

2022 Charles Todd Oration

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Abstract: The Charles Todd Oration is an annual event run by TelSoc and is named for Charles Todd, the Postmaster-General of South Australia, who was responsible for completing the Overland Telegraph Line from Darwin to Adelaide in 1874. The 2022 Oration was delivered in Sydney on 21 October 2022 by The Hon. Michelle Rowland, MP, Minister for Communications. At the time she had been in the role for about 5 months following the change of government at the Federal election on 21 May 2022. The Minister used her speech to set out the Government's aims for the communications sector and its initial priorities, and to reflect on her appreciation of the circumstances and potential for the sector, its stakeholders and end-users of communications services. References and endnotes have been added by Jim Holmes, Chair of TelSoc, to enable further reference by interested readers on the matters noted, and for the accuracy and relevance of which TelSoc accepts complete responsibility.

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The Minister's Oration

I acknowledge the traditional custodians of the land on which we meet, the Cadigal people of the Eora nation, and this is an important occasion to acknowledge the traditional owners of the lands on which the overland telegraph was built. I acknowledge all their elders, past present and all First Nations Peoples with us today.

Thank you to Dr Jim Holmes for the kind introduction. And thank you to TelSoc, not just for inviting me today, but for the serious and considered approach you take to public policy. I met with TelSoc as Shadow Minister in February 2021 and again in Melbourne, not long after being sworn in as Minister.

Just this week I was revisiting my notes from that earlier meeting last year. They spoke about the importance of focusing on not what the NBN Co is — but what it can do. We covered the benefits of expanding fibre, the role of ownership on the objectives of NBN Co, and the often unproductive duplication in Federal-State investments schemes.

Those conversations, and the generosity of their time, left a formative impression on me.

There is a special quality to engaging with true telecommunications enthusiasts who, by virtue of their profession and experience, have seen much change in the sector and retain an ongoing passion for sharing ideas and making a contribution.

So, I want to put on record my appreciation to the hardworking engineers and technicians of today who are making a great contribution to Australia's economy and indeed to Australia's Society.

Charles Todd

It is a great honour to be delivering the Charles Todd Oration, particularly in this anniversary year. The Overland Telegraph was an extraordinary feat which demonstrated vision, perseverance and delivery.

The three transformational fixed-line telecommunications deployments in Australia over the last 150 years were underpinned by public investment:

- The Overland Telegraph in the 1870s, which we recognise today;
- The copper telephone network rolled out by the Postmaster General's Department last century; and
- The National Broadband Network, initiated by the Labor Government in 2009.

It took someone with a different, unique set of skills to plan and deliver this project in nineteenth century Australia.

This was Charles Todd who – in what we'd now call a 'sliding doors' moment – almost didn't come 'down under'. In the 1850s, the Colonial Office asked the Astronomer Royal, George Biddell Airy, to recommend someone as a "superintendent of electric telegraphs with desirable experience in astronomical and meteorological observation". The job on offer was to construct a telegraph line between Port Adelaide and Adelaide for the South Australian government, and Airy originally recommended a former employee, J. C. Henderson.¹ Henderson was working in Canada and declined the offer, concerned there may not be permanent work once the project was completed.

Airy's second choice, Charles Todd, was more optimistic – you could say a 'glass half full' kind of person. After accepting the job, and before setting off to the colony, he married Alice, after whom Alice Springs is named. Todd told those at the wedding reception he was '*going to Australia in the hope of being instrumental in bringing England and Australia into telegraphic communication*'.²

The first messages sent on key telegraph lines are always fascinating, especially the ones staged for posterity.

The much publicised and ever-so-slightly pompous official first message sent on the Washington to Baltimore line is the legendary: “what hath God wrought?”³ But that wasn’t actually the first message sent on that line. Although the line had not yet been completed end-to-end and only went as far from Washington as Annapolis, one of Samuel Morse’s associates saw an opportunity to get a jump on the political news of the day. He met the train coming from Baltimore where the telegraph to Washington started. From there he telegraphed the news ahead: that the Whig Party had nominated Henry Clay for President ([Kirk, 1892](#)).

So let it be known that the first use of the electric telegraph was for one of the most important things in life: to confirm a political pre-selection.

The electric telegraph was the core of the world’s communications system for over 150 years: from a multi-technology mix of carrier pigeons, ponies, trains and foot, to virtually instantaneous global communication.

Australians rapidly became one of the most enthusiastic users of the telegraph in the world. The magic of the telegraph compressed distance and time, shifting Australia’s communications networks from arduous months to effortless minutes.

However, it’s important that we acknowledge the impact it had on the First Nations people in the local area, with reports of violence and conflict along the frontier shortly after the telegraph was established. I note this because I believe that reconciling with our past is important to our future.

As do my colleagues in the Albanese Government. At the recent opening of Parliament, the Governor-General’s speech made clear that we have:

... a renewed ambition for Australia to reconcile with our past, to tell and know the truth about history, and to place a First Nations voice at the heart of our democratic process ([“Opening”, 2022](#)).

Our understanding of the Indigenous perspectives of the history of the Overland Telegraph has been scant. The National Communications Museum with Professor Marcia Langton, supported by Telstra, will be leading an important initiative to document the building of the Overland Telegraph from the perspective of First Nations.

This will be a landmark project which will ensure that Indigenous perspectives are given due weight and recorded for posterity. I look forward to hearing and seeing the results.

In 1902, Todd celebrated a sixty-year career in the English and Australian civil services, with forty-six of them in South Australia. This included a long stint as a colonial Postmaster General, then as a Deputy Postmaster General in the newly federated nation; where the ‘various Post and Telegraph departments’ were ‘the first and largest department to be transferred to the Commonwealth’ ([Moyal, 1984](#), p. 88).

As a fourteen-year-old, I visited the Overland Telegraph Station in the Northern Territory with my parents, and as a young teenager, I couldn't have begun to even imagine the interconnected world we live in today, nor the role that I would play in it.

Back then, we didn't have email, and we didn't have mobile phones. The word Internet didn't exist in my dictionary, and I would avidly record my favourite music from the radio onto my cassette player. It was a different time and a different era.

So today, on this 150th anniversary, we honour the contribution of Charles Todd to the communications landscape in Australia.

A better future

On 21 May 2022, there was a change of Government and Anthony Albanese was elected as Prime Minister on a platform of renewal.

Several key elements of the Labor platform were:

- Working together for a better future for all;
- Improving trust and integrity in politics;
- Action on climate change;
- Responsible cost of living relief;
- Improving the lives of First Nations Australians; and
- A more resilient Australia.

And all of this is underscored by a focus on delivery that is focused on people, not politics.

In discharging my responsibilities as Communications Minister, I will bring focus to each of these areas as they relate to the portfolio. But I want to make a very important point to this audience. Governments do come and go. That is the nature of life, and it is indeed the nature of democracy.

But as the Prime Minister has said:

I want every parent to be able to tell their child no matter where you live or where you come from, in Australia, the doors of opportunity are open to us all. And like every other Labor government, **we'll just widen that door a bit more** ([Albanese, 2022](#)).

That is what Labor governments do, and it's a responsibility this Government takes very seriously.

This brings me to our priority for a more digitally included society, particularly within First Nations Communities, unconnected school students, and in regional Australia.

Digital inclusion

In 2020, the Australian Digital Inclusion Index⁴ showed that First Nations people had relatively low levels of digital inclusion – approximately eight points below the national average.

The inclusion of Target 17 in the National Agreement on Closing the Gap⁵ – which commits parties to the goal of equal levels of digital inclusion by 2026 – reflects the importance of addressing the digital divide.

While there are a number of existing programs that contribute to addressing digital inclusion in rural and regional Australia, we are exploring options to leverage them and investments more effectively, focusing on the initiatives that have been shown to achieve meaningful results in First Nations communities.

For example, we have observed the success of programs such as IndigiMOB⁶ to improve digital inclusion and cyber safety awareness. This program is funded by Telstra and operates in 24 remote communities across the Northern Territory.

There is also NBN Co's Communities in Isolation Program,⁷ which enabled Wi-Fi in 52 isolated communities during the early stages of the pandemic, using SkyMuster satellite services.

NBN Co has also developed a Public Interest Premise (PIP) policy which enables schools, emergency services, Indigenous organisations, Government facilities and health facilities in the Sky Muster footprint to access additional data of up to 300 Gigabytes (GB) per month. This policy supports about 100 First Nations communities to better access much needed services.

Closing this Gap matters. We have inherited a massive challenge in terms of closing the digital inclusion gap. Together we need to make meaningful progress against Target 17. I will be seeking the insight, energy and engagement of industry and stakeholders in co-designing programs which make a real difference. I will also ensure that Indigenous voices are heard loudly and clearly in the communications sector and policy space.

More broadly, the Australian Digital Inclusion Index 2021 (ADII) ([“Digital Inclusion”, 2021](#)) shows that digital inclusion is trending in a positive direction at the national level.

However, there is still a digital divide for regional and rural Australia, with a score of 67.4 compared to a national score of 71.1. The gap between regional Australia and the national average is greatest for affordability and access. It's clear we need a continued focus on supporting key elements of digital inclusion – access, affordability and ability – across regional Australia.

One of our early focus areas will be unconnected school students. Over the course of the pandemic, schools and state education bodies learned a lot about the scope of this problem, as remote learning forced previously unseen issues to become visible. There is a relatively modest cohort of families with no connectivity at home, but for those families, a bit of support can make a meaningful difference.

The upcoming 2022–23 Budget next week will reveal our commitment to help connect up to 30,000 families who do not have Internet at home. I want to thank my Department and NBN Co for their ongoing work in seeking to simplify the program design of this initiative. The local partnerships with state education systems, charities and welfare groups will be critical in identifying families who can most benefit.

Regional connectivity

I would now like to turn to regional connectivity.

Labor cares deeply about quality of life in the regions, and next week will be one of the most regional focused communications budgets. Nearly all my travel as Minister to date has been in the regions, including centres such as West Wyalong, Griffith, the Central Coast, Hunter Valley and Gladstone, with many more planned.

A key mission of previous Labor Governments has been expanding access to better communications services for Australians. Some of the significant contributions include:

- Establishing the Overseas Telecommunications Commission in 1946 under the Chifley Government. The OTC was the functional descendent of the Overland Telegraph.
- On 1st July 1975, the Whitlam Government passed the Telecommunications Act.⁸ That, for the first-time, separated telecommunications from postal services. The entity that later morphed into today's Telstra. And, of course, under Whitlam, Telecom Australia was an Australian Government owned entity.
- In 1991, universal service was legislated and competition, including in mobiles, was introduced under the Hawke-Keating Government;⁹ and
- In 2009, the National Broadband Network, which for the first time provided for universal access to high-speed broadband, was legislated and commenced under the Rudd Government.

Improving regional telecommunications is a top-order priority for the Australian Government.

This Government is focused on expanding mobile coverage, improving the quality of the NBN, making communications systems more resilient, boosting productivity in agriculture through connectivity, and deepening co-investment partnership models with states and territories.

On top of this, we want to see progress made in how planning is undertaken for new development estates, to ensure mobile infrastructure is considered as part of the planning process, just as with other essential infrastructure, such as energy and water.

What has really struck me about regional connectivity is the passion it endears in people who know what a difference it makes. Last week, I paid a visit to the NBN Co offices in North Sydney to meet with staff and executives. One of the most enjoyable aspects was engaging with teams working on the regional networks, and the sense of purpose and mission evident in their endeavours.

There is an extraordinary amount of innovation happening in regional telecommunications.

In one of my first substantive acts as Minister, the Australian Government signed off on \$480 million in funding to NBN Co to upgrade the fixed wireless network under the *Better Connectivity Plan for Regional and Rural Australia*¹⁰ and I want to take a moment to explain how engineers at NBN Co and their delivery partners intend to use this investment.

At present, the maximum range of a cell on NBN Co's Fixed Wireless network is approximately 14 kilometres, using current spectrum. This distance is limited by the time it takes for a signal to perform a round trip between the wireless tower and an end user's modem, in addition to the time required to decode a particular segment of that signal, known as the "RACH" [Random Access Channel] sequence. NBN Co worked with their technology vendors as part of an extensive research, development and testing process to validate that shortening the RACH sequence would enable the signal to be recognisable on the network at greater distances. This enabled an increase in the coverage radius out to 29 kilometres.

This breakthrough, in conjunction with the reuse of its existing spectrum, augmented with high frequency spectrum, and integration of new miniaturised lens antennae, will enable NBN Co to significantly boost the capacity and coverage of existing towers.

At present, NBN Co fixed wireless towers are divided into three 120-degree sectors with 2 or 3 wireless cells per sector. The NBN plan will result in a 3- to 5-fold increase in the typical number of wireless cells per sector. This is a unique global achievement, and should enable NBN Co to reduce the number of users per wireless cell to no more than 10.

Once upgraded, 750,000 households and businesses within the fixed-wireless footprint will be able to benefit from access to increased download speeds of up to 100 Megabits per second, with up to 85 per cent able to access speeds of up to 250 Megabits per second.

The extended signal distance will also enable a further 120,000 currently satellite-only premises to access fixed wireless.

This means students, families and businesses can access a significant jump in speeds, and also access more data — a meaningful improvement in day-to-day quality of life and productivity.

There is also significant innovation happening in the area of Low Earth Orbit (LEO) satellites. These rapid developments are bringing choice and a step change in broadband capability to businesses and households in regional and rural Australia. LEO satellites are also now being used to support text messaging on mobile devices.

This is why I've asked my Department to commence work on the establishment of a Low Earth Orbit working group to help inform Government about how this emerging capability might play a role in future telecommunications policy.¹¹

There is also an ongoing challenge with the legacy of copper broadband NBN lines, with parts of the regional network more than 60 years old. These lines are deteriorating and don't mix well with water, which unfortunately Australia has seen a lot of lately — and which will continue to be a challenge, both in cost and reliability of services for consumers.

As the Prime Minister and I announced yesterday, the Government is investing \$2.4B, through phased equity injections to NBN Co, which will be used to expand full-fibre access to 1.5 million additional premises by late 2025.¹² I'm also pleased to share we expect this investment will benefit over 660,000 homes and businesses in regional Australia.

This is what Australians voted for and that is what the Government is now delivering.

But optical fibre is not just about better speed. It is also about delivering more reliable and resilient connectivity, with significantly reduced operating and maintenance costs. This can be seen clearly in the consumer fault data that is encouraging, especially after each flood event.

A technical audit of the NBN Fibre-to-the-Node (FTTN) network predicted long-term degradation in average FTTN attainable speed rates of between 2.2 per cent to 3.7 per cent per annum, and this will rise if we continue to see more frequent or extreme rainfall.

Fifty-seven billion dollars spent by the Coalition in office, effectively double their originally promised cost estimate, and the performance in parts of the Fibre-to-the-Node network is moving backwards, not forwards. It doesn't take an engineer or an economist to understand that fibre was always the best choice for our current and future Internet needs.

And while that aspect of the debate has been well and truly settled, this is just another reminder of why the Government's latest investment is important for the future of the NBN and the needs of Australians.

Finally, I have also announced a series of substantial additional investments in regional and rural Australia which demonstrate the very real commitment of the Albanese Labor government to leaving a legacy of improved regional and remote communications.

Our Better Connectivity Plan for Regional and Rural Australia¹³ will provide an additional \$656m of investment for a raft of important initiatives, including a national mobile network audit, improved mobile coverage, resilience initiatives, further rounds of the Regional Connectivity Program, and an extension of the Regional Tech Hub. As part of this, Labor also committed \$30 million towards expanding on-farm connectivity, and I assure you, we were the only party that had such a plan.

You will also be aware that one of my pre-election commitments was to evolve Mobile Blackspots to incorporate multi-carrier mobile coverage. While there has been significant positive community feedback regarding Mobile Blackspot improvements, the concern which has been raised time and again is that substantial taxpayer funding has gone into these programs, but less than 1 in 5 towers have two or more mobile operators on them.

This is not good enough and we have to do better.

Low population density and high deployment costs are fundamental reasons why the government has stepped in to help co-fund mobile infrastructure, and we expect public programs will need to subsidise a higher proportion of tower deployment costs in uneconomic areas due to the diminishing revenue opportunities for remaining areas which are underserved.

I have been careful not to specify, to date, a specific or inflexible model for multi-carrier coverage. I am closely following the many trials which are being conducted around Australia with different forms of active sharing and neutral hosting. But I wish to make clear that this is a path we are committed to, and standing still is not an option. Those trials have at least established that there are few technical barriers — the problem is strategic and commercial.

There are many ways to cut this cake and I am keen to hear which possibilities the industry believes can work best. The Department will be running public consultations in due course, and I have asked the House of Representatives Standing Committee on Communications and the Arts¹⁴ to examine this. On both fronts, we look forward to continuing a robust and healthy discussion on how best to deliver on our commitments.

Conclusion

In closing, let me once again thank TelSoc for the honour of delivering the 2022 Charles Todd Oration, and a sincere thank you to everyone in attendance for your indulgence.

The Overland Telegraph and the NBN are both game-changing infrastructure projects, with immediate and huge benefits to business and the community. And while we have made progress over successive generations, there remains much to do.

I have been very fortunate to be entrusted by Prime Minister Anthony Albanese with a portfolio that is my passion and was my professional life before public office.

As I told the Sydney Institute in 2019, I am even more fortunate to have maintained the mentoring and confidence of some of the smartest people I know whom I worked with or for over a decade as a lawyer, and nearly a decade since moving to this new life. The periods where I learned the most were when I was seconded into other businesses, working with engineers and economists. Having the engineers draw the picture and be solutions-focused really shaped how I approached my profession. This drives my optimism, because there are so many smart people in this sector who want to make a contribution to good public policy.

One of my biggest insights as a new Minister, which won't be surprising to anyone, is that government and governing is hard. There are many challenges, resources and time are constrained, and even with the best intentions you cannot address all issues at once. So, it's important to be clear about your priorities and principles. You have to focus on where you can make a meaningful impact. Always striving to make making things better — making the future better — even if challenges continue to linger.

The NBN, wireless communications, and machine-to-machine connectivity hold out the promise of 'turbo charging' productivity in 21st century Australia – but it drives so much more than that. Communications touches the lives of every Australian, each day, each week, and each year. Our purpose remains to promote opportunity in a disrupted, broadband-enabled world. Growth and innovation are the goal, and it must be inclusive.

The Government will remain focused on the priorities I have outlined today, and I look forward to working with you on that journey.

Thank you for your time.

References

- Albanese, A. (2022, May 21). Doors of Opportunity [video online]. Available at <https://www.theaustralian.com.au/nation/politics/doors-of-opportunity-open-to-all-australians-albanese/video/f7848f9613ec10boabda849a51f7ba12>
- Cryle, D. (2017). *Behind the Legend: The Many Worlds of Charles Todd*. North Melbourne: Australian Scholarly Publishing.
- Digital inclusion: the Australian context in 2021. (2021). Available at <https://www.digitalinclusionindex.org.au/>
- Holmes, J. (2018). Behind the Legend: A New and Comprehensive Biography of Charles Todd. *Journal of Telecommunications and the Digital Economy*, 6(1), 107–114. <https://doi.org/10.18080/jtde.v6n1.148>

Kirk, J. W. (1892, May). Historic Moments: The First News Message By Telegraph, *Scribner's Magazine*. Available at <https://todayinsci.com/Events/Telegram/TelegraphFirstNews.htm>

Moyal, A. (1984). *Clear Across Australia: A History of Telecommunications*. Thomas Nelson Australia, Melbourne.

Opening of the First Session of the Forty-seventh Commonwealth Parliament, Parliament House Canberra (2022, July 26). The Governor-General of the Commonwealth of Australia. Available at <https://www.gg.gov.au/about-governor-general/media/opening-first-session-forty-seventh-commonwealth-parliament-parliament-house-canberra>

Endnotes

¹ See Cryle (2017), p. 49. Note that this biography was reviewed in the *Journal* (Holmes, 2018).

² Dodwell, G. F., 'Sir Charles Todd' Obituary, 1910, cited in Cryle (2017), p. 53.

³ https://americanhistory.si.edu/collections/search/object/nmah_713485

⁴ <https://www.digitalinclusionindex.org.au/>

⁵ <https://www.closingthegap.gov.au/national-agreement/targets>

⁶ <https://indigimob.com.au/>

⁷ <https://www.nbnco.com.au/content/dam/nbn/documents/about-nbn/reports/reports-and-publications/Custom-experience-partnerships-and-connected-communities.pdf>

⁸ Telecommunications Act 1975 (Cth), http://classic.austlii.edu.au/au/legis/cth/num_act/ta1975214

⁹ Telecommunications Act 1991 (Cth), http://classic.austlii.edu.au/au/legis/cth/num_act/ta1991214/

¹⁰ <https://www.infrastructure.gov.au/media-communications-arts/better-connectivity-plan-regional-and-rural-australia>

¹¹ <https://minister.infrastructure.gov.au/rowland/media-release/albanese-government-launches-low-earth-orbit-satellite-working-group>

¹² <https://minister.infrastructure.gov.au/rowland/media-release/albanese-government-delivers-major-nbn-boost-2022-23-federal-budget>

¹³ <https://www.infrastructure.gov.au/media-communications-arts/better-connectivity-plan-regional-and-rural-australia>

¹⁴ https://www.aph.gov.au/Parliamentary_Business/Committees/House/Communications/Mobileco-investment