this inquiry, should the Commission recommend the retention of Government interventions in the market, it should make recommendations on:

* what objectives are appropriate for a universal service obligation arrangement or its equivalent
* what would be the scope of the services needed to be provided to achieve those objectives
* whether particular sections of the Australian community have differing needs to which additional Government intervention should be directed e.g. low income, rural and regional
* who should bear cost or regulatory burdens from those interventions, if any
* the optimal funding model(s)
* transitional arrangements from the current USO model.

The Commission should also have regard to:

* the need for a durable framework that is flexible enough to accommodate technological changes
* the role of, and impact on competition in relevant markets
* contractual commitments that the Government has for the provision of the existing USO
* the significant investments already made by Government, including in the NBN rollout
* the current telecommunications regulatory framework and the Government's response to the 2014 Vertigan NBN Market and Regulation Report
* additional policy reviews being undertaken by Government on a broader range of telecommunications consumer protections
* relevant approaches adopted in other countries, particularly those with similar characteristics to Australia
* the report of the 2015 Regional Telecommunications Review and the Government's response to that report.

## Process

The Commission is to undertake an appropriate public consultation process, including holding hearings, inviting public submissions from industry, consumer groups and the broader community and releasing a draft report to the public.

The final Report should be provided to the Government within 12 months of the receipt of these Terms of Reference.

**Scott Morrison**

**Treasurer**

[Received 28 April 2016]

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# Abbreviations

|  |  |
| --- | --- |
| ABS | Australian Bureau of Statistics |
| ACCAN | Australian Communications Consumer Action Network |
| ACCC | Australian Competition and Consumer Commission |
| ACE | Australian Communication Exchange |
| ACMA | Australian Communications and Media Authority |
| ADSL | Asymmetric digital subscriber line |
| ANAO | Australian National Audit Office |
| AVC | Access Virtual Circuit |
| BCR | Bureau of Communications Research |
| CCO | Copper Continuity Obligation |
| CSG | Customer Service Guarantee |
| CVC | Connectivity Virtual Circuit |
| DoCA | Department of Communications and the Arts |
| DSL | Digital subscriber line |
| DSS | Department of Social Services |
| EU | European Union |
| FTTB | Fibre to the basement |
| FTTdp | Fibre to the distribution point |
| FTTN | Fibre to the node |
| FTTP | Fibre to the premises |
| GB | Gigabyte |
| Gbps | Gigabits per second |
| GST | Goods and services tax |
| HFC | Hybrid fibre coaxial |
| HILDA | Household Income and Labour Dynamics in Australia |
| IRCA | Indigenous Remote Communications Association |
| ISS | Interim Satellite Service |
| ITU | International Telecommunication Union |
| kbps | Kilobits per second |
| LIMAC | Low Income Measures Assessment Committee |
| Mbps | Megabits per second |
| MHz | Megahertz |
| NBN | National Broadband Network |
| nbn | NBN Co Limited |
| NNI | Network to Network Interface |
| NSS | NBN Co Limited Satellite Support Scheme |
| OECD | Organisation for Economic Cooperation and Development |
| OTT | Over-the-Top |
| PC | Productivity Commission |
| POI | Point of interconnection |
| RFDS | Royal Flying Doctor Service |
| RSP | Retail service provider |
| RTIRC | Regional Telecommunications Independent Review Committee |
| SIP | Statutory Infrastructure Provider |
| SMS | Short Message Service |
| STEM | Science, Technology, Engineering and Mathematics |
| TCPSS Act | *Telecommunications (Consumer Protection and Service Standards) Act 1999* (Cth) |
| TIL | Telecommunications Industry Levy |
| TIO | Telecommunications Industry Ombudsman |
| TTY | Teletypewriter |
| TUSMA | Telecommunications Universal Service Management Agency |
| TUSO | Telecommunications universal service obligation |
| TUSOP Agreement | Telstra USO Performance Agreement |
| USO | Universal service obligation |
| VoIP | Voice over internet protocol |
| WBA | Wholesale Broadband Agreement |

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# Glossary

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| 1G | First generation mobile technology. Uses analogue signals to provide voice services over wireless technology. |
| 2G | Second generation mobile technology. Uses digital signals to provide voice services (and data with low transmission rates) over wireless technology. |
| 3G | Third generation mobile technology. Uses broadband to support both a voice channel and internet protocol-based video and data services. |
| 4G | Fourth generation mobile technology. Enhanced broadband to support internet protocol-based voice, video and data services. Also known as Long Term Evolution (LTE). |
| 5G | Fifth generation mobile technology. There is currently no agreed definition or standard for 5G technology. |
| Access network | The ‘last mile’ of a telecommunications network which connects end users to that network. |
| Access seeker | A generic term that refers to retail service providers or wholesale service providers that are customers of a third party network. |
| Access Virtual Circuit (AVC) charge | Monthly charge levied on a per‑end user basis to access the NBN. |
| Asymmetric Digital Subscriber Line (ADSL) | A compression technology that supports high‑speed digital services over conventional copper telephone lines. It has significantly greater capacity in one direction than the other. Upload and download speeds decline as the length of the copper line increases. |
| Backhaul | See ‘transmission network’. |
| Bandwidth | A measurement of how much data can flow through a specific connection at one time. Bandwidth can also refer to the frequency ranges used to transmit a signal. |
| Base station | A telecommunications station installed at a fixed location and used to transmit wireless signals from mobile devices or fixed wireless broadband services. |
| Bits per second (bps) | Basic unit of measurement for serial data transmission capacity. |

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| Broadband | High-speed internet access that is always on and transmits data faster than dial-up access. Broadband is implemented through a range of technologies such as fibre-optic cable, DSL, HFC, mobile wireless, fixed wireless and satellite. |
| Carriage service provider (CSP) | A party which uses its own or someone else’s network facilities to supply communications services to the public. |
| Carrier | An owner of a telecommunications network unit that is licensed by the ACMA to supply carriage services to the public. |
| Circuit switching | A temporary direct connection of two or more channels between two or more points in order to provide exclusive use of an open channel. A discrete circuit path is set up between the incoming and outgoing lines. |
| Connectivity Virtual Circuit (CVC) charge | An aggregate bandwidth consumption charge to transmit over NBN infrastructure a specified quantity of data per second over a monthly period. |
| Copper Continuity Obligation | An obligation under the TUSOP Agreement which requires Telstra to operate and maintain its existing copper network in areas outside of nbn’s fixed‑line footprint for the provision of fixed voice services. |
| Copper wire | A legacy transmission medium used to connect a telephone or other apparatus to the local exchange. Copper wires have relatively low bandwidth and so have limited ability to carry broadband services unless combined with an enabling technology such as ADSL. |
| Core network | Provides services to the customers who are interconnected by the access and transmission networks. |
| Coverage | The geographic area or population base over which a mobile network can be accessed to a given standard. |
| Customer Service Guarantee (CSG) | A standard that aims to protect residential and small business customers from a poor telephone service. It sets out performance requirements for carriage service providers for connections, fault repair and appointment keeping for the standard telephone service, and provides for financial compensation when these are not met. |
| Dial-up internet | A service in which subscribers connect to the internet via a modem and dial-up software using the facilities of the copper access network. |
| Digital subscriber line (DSL) | A generic term for digital subscriber line technologies which enable broadband services over copper wires. |
| Digital Subscriber Line Access Multiplexer (DSLAM) | A network device, usually located in telephone exchanges, that connects multiple digital subscriber line interfaces to a high‑speed digital communications channel. |
| Exchange | A building which houses the equipment required to deliver telephone and broadband services to premises in an Exchange Service Area. |
| Exchange Service Area | The geographic area covered by a Telstra telephone exchange. |
| Fibre | A fibre‑optic tube containing tiny strands of glass that transmit data in the form of light. Fibre enables data transmission at higher rates than copper. |
| Fibre to the basement (FTTB) | A network where fibre is deployed from the point of interconnection to the boundary of the building, such as the basement of a multi‑dwelling unit. |
| Fibre to the distribution point (FTTdp) | A network where fibre is deployed from the point of interconnection to the individual junction box in the street outside each property. A short run of copper then carries the signal to the premises. |
| Fibre to the node (FTTN) | A network where fibre is deployed from the point of interconnection to street cabinets (nodes) which are close to end users. Copper lines then carry the signal from the node to the premises. |
| Fibre to the premises (FTTP) | A network where fibre is deployed from the point of interconnection to the individual premises. It is also called Fibre to the Home (FTTH). |
| Fibre to the x (FTTx) | A generic term for any type of fibre network that is used for last mile telecommunications to end users. |
| Fixed wireless | A network which uses a radio access network to connect to a fixed antenna. |
| Geostationary satellite | A satellite that can be used for telecommunications that sits high above the Earth’s surface aligned with the equator. It appears stationary as it orbits the Earth at the same speed as the Earth rotates. |
| GHz (gigahertz) | One billion Hertz. |
| Gigabits per second (Gbps) | A rate of data transfer. 1 Gbps = 1000 Mbps. |
| Gigabytes (GB) | One billion bytes of information. |

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| Hotspot | A location where people can access the internet using WiFi-enabled devices. Access may be provided free or for a fee. |
| Hybrid Fibre Coaxial (HFC) network | Consists of fibre‑optic cable supplemented by coaxial cable for the connection to the customers’ premises. |
| Internet of Things (IoT) | Encompasses the appliances and devices (and other objects) that communicate over the internet with little or no human involvement. |
| Internet Protocol | The method by which data packets are exchanged over the internet. |
| Kilobits per second (kbps) | A rate of data transfer. 1 kbps = 1000 bps. |
| Latency | Communication time lag. The amount of time a signal takes to travel from one point to another. |
| Low Earth Orbit (LEO) satellite | A satellite system used in telecommunications that is closer to the Earth’s surface than a geostationary satellite and can transmit data with lower latency. Multiple LEO satellites are often used to form a constellation. |
| Megabits per second (Mbps) | A rate of data transfer. 1 Mbps = 1000 kbps. |
| Megabytes (MB) | One million bytes of information. |
| MHz (megahertz) | One million Hertz. |
| Microwave | A high frequency form of radio transmission (generally over 1 GHz). |
| MMS | Multimedia Messaging Service. |
| Mobile broadband | Data services provided over the mobile network. |
| Mobile network operator | A company that operates a mobile broadband network that delivers services to customers. |
| Mobile virtual network operator | A company that resells services from mobile network operators directly to consumers. |
| National Broadband Network (NBN) | The national wholesale-only open access data network in Australia offering high-speed broadband to all Australian premises constructed by NBN Co Limited (nbn). |
| National Relay Service (NRS) | Provides access to the standard telephone service for people who are deaf or have a hearing or speech impairment through the relay of voice, internet or TTY communications. |
| NBN Co Limited (nbn) | The Australian Government‑owned enterprise established to design, build and operate the National Broadband Network. |
| NBN fixed line | Any NBN network connection that utilises a physical line running to the end users’ premises (FTTB, FTTdp, FTTN, FTTP, HFC). |
| NBN fixed wireless | A wireless access link from the end users’ premises to a wireless base station that is connected to the NBN network. |
| NBN satellite | Satellite services provided to premises in Australia that are not within the fixed‑line or fixed wireless footprints. These include interim measures and long‑term satellite services (*Sky Muster* and *Sky Muster II*). |
| Network Reliability Framework | Requirement on Telstra to regularly report on the reliability of its fixed-line services, and to remediate the network in areas with particularly poor performance. |
| Over-the-Top (OTT) services | A general term for services delivered over a network that are not provided by that network operator. These services use the infrastructure service but are provided independently of the network operator. |
| Packet switching | A method of transmitting messages by subdividing them into short packets containing the data and a destination address. Each is passed from source to destination through intermediate nodes which direct each packet onwards. The packets are reassembled into the original message at the receiving end. |
| Payphone | A public telephone where calls may be paid for with coins, phone cards, credit cards or reverse charge facilities. |
| Plain old telephone service | A voice‑grade telephone service that uses analogue signal transmission over copper loops. |
| Point of interconnection | The point at which a carrier’s network links with telecommunications equipment or facilities not belonging to that network. |
| Port | A point of access into a communications switch, a computer, a network, or other electronic device. |
| Premises | An end user residence such as a house or apartment, or a commercial site such as an office or factory. |
| Prioritisation | The ability to give some voice or data traffic preference over other traffic. |
| Priority Assistance | A customer status that entitles those with life‑threatening medical conditions to have priority connection and fault repair for their home telephone service. |
| Public safety mobile broadband | Mobile broadband services that meet specific capacity, coverage and quality of service standards for public safety. |
| Public switched telephone network (PSTN) | The infrastructure for basic telecommunications services (including telephones, switches, local and trunk lines, and exchanges). |
| Radio | Any device that can wirelessly send and receive information over a mobile communications network. |
| Radio Access Network (RAN) | A part of a wireless telecommunications network which connects mobile devices or fixed wireless consumer antennas to the base station. |
| Reliability | The proportion of time in which a service is available. |
| Retail service provider (RSP) | An entity that provides telecommunications services to end users and has a direct customer relationship with end users. |
| Roaming | The ability to move seamlessly from one WiFi or mobile network to another with no loss in connectivity. |
| Services in operation (SIO) | The number of services provided at a particular time. The term can be used in the context of both fixed-line and mobile services. |
| SIM (subscriber identity module) | An integrated chip-based module that identifies a mobile subscriber. |
| Smartphone | A mobile phone built on an advanced mobile operating system, with computing capability and connectivity. |
| SMS | Short message service. |
| Spectrum | The bandwidth of a communications system, expressed in terms of the frequencies it can carry. |
| Standard telephone service | Defined under the TCPSS Act 1999 (s. 6) as a telephone service fit for the purpose of voice telephony. If voice telephony is impractical for a person with disability, an ‘equivalent’ form of communication must be provided. |
| Telecommunications industry levy (TIL) | A payment collected by the ACMA from telecommunications carriers with eligible annual telecommunications sales revenue of $25 million or more. Eligible carriers pay a proportion of the TIL based on their share of total industry revenue. |
| Telecommunications universal service obligation (TUSO) | An obligation under the TCPSS Act 1999 to ensure that the standard telephone service, payphones and prescribed carriage services are reasonably accessible to all people in Australia on an equitable basis, wherever they reside or carry on business. |
| Teletypewriter (TTY) | Telephone typewriter designed for people with a hearing or speech impairment. It allows communication to be typed after a call is connected and calls can be connected to another TTY user or relayed and translated to voice by the National Relay Service. |
| Telstra USO performance (TUSOP) Agreement | Telstra universal service obligation performance agreement between the Australian Government and Telstra. One of a series of separate, yet interrelated, agreements signed by the Government, Telstra and nbn to enable the construction and operation of NBN infrastructure. The Agreement sets out contractual arrangements (including payment) for Telstra’s delivery of the universal service obligation and some other public interest telecommunications services. |
| Transmission network | The portion of a telecommunications network that comprises the intermediate links between the core network and the access network. |
| Unconditioned local loop (ULL) | The copper wire between the end user’s network boundary and a local or remote switch. |
| Universal access | Availability of a telecommunications service on a shared basis (for example, public payphones and community WiFi). |
| Universal service | Availability of a telecommunications service on a private basis (for example, a standard telephone in every household). |
| Universal service obligation (USO) | A legally enforceable requirement to provide a service (often but not always at a reasonable price and given quality) to all users within a jurisdiction. |
| Universal service provider (USP) | Under the TCPSS Act 1999, the Minister for Communications and the Arts determines which carrier will be the primary universal service provider. As the designated provider, Telstra is responsible for the provision of USO services throughout Australia. |
| Virtual Network Operator | A company which does not own the telecommunications infrastructure but resells services from other telecommunications suppliers directly to consumers. |
| Voice over Internet Protocol (VoIP) | The transport of voice traffic inside data packets over the internet. VoIP calls can be either ‘Managed VoIP’ provided by a retail service provider that is similar to traditional telephony, or ‘Over‑the‑Top VoIP’ that is provided on a best efforts basis by third parties (such as Skype and Apple FaceTime). |
| Wholesale Broadband Agreement (WBA) | Agreement that governs the supply of NBN wholesale products. |
| WiFi | A technology that allows electronic devices to connect to a wireless network. |
| Zero-rating | A practice where providers do not charge end customers for data used by specific applications or internet services through their network, in limited or metered data plans. |