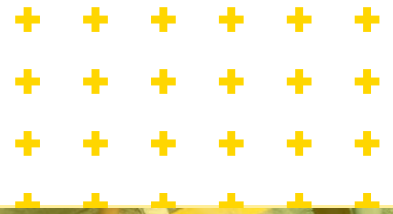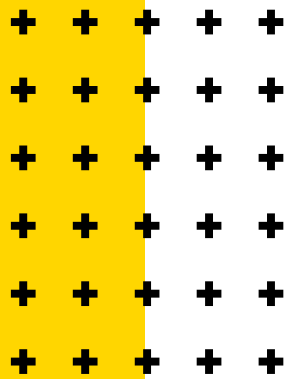# REGIONAL TELECOMMUNICATIONS REVIEW 2024

SUBMISSION BY THE **ARC CENTRE OF EXCELLENCE FOR AUTOMATED DECISION-MAKING AND SOCIETY (ADM+S)**

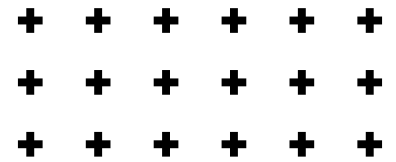31 JULY 2024

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EXECUTIVE SUMMARY

This submission to the 2024 Regional Telecommunications Review by the ARC Centre of Excellence for Automated Decision-Making and Society (ADM+S) addresses the significant and persistent digital divide in regional and remote Australia. It builds on previous contributions to the 2018 and 2021 reviews, drawing on extensive research from key national projects, including the Australian Digital Inclusion Index (ADII), Mapping the Digital Gap, and 5G and the Future of Public Telecommunications. The following key points summarise the findings:

- **The digital divide increases with remoteness.**

The digital divide in Australia increases with remoteness, with significant differences in Access, Affordability, and Digital Ability between major cities and regional and remote areas. In 2022, areas outside capital cities recorded an overall ADII score of 69.8, which is 3.4 points below the national average and 5.0 points less than capital cities. Levels of digital exclusion are higher in regional and remote parts of the country.

- **There is not just a digital divide between capital cities and the rest of Australia, but divides across and within regional Australia.**

Digital divides are present not only *between* capital cities and regional Australia but also *within* regional areas, influenced by factors such as income, education, housing tenure, disability, and age. Older Australians, in particular, face significant challenges, with a considerable gap in Digital Ability between younger and older age groups. This gap is larger outside of capital cities.

- **Connectivity options are heavily constrained for some groups because of affordability barriers.**

Affordability is a critical barrier to digital inclusion, particularly for socially and economically disadvantaged groups such as those on low incomes, people with disabilities, and First Nations people. Many in remote First Nations communities rely on pre-paid mobile services, which, despite offering cost control, can be more expensive per gigabyte and lack the continuous access provided by post-paid plans.

The share of Australians who would need to pay more than 10% of their income to afford quality, reliable internet is above the national average (4.3%) in inner regional (5.1%), outer regional (6.0%), and very remote (8.5%) areas. Many emerging technologies (e.g. 5G, low Earth orbit [LEO] satellites), where they are available, are currently inaccessible to people on the lowest incomes. There is a need for ways to access quality and reliable connections for this group.

- **While work is starting on First Nations-led digital inclusion solutions, more needs to be done.**

There is a substantial digital divide between First Nations and other Australians, especially in remote areas. First Nations people in remote areas have lower levels of digital inclusion, primarily due to failures in public policy and market-led communications deployment. While there are emerging First Nations-led digital inclusion solutions (e.g. community controlled Wi-Fi networks), more needs to be done to support community-driven approaches.

- **Regional consumers prioritise consistent, reliable connections.**

Connectivity challenges in regional and rural areas can mean that performance upgrades (e.g. upgrading 4G to 5G NSA) have less immediate appeal than improved availability. There is a common belief among many residents in regional Australia that consistent and reliable connections are essential. However, these basic needs are presently not being met by existing arrangements.

- **A mix of solutions – both 'low tech' and 'high tech' – can deliver reliable, affordable, and consistent connections to regional and remote Australia**

While emerging technologies offer potential for enhancing connectivity, they may not be well-suited to the diverse geographic and cultural landscape of regional and remote Australia. 'Low-tech' solutions, such as public phones, Wi-Fi networks, UHF radios, and global satellite communicators, can be more durable and cost-effective. These solutions remain essential, especially in remote areas with no mobile access, and should be paired with emerging technologies (such as LEO satellite connections) where appropriate.

In conclusion, despite some improvements, regional areas continue to exhibit lower digital inclusion scores compared to the national average and metropolitan areas. This means people living in regional and remote areas are more likely to lack access to quality, reliable connectivity, face barriers to the costs of digital devices or data, and lack the confidence and skills required to use technologies effectively to achieve a range of tasks. As such, there is a pressing need to engage with local communities and their representatives to design and deliver telecommunications arrangements suitable to the specific geographies, context, and cultures of these communities.

We appreciate the opportunity to provide this submission and are available for further discussion upon request.

BACKGROUND

The ARC Centre of Excellence for Automated Decision-Making and Society (ADM+S) is pleased to have the opportunity to provide input to the 2024 Regional Telecommunications Review. This submission builds on the research team's contributions to both the 2018 and 2021 reviews and draws on several key programs of research conducted by the ADM+S:

- **The Australian Digital Inclusion Index** (ADII) uses survey data to explore how digital inclusion, defined as the ability to access and use digital technologies effectively, varies across the country and across different social groups. The ADII measures digital inclusion across three dimensions of Access, Affordability and Digital Ability. Conducted since 2015, the ADII has allowed us to track changes in the distribution of digital inclusion in Australia over time.
- **Mapping the Digital Gap** uses surveys and interviews to measure the distribution of digital inclusion in 12 remote First Nations communities. With Closing the Gap Target 17 aiming for equal levels of digital inclusion for Aboriginal and Torres Strait Islander people by 2026,[1] Mapping the Digital Gap provides data to track the scale and nature of the digital gap, and evidence to inform policy and programs to help close the gap.
- **5G and the Future of Public Telecommunications** is an ARC-funded research project that explores how consumers and various stakeholders across the public and private sectors are engaging with 5G networks, including those in regional Australia. The project also assesses how the rollout and adoption of 5G will impact Australia's existing telecommunication policy frameworks.

Given the focus of the inquiry, this submission will focus on the distribution of digital inclusion and implications of changing telecommunications services in regional, rural and remote Australia, including in remote First Nations communities.

ABOUT THE EVIDENCE USED IN THIS SUBMISSION

Between June and December 2022, the ADII conducted its annual Australian Internet Usage Survey (AIUS), with a total of 5,132 respondents. This sample includes 495 First Nations people living in remote and very remote areas of Australia that were surveyed as part of the Mapping the Digital Gap project. The AIUS investigates how Australians use the internet, what benefits Australians get from the internet, and what barriers exist to internet connection and use. The survey sample is stratified and weighted to reflect the Australian population. This submission draws on the 2022 wave of data

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[1] Department of the Prime Minister and Cabinet. Outcome 17: Closing the Gap. https://www.closingthegap.gov.au/national-agreement/national-agreement-closing-the-gap/7-difference/b-targets/b17

collection, as well as the previous two waves of the AIUS in 2021 (n=2,287) and 2020 (n=2,798).

In this submission, we report ADII scores for Access, Affordability and Digital Ability across different demographic categories, such as age, education, employment and income. ADII scores range from 0 to 100: the higher the score, the greater the level of digital inclusion. ADII scores are relative, allowing comparisons across different social groups and geographic areas, and over time. Each of the Index dimensions – Access, Affordability and Digital Ability – are equally weighted to derive the total Index score.

The ADII dimensions		
Access	**Affordability**	**Digital Ability**
Access concerns opportunities to gain a reliable internet connection and use various digital devices, alongside the frequency of online access. A typical individual with a high Access score has high frequency and intensity of use; fixed broadband; fast and unlimited data allowances; and access via a range of devices.	*The Affordability dimension measures the percentage of household income required to gain a good quality service with uninterrupted connectivity. To do this, we consider the price of a basket of goods and services required for a well-connected household.*	*Digital Ability measures skill levels: what people can do online, and their confidence in doing it. A person with a high Digital Ability score can perform a range of basic and complex tasks, while those with lower scores may only have basic or no operational skills.*

While the AIUS survey enables us to report a national Index score for a range of socio-demographic groups, its sample means large numbers of responses are not collected for every regional area. To provide a more granular view of the geographic distribution of digital inclusion, the ADII uses a robust technique called Small Area Estimates (SAE). In modelling SAEs for the Index, national AIUS survey data is combined with Census data to estimate Index scores at the State and Local Government Areas.

Further information about the ADII, including more detailed findings, are available on the ADII website: digitalinclusionindex.org.au. A summary report of the 2022 findings, as well as reports for previous iterations of the Index, are available at: digitalinclusionindex.org.au/download-reports.

In this report, we also draw on findings from the 5G and the Future of Public Telecommunications project, led by Associate Professors Rowan Wilken and James Meese, who are both Associate Investigators at the ADM+S. The project offers insights of value to this submission, including on the uneven experience of upgrades to telecommunications networks across Australia and how regional and rural consumers, businesses, and local governments are (and are not) experiencing the introduction of 5G networks. More information about this project are available at: 5gfutures.org.

THE DIGITAL DIVIDE INCREASES WITH REMOTENESS

We start this submission by offering the latest evidence on the digital divide between capital cities and other parts of Australia. Our most recent ADII data (2022) shows that although the capital city-regional gap is narrowing, it remains considerable, particularly in terms of Digital Ability. This means people living outside of capitals continue to record lower levels of digital skills and confidence in conducting a range of tasks online compared to Australians in capital cities.

In 2022, areas outside capital cities recorded an overall score of 69.8, which is 3.4 points less than the national average of 73.2, and 5.0 points less than capital cities. The Affordability gap between capital cities and other parts of the country appears relatively narrow (0.4 points), however, the Digital Ability gap remains considerable and has increased from 7.0 to 7.7 points. The Access gap is 4.0.

For the first time in 2022, we have also measured digital inclusion across five levels of remoteness (major cities, inner regional, outer regional, remote, and very remote).[2] This provides more granular insight into how geography and digital inclusion intersect. Our data shows a general decline with remoteness, with a 12.0 point gap between major cities and very remote areas (Figure 1). This gap, between major cities and very remote areas, is particularly acute in terms of Access (18.2 gap) and Digital Ability (10.3 points).

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[2] These five levels are based on the Australian Statistical Geography Standard Remoteness Structure developed by the Centre for Housing at the University of Adelaide and the Australian Bureau of Statistics. See: abs.gov.au/statistics/standards/australian-statistical-geography-standard-asgs-edition-3/jul2021-jun2026/remoteness-structure
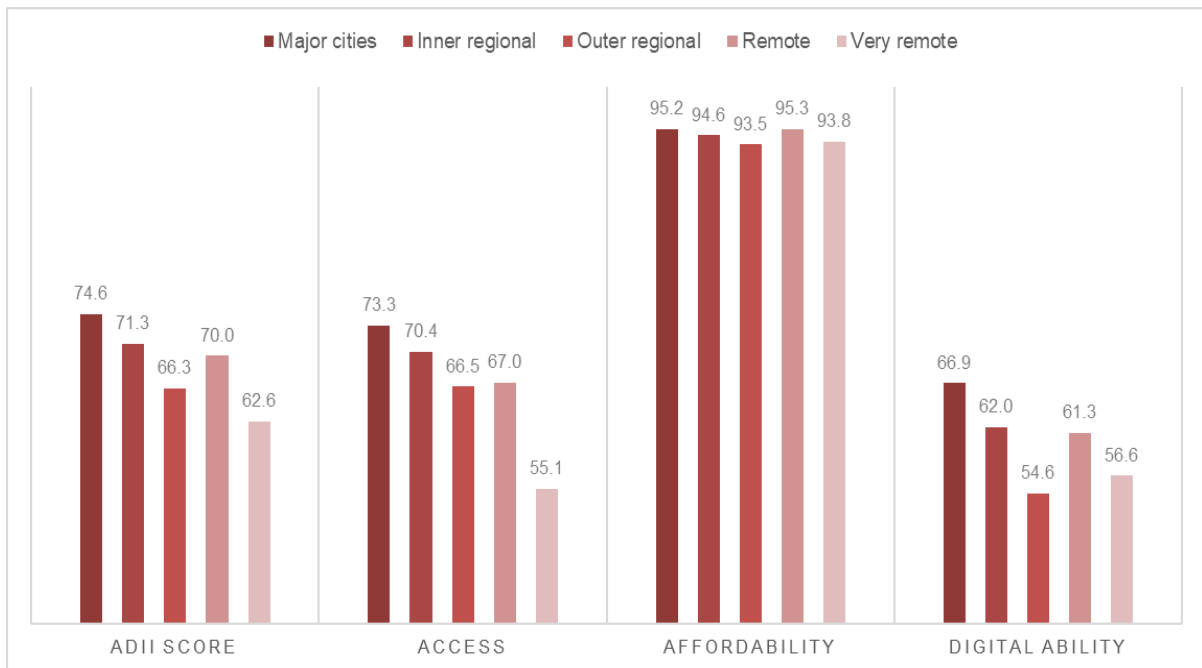
Figure 1: 2022 Index scores, by remoteness. Source: Australian Internet Usage Survey, 2022.

We also track the proportion of the population experiencing digital inclusion and exclusion, by classifying Index scores into four groups:

- Highly excluded (45 or below)
- Excluded (above 45 and below 61)
- Included (61 and below 80)
- Highly included (80 and above).

The threshold for inclusion (61 and above) indicates that a person scoring above that level can make accessible, affordable, and effective use of the internet. To be digitally excluded (with a score below 61) means one lacks the required resources to participate fully in an increasingly digital economy and society.

2022 ADII data shows that digital exclusion is more prevalent in regional and remote Australia. Figure 2 shows digital exclusion is slightly below the average in major cities (20.8%). However, rates of exclusion are markedly higher outside cities, particularly in outer regional and remote areas. In very remote parts of Australia, two in five people (40.6%) are digitally excluded. This means that people living in regional and remote areas are more likely to lack access to quality, reliable connectivity, face barriers to the costs of digital devices or data, and lack the confidence and skills required to use technologies effectively to achieve a range of tasks.
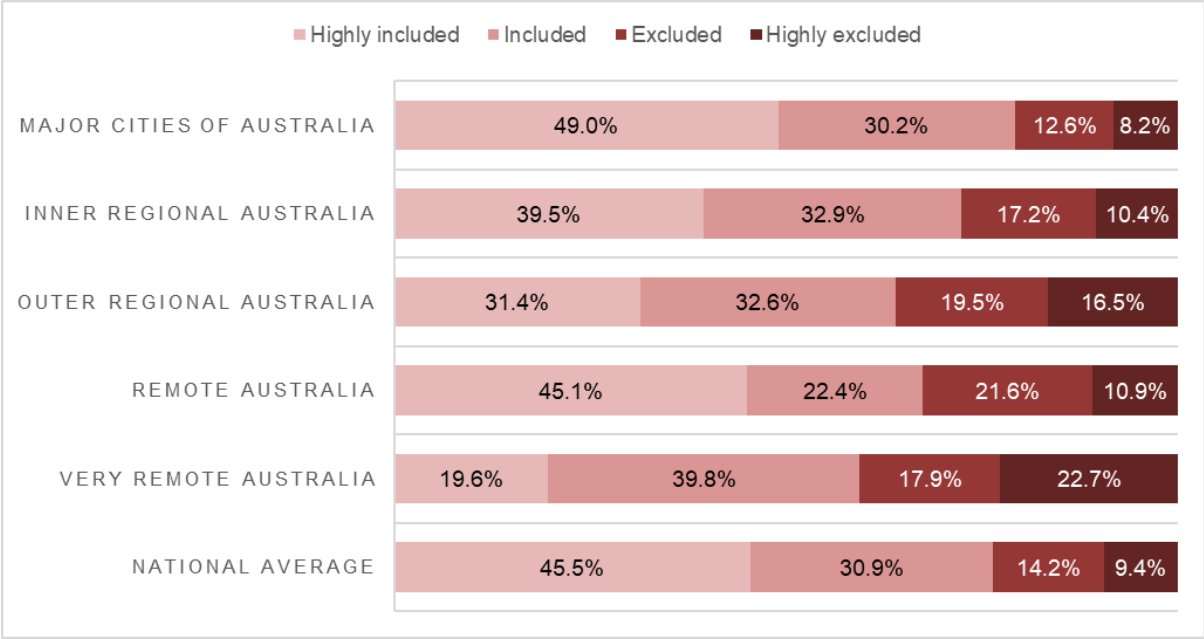
Figure 2: Rates of digital inclusion and exclusion, by remoteness. Source: Australian Internet Usage Survey, 2022.

THERE IS NOT JUST A DIGITAL DIVIDE *BETWEEN* CAPITAL CITIES AND THE REST OF AUSTRALIA, BUT DIVIDES *ACROSS* AND *WITHIN* REGIONAL AUSTRALIA

However, while there is an urban-regional digital divide, it is important to note that Australians living in regional, rural, and remote parts of the country do not have equal access to affordable, quality, and reliable internet nor the skills to use digital technologies. Across and within regional and remote Australia, there are digital divides depending not only on where one lives, but their income, level of educational attainment, housing tenure and composition, disability, and age.

In particular, age continues to be strongly related to digital inclusion, with younger age groups recording higher scores than older Australians. While this is a national trend, it is particularly acute when comparing capital cities and the rest of Australia (see Figure 3).

Overall Index scores drop considerably according to age, and in areas outside capital cities, the gap between 18-34 year olds and those aged 75+ years is substantial (35.2). This considerable gap is seen across the three dimensions of the Index.

The digital divide between younger and older Australians is particularly acute in terms of Digital Ability: what people are able to do online, and their confidence in doing it. Older Australians consistently record lower Digital Ability scores than younger Australians, meaning many have only basic operational skills (e.g. downloading and opening files, connecting to the internet, and setting passwords) and may even lack these fundamental skills.

While the gap in levels of Digital Ability between younger and older Australians is considerable at a national level, the gap is even larger outside of capital cities. Outside of Australia's capital cities, Digital Ability scores move from 82.4 for 18-34 year olds to 48.2 for 55-64 year olds, 42.1 for 65-74 year olds, and 21.6 for 75+ year olds.
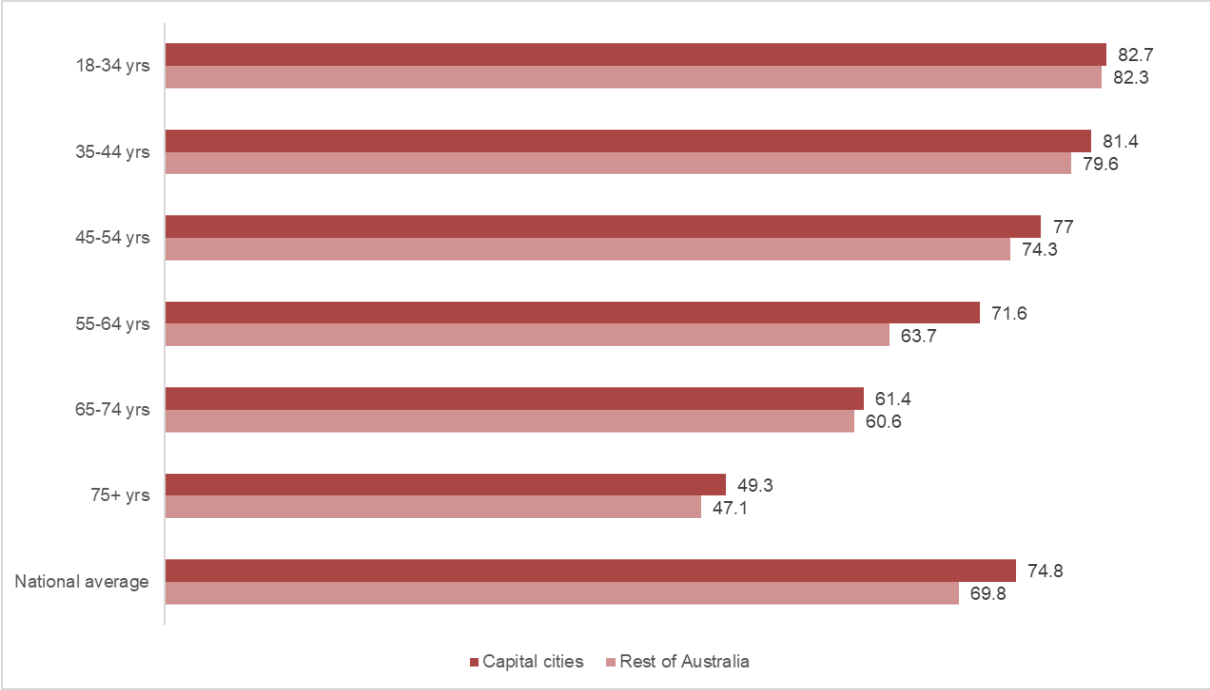

Figure 3: 2022 Index scores by age group, capital cities vs. rest of Australia. Source: Australian Internet Usage Survey, 2022.

Digital inclusion also varies across income, level of educational attainment, housing tenure and composition, and disability. These gaps reflect and reinforce wider social and economic inequalities, perpetuating what some researchers have called an "inequality loop".[3] Barriers to accessing affordability, quality, and reliable connections and devices limit opportunities for skill development, resulting in a "'digitally rich get digitally richer' feedback loop".[4] These inequalities are particularly evident in regional and remote settings.

Additionally, there is a considerable digital gap between First Nations and other Australians. Evidence from Mapping the Digital Gap and the ADII shows that levels of digital inclusion among First Nations people decline with remoteness. The digital gap between First Nations and other Australians nationally is 7.5, with the gap increasing to 21.6 in remote areas and 23.5 in very remote areas. This suggests that First Nations

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[3] Ragnedda, M., Ruiu, M. L., & Addeo, F. (2022). The self-reinforcing effect of digital and social exclusion: The inequality loop. *Telematics and Informatics, 72.* https://doi.org/10.1016/j.tele.2022.101852

[4] Helsper, E. (2021). *The Digital Disconnect: The Social Causes and Consequences of Digital Inequalities.* SAGE. p. 87.

people, particularly in regional and remote areas, are less likely to be able to access quality, affordable, reliable internet and the range of digital devices required to access online services, including via websites and mobile apps. First Nations people in regional and remote areas also have lower levels of Digital Ability compared to other Australians in these areas. It is important to note that gaps are not about First Nations peoples' capacity or interest to engage with digital technologies, but instead represents a failure in public policy and market-led deployment of communications to engage with First Nations communities and their leaders to design and deliver arrangements suitable to the specific context of these communities.

CONNECTIVITY OPTIONS ARE HEAVILY CONSTRAINED FOR SOME GROUPS BECAUSE OF AFFORDABILITY CHALLENGES

The ability to afford a reliable, quality internet connection and the devices necessary for connection is increasingly required for economic participation. However, many Australians who experience social and economic disadvantage face affordability barriers at greater rates to the rest of the population. This includes people with lower levels of education or experiencing unemployment, people with disability, those living in public housing, and First Nations people.

In the ADII, households that would have to pay more than 5% of their household income to access quality, reliable internet are considered to be experiencing 'affordability stress', compromising their capacity to pay for other essential household items. Given the increasing centrality of internet connectivity to basic social and economic participation, those experiencing affordability stress may buy cheaper and less capable services, and devices that limit the quality of connections and opportunities for internet use.

According to the latest ADII, 27.6% of Australians experience affordability stress. Some groups are particularly sensitive to affordability stress, including people with disability (55.1%), those living in public housing (64.1%), and people experiencing unemployment (69.4%).

There is some regional variation in levels of affordability stress (see Figure 4). While 27.7% of Australians nationally experience affordability stress, this number rises to 31.8% in inner regional areas and 36.2% in outer regional areas. The share of Australians who would need to pay more than 10% of their income to afford quality, reliable internet is above the national average in inner regional (5.1%), outer regional (6.0%), and very remote (8.5%) areas. For many of this cohort, a reliable internet connection is beyond their economic reach, and more people in these areas will have to rely on cheaper and less capable services, intermittent service, or a complete lack of connectivity.
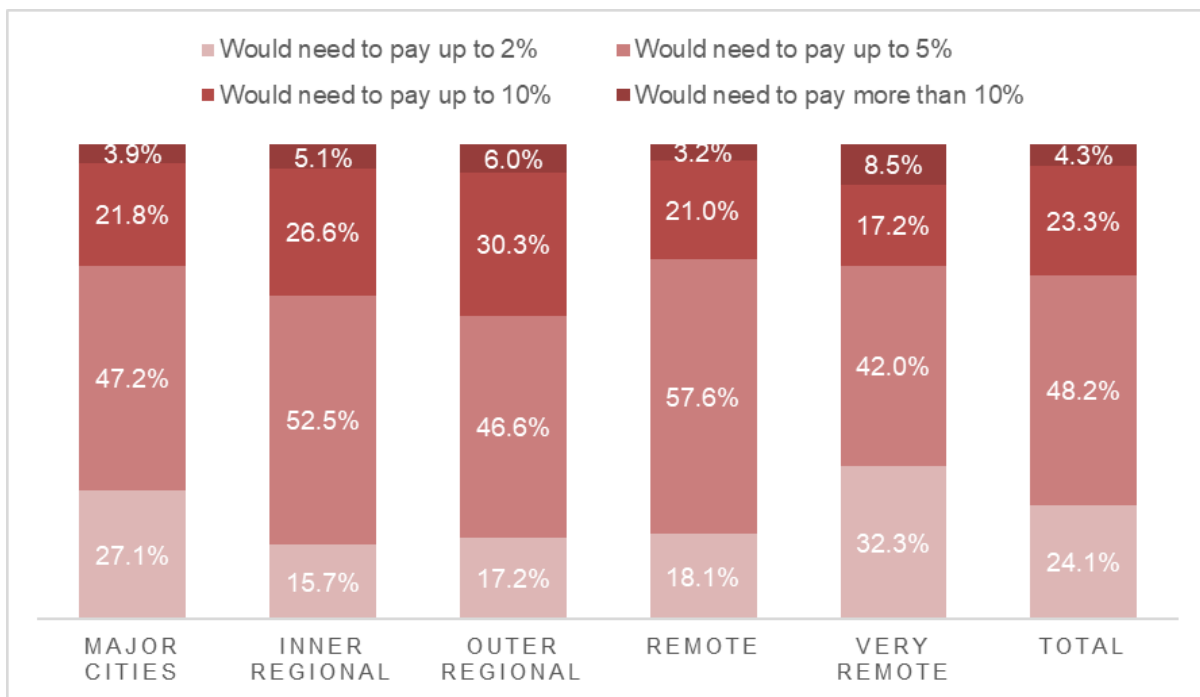
Figure 4: Levels of household income needed to gain access to a bundle of goods and services required for a well-connected household, by remoteness. Source: Australian Internet Usage Survey, 2022.

As part of the Mapping the Digital Gap project, we found that remote First Nation people predominantly use pre-paid mobile services for voice and data. With most remote community members on low and unreliable incomes, 84% of respondents used or shared a mobile device and 94% of these mobiles were pre-paid services. 75% were mobile-only users, compared with 10.5% nationally. There was a very low take-up of the post-paid home broadband services available in remote Australia, such as ADSL (1%) or NBN's Sky Muster satellite service (13%), mainly because of affordability constraints. Pre-paid services do not require credit checks and enable more control over mobile costs. However, there are several disadvantages to pre-paid services:

- Pre-paid data can cost more per gigabyte, meaning people with the lowest incomes pay more for less.
- While post-paid plans in the Australian market offer continuous access to data by throttling the speed after the included amount is used, pre-paid simply turns off access to data, meaning people lose service completely.
- Recharges generally only buy 28 days of active service rather than a calendar month for post-paid (thus paying approximately 8% extra over a year for the same nominal subscription amount).
- Pre-paid also entails the prospect of self-disconnection and reconnection, rather than provider disconnection and reconnection, and therefore sits outside

of regulated hardship protections in the credit management section of the Telecommunications Consumer Protection (TCP) Code.

As a result of these factors, there is a significant difference in data usage by those on pre-paid services. During 2019–2022, pre-paid users downloaded approximately one-third less data than post-paid users on average. While data use among users of post-paid services increased throughout this period, the percentage of data downloaded on pre-paid mobile services remained relatively constant at only 22–24% of total data downloaded.[5]

Affordability constraints often leave people without an internet connection, limiting access to essential communication service. Affordability continues to be a critical barrier to digital inclusion, particularly in remote First Nations communities. Jennifer McFarland from the Central Australian Youth Link Up Service in Alice Springs described communications as an essential service for accessing education, health and welfare services:

> *In remote communities, [communications] should be a service model, not a business model. ... 50% of Aboriginal people in this region between 16 and 64 have no income [due to difficulties with] Centrelink [so they can't] afford to buy connectivity. When you've got to make a choice between getting mobile phone data, or a feed for your kids, it's a bit of a sad situation.*

Likewise, a service provider in Wadeye conveyed the impact of affordability challenges on access to essential services, explaining that "clients [are] not able to ring us if they need assistance, because they can't afford the credit, or they have no phones". Respondents in some Mapping the Digital Gap sites, such as Djarindjin, experienced more acute affordability pressures because of the higher household power costs.

Emerging technologies, such as 5G and LEO satellites have been put forward as potential opportunities for those in regional and remote Australia to gain quality and reliable connectivity. However, those taking up these options (where they are available) are not likely to be on the lowest incomes. For example, Starlink requires the installation of a $599 terminal and a monthly fee of $139 for a residential service.[6] This is out of reach for lowest income households. Meanwhile, people on low incomes continue to rely on intermittent access via prepaid mobile, Wi-Fi services where available, and ageing digital devices. Unless affordable options are available, developments in high-speed communications will remain unevenly distributed along existing lines of

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[5] Australian Competition & Consumer Commission. (2023, December 11). Internet activity report - June 2023. ACCC. https://www.accc.gov.au/by-industry/telecommunications-and-internet/telecommunications-industry-record-keeping-and-reporting-rules/internet-activity-record-keeping-rule/december-2022-report

[6] Prices current as of 31 July 2024. See: https://www.consta.com.au/how-much-starlink-cost-in-australia/

inequality. This situation needs urgent attention. A potential solution might be the introduction of a specific price point for quality service based on the resources of those who are eligible for a Pensioner Concession Card or Health Care Card or receive the maximum level of pension or benefit income.

WHILE WORK IS STARTING ON FIRST NATIONS-LED DIGITAL INCLUSION SOLUTIONS, MORE NEEDS TO BE DONE

The success of digital inclusion strategies hinges on their relevance and acceptance within the communities they aim to serve. While this is true throughout regional, rural, and remote Australia, it is particularly critical in digital inclusion for First Nations people and communities.

Community-driven approaches should be supported and First Nations people need to be central in designing, implementing, and evaluating communications. This involves establishing partnerships with local organisations and ensuring communities have a say in how communications infrastructures are deployed and used on their land. Providing help desk support in local Indigenous languages is essential to ensure that First Nations people can access support in a way that is culturally appropriate and accessible, thus enhancing the usability of digital services. Community needs must be prioritised over attempting to facilitate market conditions incompatible with the needs and realities of communities, particularly where there is unlikely to be a market case for infrastructure deployment, maintenance, and upgrades.

Promising solutions are coming through the deployment of community-controlled Wi-Fi mesh networks. These networks offer a resilient distributed network structure from a central broadband service that can be relatively cheaply deployed. These networks are particularly suitable in First Nations communities, as they can allow community control over operating hours and content accessed. Through state government investment, these networks are currently being rolled out in Western Australian communities. In Kalumburu, a remote First Nations community in the East Kimberley, 128 dwellings have been fitted with a local Wi-Fi repeater and a VoIP phone for affordable home internet and voice communications. This connection is networked from four Sky Muster satellite dishes on the community office.

Despite these positive recent developments, more work still needs to be done, particularly in building community capacity to increasing uptake and sustain programs and services. We welcome the recent federal budget measures around the First Nations Digital Support Hub, a network of digital mentors, and additional funding for community Wi-Fi networks. However, we have been in First Nations communities where their leaders and community organisations have little understanding of what infrastructure is coming, and what this might mean for their community. Community organisations need to be an active voice in conversations about digital inclusion solutions from the very

beginning in order for measures to be sustainable and fit-for-purpose for the specific needs of each community.

CONSISTENT AND RELIABLE CONNECTIONS ARE STILL NOT AVAILABLE, DESPITE BEING THE TOP PRIORITY IN REGIONAL AND REMOTE AUSTRALIA.

Among focus group participants in the 5G and the Future of Public Telecommunications project, network coverage challenges were especially pronounced for our regional participants. These participants explained how availability was a concern not just in outlying areas, but also within large regional centres ("5G can be pretty bad in Bendigo") and when travelling between regional centres ("Even just between Maffra and Sale […] there's still patches where we don't get reception. So, it's not ideal").

For some of regional residents who participated in focus groups, the coverage challenges they face are put into sharp relief when visiting urban centres. One noted that "you go to Melbourne and it's just such a massive difference in connection to what we have here [in regional Australia]".

These connectivity challenges can mean that the performance upgrades promised by the arrival of 5G (such as faster speeds and less delay) have less immediate appeal than strengthened availability. This is reflected in these two participant perspectives:

> I more care about the coverage than the speed of 5G, [and] when I've got it, because it's not that often.

> I think a lot of work needs to be done to expand where [mobile service] is available.

This reflects a common belief among many residents in regional Australia that consistent and reliable connections are critical. However, these basic needs are presently not being met by existing arrangements.

A MIX OF SOLUTIONS – BOTH 'LOW TECH' AND 'HIGH TECH' – CAN DELIVER RELIABLE, AFFORDABLE, AND CONSISTENT CONNECTIONS

While there is a temptation to look at emerging technologies as solutions to close the urban-regional digital divide in Australia, we want to stress that these are not necessarily well-suited to the diverse geographic and cultural landscape of regional and remote Australia. For example, blanket mobile coverage is difficult to sustain, particularly with 5G, which has a shorter range than other (albeit slower) forms of connectivity. While focus group participants in the 5G and the Future of Public Telecommunications project acknowledged living outside metropolitan areas meant a degree of diminished access to telecommunications infrastructure, extended outages and the wait times for repairs were seen as unacceptable:

> Our Telstra line was literally hanging off a paddock fence post. We asked Telstra to fix it, and they're like 'Nope... Just accept that you've got your telephone line hanging off a

fence post'. And, of course, it didn't work. But, yeah, 'You're regional, what do you expect?' was pretty much the response that we got. (Regional respondent, Gippsland).

The stakes for this improvement will only grow higher as extreme weather events are predicted to increase, with those living in rural and regional locations exposed to higher risk of danger from bushfires and flooding:

When I was in the Western District, my husband and I purposely had a Telstra phone and an Optus phone. The idea that pretty much one would have reception, one wouldn't. And when you're in a fire prone area – and we did have fires come through a few years ago, it became a real safety issue that we had to. We're sitting there going, 'Do I have to carry two phones? Or do I have to get a dual SIM phone to carry both networks, to even have reception?' (Regional respondent, Gippsland).

In this context, connectivity can be very brittle, highlighting the need for a mix of technologies that can sustain communication and access to essential information across Australia's diverse and changing social and environmental conditions. In fact, 'low-tech' solutions, such as public phones, UHF radios, and global satellite communicators (e.g. ZOLEO) can offer durable back-ups to mobile and broadband connections. Their continued maintenance needs to be considered in certain settings, particularly in remote Australia.

While the number and usage of payphones (or 'public phones', given the introduction of free voice calls and SMS in 2022) have been in general decline, they remain essential for more vulnerable members of the community. These phones remain particularly crucial in areas with no mobile access. For example, two of the ten communities in the Mapping the Digital Gap project – Yuelamu in central Australia and Gängan homeland in the East Arnhem region – had no mobile access and were reliant on public phones and limited Wi-Fi services for communication and accessing services. While conducting research in these locations, we saw the public phone in regular use throughout the day.

In remote communities, public phones are also essential as they enable people to make calls when other services are inaccessible. In Galiwin'ku in East Arnhem Land (population 2,199 – 92.2% Aboriginal and/or Torres Strait Islander), 12% use the public phone regularly, and 60% sometimes use it. Meanwhile, in Gängan homeland in East Arnhem Land, with around 100 Yolngu residents, 91% use the public phone. Over half of the survey respondents in Tennant Creek (Barkly Region, NT) and Yuelamu (Tanami Desert, NT) sometimes use public telephones.

While they remain essential, public phones should be brought under one cohesive program. Currently, the National Indigenous Australians Agency (NIAA) are funding 301 community Wi-Fi-enabled phones and 240 public phones. These NIAA-funded phones are separate from the 566 public phones that Telstra manage in remote Indigenous communities under the USO contract (with associated repair timeframes in case of

outage). As such, we recommend that the regulation on reliability, quality of service, and repair timeframes be standardised irrespective of which funding contract they come under or which backhaul technology is being used. Meanwhile, despite falling under USO, many public phones were not functional during our visits to remote First Nations communities (see Figure 5), highlighting the pressing need for repair timeframes on universal services to be standardised and regulated.

Figure 5: An out-of-service public phone in the remote First Nations island community of Galiwin'ku in North East Arnhem Land. Photo by Dr Daniel Featherstone, June 2024.

CONCLUSION

This submission has highlighted the persistent digital divide in regional and remote Australia. Despite some improvements, regional and remote Australians continue to exhibit lower digital inclusion scores across Access, Affordability, and Digital Ability compared to the national average and metropolitan areas. The evidence presented underscores the multifaceted nature of digital exclusion, influenced by factors such as age, income, education, housing tenure, disability, and geographic remoteness.

Key findings include:

- The digital divide increases with remoteness, with a significant gap in digital inclusion scores between major cities and very remote areas.
- Within regional Australia, digital inclusion varies widely. Digital exclusion reflects and perpetuates wider social and economic inequalities.
- Affordability remains a critical barrier to digital inclusion, particularly for disadvantaged groups in the community. This includes people on low incomes, people with disabilities, and First Nations communities.
- Consistent and reliable connections are still not available, despite being the top priority in regional and remote Australia.
- LEO satellites could be a critical part of improving telecommunications, particularly in remote Australia, however the cost of these connections may hinder adoption for those on lower incomes.
- First Nations-led digital inclusion solutions are emerging, but more needs to be done to support community-driven approaches.
- A mix of technologies, from 'low-tech' (public phones, Wi-Fi networks, UHF radios, etc.) to 'high-tech' (LEO satellite connections), could deliver reliable, consistent, and affordability connectivity across regional and remote Australia.

In conclusion, addressing the digital divide requires interventions that consider the unique needs and circumstances of diverse communities across regional and remote Australia. We appreciate the opportunity to provide this submission and are available to discuss our findings and recommendations further upon request.

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