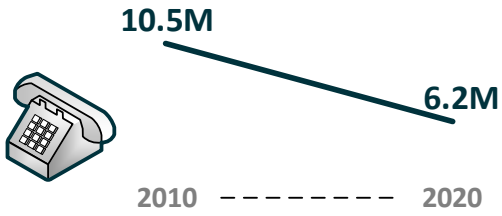
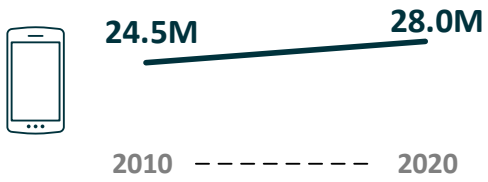
Local Government and Utilities' opportunity to realise economic and community benefit through connectivity.

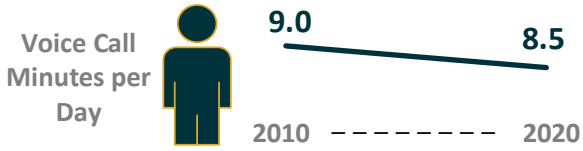
Australia stands poised on the edge of a new era in connectivity that offers real opportunity for significant benefits to be realised by both government and business, but in many organisations, preparation will be required.

For the last 50 odd years, telecommunication connectivity in Australia has been evolving and generally focussed on expanding access to more customers and then subsequently increasing the functionality and bandwidth supplied. The plain old telephone service became ubiquitous in the 70's and 80's followed by the first mobile services in the 90's.



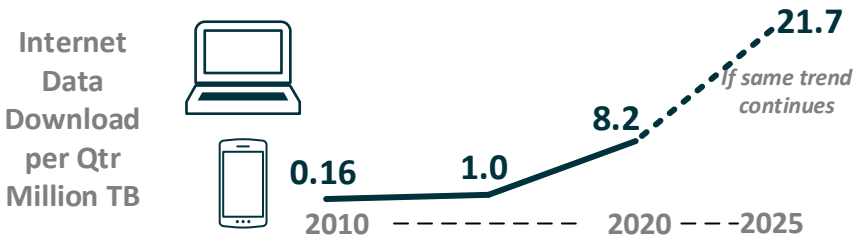


Now, the plain old telephone service in the home or business environment is fast declining in usage. Although we are more connected, as a nation we are talking less on fixed and mobile services with the average voice call minutes per day per person declining over the last 10 years.



For the last twenty years the primary goal has been the supply of greater per service data bandwidth to consumer and business customers on both fixed and mobile networks.

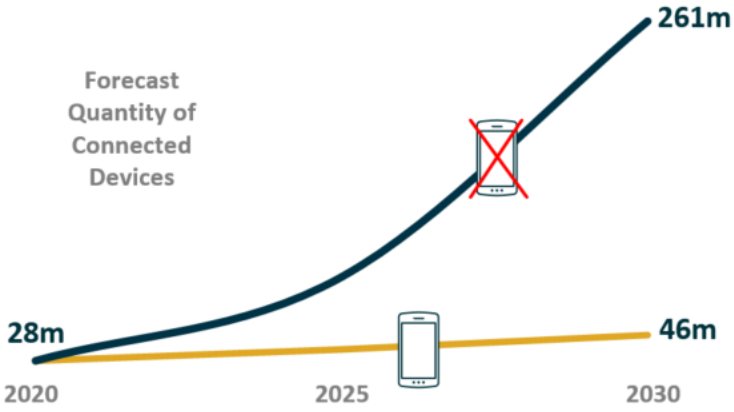
Within metropolitan and larger urban areas consumers generally now have access to an acceptable choice of data services. There is still a shortfall in access and choice across regional and remote areas of the country where further investment is required. The reason is that economies of scale decline quickly in regional and remote areas due to the density of connections, making investment in city-like connectivity a poor return, especially for newer market entrants fighting for a minority share of an already thin market. This is why government is often forced to subsidise new competitive infrastructure (e.g. the 'Black Spot' programs) or to legislate for cross subsidies (e.g. NBN national pricing).



The demand for data across consumer, business and government is forecast to continue growing.

Our observation is that in addition to addressing the digital divide for regional and remote areas, the challenge now facing Australia has shifted from satisfying user bandwidth demand to the connection of millions of devices for control of a myriad of systems and things and the subsequent collection and analysis of data – the Internet of Things (IoT).

The number of non-mobile handset connected devices is forecast to grow at approximately 25% compound per annum and will far exceed the number of services used by individuals or businesses. The machine connected devices have different characteristics of lower average bandwidth required, always on, and fast response time. The "Internet of Things (IoT)" which has been talked about for many years is now set to grow rapidly.



The rapid expansion of IoT devices presents two primary issues:

1. The increasing deployment of new network infrastructure to provide robust reliable connections to low powered devices in often difficult to connect locations (e.g. 5G small cells, LPWAN sensor network, etc),
2. Effective use of the increasing volume of information that will become available from the broad deployment of connected devices.

From a technical/commercial perspective, multiple network technologies will be required to satisfy coverage demands and also provide solutions that deliver the low cost per connected unit that is needed to facilitate deployment at large scale.

The Vision for Smart Cities is to use technology to improve economic outcomes and the living conditions for the broader community. In simple terms, using technology to gather data (in real time) to act quickly and, provide data for better real-time and predictive decision making by government, business or individuals.

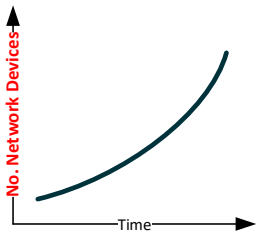
It is not expected that there will be significant technical constraints for the delivery of connectivity to the millions of devices, although the cost of connectivity per unit may still be a limiting factor. There are however technical, functional, legal and commercial constraints with respect to the access to and the use of the data which will be generated.

Currently, almost all existing IoT device deployment and the subsequent collection of data is driven by equipment/solution providers and siloed by industry and the customers generating and using the data, for example electricity networks, water utilities, traffic management etc. Even within a single organisation, data is often siloed on a system basis and not available to all potential users even within that organisation.

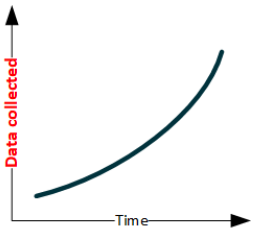
Innovative thinking, measured risk taking and empowered decision making will require access to data from multiple sources for evaluation and analysis.

The primary challenges facing utilities and local government with respect to IoT connectivity are twofold:

1. The imminent increased deployment of third party telecommunication infrastructure across their assets (poles, street furniture etc) to provide connectivity (5G, and IoT communications),
2. Ensuring that optimal interoperability of IoT devices / platforms and the data collected is used to extract real value and potentially under the right conditions is made available to share with others.



Utilities and local government may choose to resist the increasing deployment of telecoms equipment on their assets, or within their communities, or embrace it by developing a strategic approach that recognises the positive economic benefits, reduces staff resource workload, minimises the visual impact in the community and assesses and recovers the cost of access on their underlying assets.



To extract the greatest benefit from the data which will be collected from IoT devices, utilities and local government will need a cohesive and practical IoT Strategy that ensures a sustainable model which ensures optimal interoperability of potentially disparate IoT devices / networks / platforms that makes data accessible, rather than the current vendor or domain driven silo approach. A sustainable IoT Strategy will consider the organisation's broader goals along with potential partnering with others to empower the value of *all* IoT data to deliver real community benefit.

Our experience shows that when infrastructure owners embrace the future deployment of telecommunication infrastructure, and plan for an efficient collaborative response, the organisation saves internal resources and there is a faster deployment of new technology.

We have directly assisted organisations develop holistic IoT strategies which provide a foundation decision framework for IoT device/solution selection and the effective capture and management of data which will deliver real and sustainable benefit.

While there is opportunity for near term operation and economic benefit, IoT strategy and implementation should not be led by vendor advantage, department level decision making or siloed data use.

References

1. ABS Telecommunication Data
2. ACCC Industry Reports
3. Ericsson Mobility Report