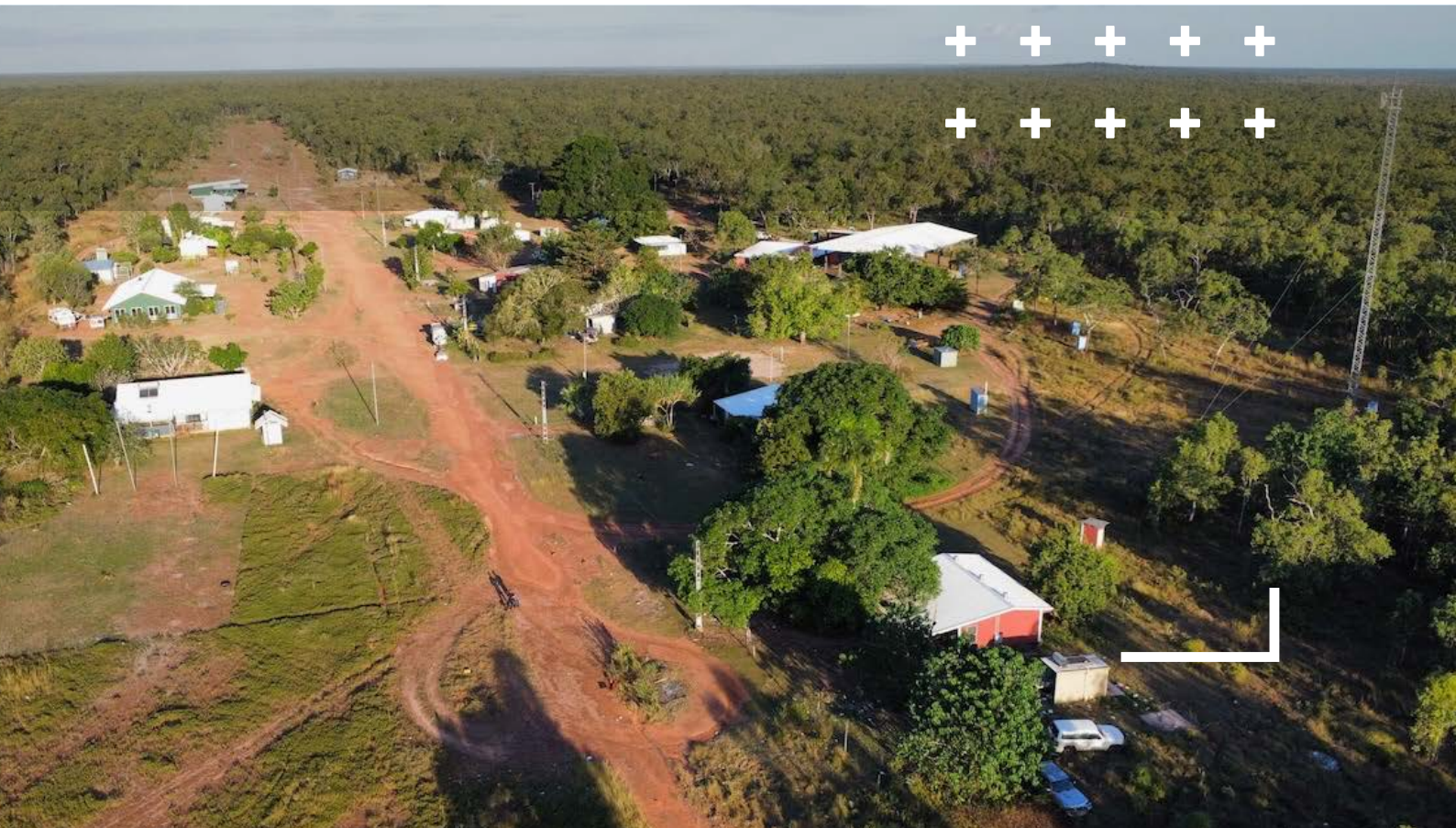
April 2026

MAPPING THE DIGITAL GAP

Measuring Digital Inclusion and Media Use in Remote Aboriginal and Torres Strait Islander Communities 2021-24

Gängan, NT

2026 Community Update Report



Acknowledgement of Country

We respectfully acknowledge the Yolŋu (Dhuwala) people, and pay our respect to their Ancestors and Elders, past and present. We also acknowledge the Traditional Custodians and their Ancestors of the lands and waters across Australia where we work, live and undertake our research.

About the Mapping the Digital Gap Research Project

Mapping the Digital Gap is a 4-year research project working in partnership with local organisations in 12 remote First Nations communities, to generate a detailed account of digital inclusion and uses of digital services including news and media, track changes over time, and inform appropriate local strategies and services enabling informed decision making by remote Aboriginal and Torres Strait Islander people. It is a supplementary project to the Australian Digital Inclusion Index, coordinated within the RMIT University node of the Centre of Excellence for Automated Decision Making and Society in partnership with Telstra.

Contact

Dr Daniel Featherstone
Project Lead

E: mtdg@rmit.edu.au
M: 0437 798 076
W: mappingthedigitalgap.com.au

The 'Mapping the Digital Gap' project received funding support from Telstra and the Australian Research Council Centre of Excellence for Automated Decision-Making and Society (CE200100005).

Suggested citation: Featherstone, D, Ormond-Parker, L, Hegarty, K, Hawkins, L, Parkinson, S, Bawden, S, Thomas, J, Louie, YM, Ganambarr, D (2026) *Mapping the Digital Gap: Gäŋgaŋ NT 2026 Community Update Report*. ARC Centre of Excellence for Automated Decision Making and Society: RMIT University, Melbourne. DOI:

Acknowledgements

We would like to thank the following key contributors to this research:

Community Research Partner
Laynhapuy Homelands Aboriginal Corporation
laynhapuy.com.au

Community Co-Researchers
Djamika Ganambarr, Trina Nunggumajbarr, Guruwuy Ganambarr (2022)

Research Participants and Stakeholders
Thank you to all the community residents and local agency staff who generously participated in the surveys and interviews, providing the personal experience to make this research meaningful. We conducted 23 surveys with First Nations community residents in 2024 (20 in 2023, 31 in 2022). During our three research visits, we undertook 22 interviews with community leaders, residents and the following stakeholder agencies:

- Laynhapuy Homelands Aboriginal Corporation
- Laynhapuy Homelands School
- Laynhapuy Health / Stores
- Yirralka Rangers
- Mob Strong Debt Help

Gäŋgaŋ research trips dates
10-12 June 2024; 3–9 June 2023; 23–27 May 2022

RMIT University researchers
Assoc. Prof. Daniel Featherstone
Prof. Lyndon Ormond-Parker
Dr Kieran Hegarty

Design/Research support: Leah Hawkins
Photography: Daniel Featherstone
Copy editing: Alison Barton
Cover photo: Aerial image of Gäŋgaŋ community

CONTENTS

01. EXECUTIVE SUMMARY

This report outlines updated findings from our third and final research visit to Gäŋgaŋ Homeland in June 2024, as well as some updates to March 2026 collected remotely via email, follow-up interviews and supplied data.

Gäŋgaŋ is a remote inland riverside community located in the East Arnhem region of the Northern Territory (NT). Gäŋgaŋ is about 190 km south of the regional centre of Nhulunbuy, 206 km by road to Yirrkala and 900 km to Darwin via the central Arnhem Highway. The traditional owners are the Dhaḻwaŋu people.

Gäŋgaŋ is one of the largest of the 30 Laynhapuy homelands in East Arnhem Land, and one of the first established by the traditional owners during the homelands movement from 1972 to provide a sustainable and independent future for their children on their ancestral country. Like other homelands in the East Arnhem region, Gäŋgaŋ has strong local governance.

Gäŋgaŋ has 13 residential dwellings and a permanent population of about 100 people (82 according to ABS 2021), all identifying as Yolŋu (Aboriginal people) and speaking Yolŋu Matha dialects, primarily Dhay'yi. Dhuwal or Dhuwaya dialects are also spoken.

Our third research visit to Gäŋgaŋ was undertaken 10-12 June 2024. The RMIT University team worked with community research partner, Laynhapuy Homelands Aboriginal Corporation, and co-researcher, Djamika Ganambarr. The team had a productive week, undertaking 20 surveys with residents and conducting seven interviews with agencies and community leaders. We thank all residents and agency staff who participated in the research and made us feel very welcome.

Building on the 2023 Gäŋgaŋ Community Update Report, this 2026 Update Report is intended to assist local and regional agencies, leaders and residents to better understand barriers to digital inclusion, develop local strategies to address these barriers, and support planning and partnerships with government and industry stakeholders.

This report presents research findings from our three visits, compares survey results from 2022 to 2024, renews analysis with 2024 findings, and quotes and outlines changes in communications and media services and usage. The report also presents 2025 Australian Digital Inclusion Index scores for Gäŋgaŋ relative to national averages.

The proposed Digital Inclusion Plan has been updated based on community input and progress to date, as well as planned activities.

This report is part of our commitment to Indigenous data sovereignty, providing data and research findings to the participating communities to use for their own analysis, planning and advocacy.

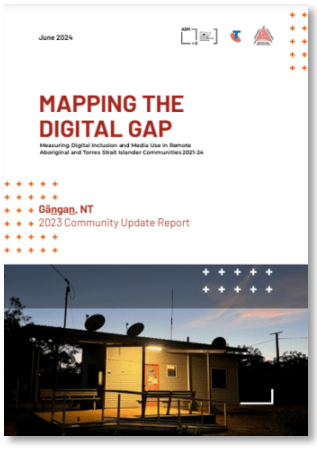
206km
Nearest major regional centre (Yirrkala)

100
Population (Laynhapuy Homelands Aboriginal Corporation, survey data)

100%
Aboriginal and/or Torres Strait Islanders (LHAC survey data)

23
surveys in 2024 (20 in 2023, 31 in 2022)

7
interviews conducted in 2024 (7 in 2023; 8 in 2022)



Gäŋgaŋ at a Glance

Distance	**926 km**	east of Darwin
Dwellings	**13**	occupied dwellings
	7.8	people per ATSI household
Language	**100%**	ATSI people who speak an Aboriginal language
Income	**$282**	median ATSI personal income (Laynhapuy - Gumatj homelands)

Figure 1: Aerial photo of Gäŋgaŋ community

Key Survey Findings

The figure below provides a summary of weighted 2024 survey results. Please note that due to low sample sizes (23 surveys in 2024, 31 in 2022), results may vary widely and not represent all residents.

ACCESS

87% own or share a mobile phone (87% in 2022)

100% of mobile phone users have pre-paid services (100% in 2022)

100% use the public phone for calls (90% in 2022)

13% use a fixed line phone at home (30% in 2022)

0% Have nbn Sky Muster service at home (0% in 2022)

10% Have computer or laptop access (22% in 2022)

AFFORDABILITY

$266 avg monthly household prepaid mobile expenditure ($159 / month in 2022)

$0 avg monthly household expenditure for homes with fixed internet ($0 in 2022)

96% compromise on internet speed or quality due to affordability (73% in 2022)

55% often or always cut back on essential household costs to afford internet (43% in 2022)

DIGITAL ABILITY

86% used the Internet in the past week (58% in 2022)

12% never use the internet (10% in 2022)

84% of regular users use online banking (76% in 2022)

96% of regular users use social media to connect with family/ friends (78% in 2022)

38% of regular users can complete online forms (24% in 2022)

MEDIA USE

13% Listen to Yolŋu Radio weekly (15% in 2022)

100% VAST satellite TV not working (100% in 2022)

77% watch YouTube daily (43% in 2022); 20% streaming services

100% get daily news direct and in-person; Facebook 23%; Yolŋu Radio 18%

100% get emergency information direct and in-person, Yolŋu Radio 48%; Facebook 23%

Full weighted 2022-2024 survey results are available in Appendix 1. An updated audit of demographics and communications and media services available in Gäŋgaŋ is provided in Appendix 2.

What is Digital Inclusion? How is it measured?

Digital inclusion (DI) refers to equitable and reliable access to and use of information and communication technologies for participation in social and economic life.

The Australian Digital Inclusion Index (ADII) is an annual national survey that measures three dimensions of digital inclusion—Access, Affordability and Digital Ability. ADII scores range from 0 to 100. The higher the score, the greater level of digital inclusion. ADII scores are relative, enabling comparisons across demographic groups and geographic areas over time.

The Mapping the Digital Gap project uses an amended version of the ADII survey to collect digital inclusion data. This enables us to compare results for the participating remote communities, towns and homelands with the national results collected by the ADII, and to track changes in digital inclusion between and within these sites.

In 2021, Closing the Gap Outcome 17 was introduced for *access to information and services enabling participation in informed decision making regarding their own lives*. Target 17 includes a target of equal levels of digital inclusion for Aboriginal and Torres Strait Islander people by 2026.

Combined with ADII data collection, the Mapping the Digital Gap project is helping to track progress against Target 17 for remote, regional and urban First Nations people for the first time.

DIGITAL INCLUSION

ACCESS

- Reliable access to phone and internet
- Access to IT devices and/or facilities
- Access to trusted media, news and information

AFFORDABILITY

- Affordable phone and internet services
- Affordable devices

DIGITAL ABILITY

- Ability to use digital devices, software and online services
- Awareness of cybersafety, scams, and viruses

ADII First Nations Data Dashboard

The First Nations dashboard on the ADII website provides interactive charts and community-specific results for the ten research sites in 2024. The Mapping the Digital Gap 2025 Outcomes Report provides summary findings across all sites.

View dashboard using the QR code below:

Figure 2: Mapping the Digital Gap results are on the Remote Communities page within the new First Nations dashboard on the ADII website

ADII 2025 Report Findings

The 2025 ADII found a digital gap of 10.5 points for First Nations people compared with other Australians. This gap widened substantially for people living in remote (16.5) and very remote Australia (22.8), where contributing factors include limited access to digital infrastructure and services, high internet costs relative to income, climate, geography and cultural context.

Based on our 2024 survey results, the average ADII score for Gäŋgaŋ was 48.5, a gap of 25.4 points below the national average for non-First Nations Australians.

The key element of this gap was the Access dimension score of 30.4, which was a huge 46.8 points below the non-First Nations average. There was also a very large gap for Digital Ability (-28.9). The apparent lack of a gap in Affordability (-0.3) is due to large household sizes enlarging household income relative to expenditure. This does not reflect lived reality in Gäŋgaŋ where affordability is a major concern. These gaps vary widely for different demographic groups as detailed below.

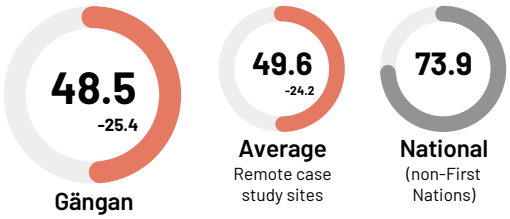


Figure 3: Gäŋgaŋ ADII scores compared to the national non-First Nations average and the average across 11 Mapping the Digital Gap research sites, based on 2024 surveys.

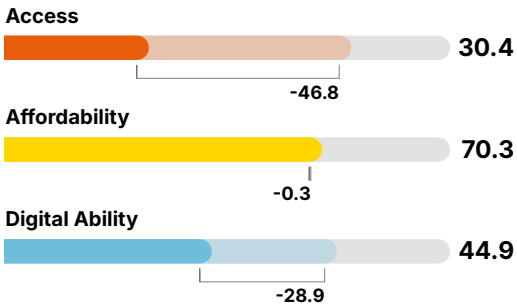


Figure 4: 2025 ADII scores for Gäŋgaŋ, with gap against national non-First Nations averages.

Demographic gaps in Gäŋgaŋ

The 2024 survey results found significant variations in digital inclusion between various demographic groups. These results demonstrate that targeted digital support activities would benefit these demographic groups in Gäŋgaŋ.*

Education gap

8.4

Those who did not complete secondary school had an average digital inclusion score of 40.7 compared to 49.1 for those who completed Year 12. The gap was primarily in Digital Ability (26.5 compared to 42.4), with Access also a factor (25.3 compared to 34.5). Those who had done further training had a DI score of 53.8.

Age gap

29.1

Those aged 55 and over had an average digital inclusion score of 24.1, compared with a score of 53.2 for those aged 18-34 years. The gap was primarily due to a zero score for Digital Ability for Elders (compared with 53.4) and low levels of Access (3.8 compared with 33.2).

Employment gap

13.2

The average digital inclusion score for people who were not in the labour force was 37.9 compared to 51.1 for those employed (full-time or part-time). The gap was greatest in the areas of Digital Ability (25.6 compared with 50.2) and Access (18.2 compared with 33.6). The DI score for those unemployed was 48.6.

Gender gap

8.3

Women had a lower average digital inclusion score than men (43.2 compared with 51.5). This gap was due to significantly higher levels of Digital Ability among men (50.0 compared with 31.1), with Access scores also lower for women (25.8 compared with 34.0). Note: This is a reversed trend to 2022, pointing to the impact of sampling variations.

Disability gap

24.2

People with disability or long-term health conditions had average digital inclusion scores of 25.4 compared to 49.6 for those without disability. The gap was primarily in the areas of Digital Ability (5.4 compared with 43.8) and Access (4.2 compared with 32.7).

* Note that low sample sizes may play a significant factor in some of these results.

02. INTRODUCTION

The Mapping the Digital Gap project tracks changes in digital inclusion and media and communications use in each research site over three years. This report provides an update from our third visit to Gäŋgaŋ in June 2024, comparing the survey and interview results to our findings from the first visits in May 2022 and June 2023. It also provides updates to February 2026. The report outlines progress on the suggested strategies for a local Digital Inclusion Plan and updates the plan with any newly identified strategies.

2022 Findings

Based on 2022 surveys, the ADII score for Gäŋgaŋ was the lowest of the 10 sites we visited, primarily due to very limited communications access. Gäŋgaŋ community was largely offline, with no mobile service and no internet access in any of the 13 dwellings. Residents relied primarily on the Telstra public phone near the school or, during opening hours, the phone at the shop. A free public Wi-Fi hotspot at the shop, provided by Laynhapuy Health, enabled internet access from 2-8pm during the week, with longer hours on weekends.

Despite the lack of mobile coverage, our survey found high levels of mobile phone ownership and expenditure on pre-paid services. Residents of all ages used mobile phones for internet access and Wi-Fi calling via the free Wi-Fi hotspot or when visiting regional centre, Nhulunbuy, or large communities such as Gapuwiyak or Yirrkala.

During our 2022 visit, there was no household take-up of Sky Muster satellite services, the only household internet option at the time. The only satellite internet services in Gäŋgaŋ were at the school, clinic and shop. Sky Muster was installed at the ranger base after our visit. The NT Schools' STARS satellite system (installed about ten years earlier) was described as highly congested and slow, but enabled remote meetings, lessons and a regional assembly during the six-week COVID-19 lockdown in early 2022. The Sky Muster service at the clinic had insufficient speed to operate the high-end telehealth equipment installed in the clinic, but enabled basic telehealth via Facetime on mobile phones. Similarly, visiting health staff used an offline version of the Communicare patient records database rather than the cloud-based version.

Figure 5: Research team in 2022: Co-researcher Djamika Ganambarr, Lyndon Ormond-Parker, Co-researcher Guruwuy Ganambarr, Senior Ranger Yinimala Gumana, and Daniel Featherstone

In an effort to develop a fit-for-purpose satellite broadband solution for homelands without mobile services, the NT Government (NTG) developed the Telecommunications in Remote Aboriginal Communities (TRAC) project for four small remote communities (Gäŋgaŋ and Wandawuy in the Laynhapuy homelands, and Arawerr and Mungkarta in the Barkly region). Regional Connectivity Program (RCP) co-investment was approved in 2021. Field Solutions Group was to deliver the project, which involved installing a Wi-Fi mesh network direct to each household with a pay-as-you-go system for data use.[1] The community was eagerly awaiting the service during our visit and outlined their preferences as to how it should operate (outlined as a Case Study in our 2022 report, updated in Section 5 of this report).

[1] https://www.infrastructure.gov.au/department/media/publications/round-1-regional-connectivity-program-funded-projects.

This included a request for content filtering, a nightly curfew on internet access and local switch-off capability.

> "It's crucial that Yolŋu that live out here have access to all the things that other people in town have access to. They really need access to internet banking, news, reporting to Centrelink and all those things. But it has to be done in a really careful way [to avoid] having a negative impact upon the way of life out here, which [is] really special. That's why they live here, and it's crucial that we maintain that."
>
> - Rachel Godley, LHAC Youth Program Manager, 2022

Other projects were being planned to address broadband availability and reliability issues across the East Arnhem region, including an upgrade of the the Arnhem Fibre Network from Jabiru to Nhulunbuy planned. NTG also commissioned a Remote Small Cells Program with Telstra to provide 4G micro-cell mobile services in 20 small communities using low earth orbit (LEO) satellite backhaul. Site selection was underway with three potential Laynhapuy homelands sites (Birany Birany, Donydji and Garrthalala).

Our survey found that Gäṉgaṉ residents had low levels of digital ability, with an average ADII score of 28.9, 36.0 points below the national average. This is primarily due to having very limited internet access and being mobile-only users. Digital literacy tends to be lowest among people over 50 years of age, people with disability, and those with limited English literacy. However, our Gäṉgaṉ survey found that most respondents had used the internet in the last three months (82%), with primary usage being for internet banking, social media, online entertainment and games. With little digital support available in Gäṉgaṉ, there was demand for community access computers as well as mentor support to help use online services, select mobile devices and plans, activate SIM cards, develop digital skills and build awareness of scams and cyber-safety issues. There was also demand for workplace digital skills training.

> "I would like to learn more about computer. But at the moment we don't have an office to sit down and work. Without having a computer in this community [we can't prepare for the broadband coming] here at Gäṉgaṉ."
>
> - Billy Gumana, CDP Supervisor/Traditional Owner, 2022

With the average personal income in Gäṉgaṉ being only $287 per week (ABS 2021) and high costs for food, fuel and other household needs, affordability is a major issue. **Our survey found households spent an average of $159/month for pre-paid mobile, despite only having mobile access at external sites.** A critical element of a broadband solution is that data costs be affordable to avoid 'digital poverty'.

> "Having access to communication now is pretty much tied to your standard of living ... I think people just expect it now."
>
> - Kerry Legge, LHAC CEO, 2022

We also found that Gäṉgaṉ residents had very limited access to news or information, with the only freely available media being the popular Yolŋu Radio service, delivered primarily in Yolŋu Matha language. None of the 13 households had VAST direct-to-home satellite television services working, with calls for VAST TV services to be replaced. Residents currently have very limited access to news, information and entertainment, with young people using Wi-Fi to access streaming services and games online. This is likely to place high data demand on a future broadband solution, as it will become the primary delivery mode for these services.

2023 Findings

When we returned in 2023, we found that there had been no progress on the broadband solution planned for Gäṉgaṉ (and the other three sites), with disappointment among residents about the lack of consultation about the project. We subsequently heard that the project was not going ahead after efforts by Field Solutions Group to vary the scope of the RCP funding.

Otherwise, we found there had been very little change in the level of access to communications services, with the public phone and public Wi-Fi still the primary means of access. There was still no household uptake of satellite broadband, no residential phone or computer access, and no TV services working. The only change in broadband access among the service providers was that Laynhapuy Health had installed a Starlink dish on the Gäṉgaṉ shop to improve reliability for EFTPOS and online ordering. However, this was not being used for public Wi-Fi access due to limitations in configuring a separate shared-use network.

Our survey found that the number of respondents who had used the internet in the last six months had increased from 82% to 96%, with use of online streaming and entertainment the primary increase in usage (up from 91% to 100%) while use of online banking and government services had reduced (note: low samples impact on these variations). Affordability challenges had also increased, with our survey finding average expenditure on prepaid mobile data had increased from $159/month to $201/month.

Figure 6: Lyndon and Daniel with Laynhapuy Homelands AC CEO Kerry Legge, Traditional Owner Marrpalawuy Marika and co-researcher Djamika Ganambarr

All service providers working in the region, including Laynhapuy Homelands AC, Laynhapuy Health and Laynhapuy School, reported challenges in delivering services and communicating with clients because of limited connectivity options in Gäṉgaṉ and other homelands. The lack of access to online services and IT support impacts on Centrelink reporting, banking services, NAPLAN tests, justice matters and more. While there is caution about potential disruption to the peace and cultural governance within homelands by introducing mobile services which cannot be switched off, there is demand by agencies and residents for appropriate and reliable broadband access, including for emergency communications.

Nevertheless, there were clear calls for a change management plan to align with introduction of services to ensure awareness and preparation by homelands and to limit potential negative impacts. We heard significant discussion about risks witnessed in other locations, including cyber-safety issues, scams and children staying up at night and not attending school. There were calls for more on-site training and support to improve digital inclusion, however more work is needed to source funding and determine appropriate delivery models.

> "We want to be [connected] because Gängan is part of the Northern Territory and also part of Australia. [We want] to be able to communicate with other friends, to be able to see that our children can do the things that they want to do. And that's why it's important for this research to come and sit with us and we can learn from each other."
>
> - Marrpalawuy Marika, Gäṉgaṉ traditional owner, 2023

2024 Findings

Across our three visits to Gäŋgaŋ from 2022-24, service providers and homeland leaders consistently described significant challenges of very limited communications services, with residents still reliant on a single Telstra public phone and a time-limited Wi-Fi hotspot and phone at the local shop. The limited and often poor and unreliable connectivity, combined with the distance from the regional centre, Nhulunbuy, create ongoing challenges for safety, access to critical services and daily communications.

During our 2024 visit, there was no improvement in access to communications or media services. In fact, the community Wi-Fi hotspot at the shop was not working at the time of our visit, leaving no public internet access options for residents and increased reliance on the clinic Wi-Fi and public phone. The clinic had been upgraded to Starlink satellite services, with plans for improved telehealth access. However, further work was needed to improve digital inclusion in Gäŋgaŋ, with ongoing lack of computer access facilities and the school yet to have its satellite system upgraded.

Despite these limited opportunities, ADII results in 2024 had improved slightly since 2022, with the average Access score up from 25.3 to 30.4 and Digital Ability up from 28.9 to 44.9. The Affordability score was 70.3, which was relatively high, although this was not comparable to 2022 results due to a change in the method for measuring Affordability. As a result, the overall ADII score was 48.5, slightly below the average of 49.6 across the 11 Mapping the Digital Gap research sites in 2024. While well below the national First Nations average (63.4) and non-First Nations average (73.9), this shows that a strong level of resourcefulness and self-determination by Gäŋgaŋ residents to maintain access to online services and develop the skills needed despite the lack of connectivity.

With most services in the community (shop, school, clinic, ranger base) managed locally by Yolŋu residents and supported by visiting regional staff, Gäŋgaŋ remained strongly autonomous with cultural governance. Community leaders consistently called for governance to also apply to communications services, to limit any impact on children's school attendance and language and cultural continuity.

- "We need to keep our culture strong. Our language is everything. We don't want to change it in the future, [so we want to] make two cultures work. We are on two cultures now." (Yinimala Gumana, Community leader, Ranger Coordinator, 2024)

While there was frustration in the community at the lack of improved communications, change was coming. In 2024, nbn received $20million funding from the Australian Government to roll out a First Nations Community Wi-Fi program to 23 remote communities. Given the failure of the previous Wi-Fi project, Gäŋgaŋ and Wandawuy were selected be included in the rollout of community-wide free Wi-Fi mesh networks. Community members were looking forward to receiving the network and leaders outlined their updated requirements for the service. While providing outdoor access only, this network allowed community control over access hours and content filtering and would significantly improve voice and broadband communications access for Gäŋgaŋ households. The network was installed in October 2024, after our final visit, so we have not seen the impact first-hand.

Figure 7: Daniel, Lyndon and Kieran Hegarty with community leader and Yirralka Ranger Coordinator Yinimala Gumana and co-researcher Djamika Ganambarr

Changes since 2024

The nbn community Wi-Fi network was installed in Gäŋgaŋ on 12 October 2024. This mesh network provides outdoor access to all 13 residential houses and indoor access in the clinic (hub site). Local leaders opted to set night-time curfews on usage to support community wellbeing, initially between 8.45am and 6.30pm , however this has since been extended.

According to nbn, the service is being consistently used, with an average 1.5TB of monthly data usage since August 2025 but spikes in data usage occurring when events bring visitors to community. The Wi-Fi has reportedly enabled Gäŋgaŋ residents to participate in key events such as the LHAC AGM without needing to travel to Nhulunbuy, demonstrating the benefits of reliable connectivity. The Wi-Fi network has helped to address high demand for broadband access at dwellings, while also enabling voice calls over Wi-Fi.

The feedback from residents has been mostly positive. However we have heard concerns about network reliability and wet season impacts, as well as lack of indoor access being a limitation during cyclones, wet weather and high or low temperatures. We have provided further information about planning and community governance over the Wi-Fi network, along with further feedback, in a case study in section 5.

This update report also includes updates about communications across the region, as well as a new Case Study (section 6) specific to the communication needs and changes for the Laynhapuy Homelands School.

Updates to Proposed Digital Inclusion Plan

Telecommunications in remote communities rely on finding telco providers who will deliver services that meet community needs. Due to the remote locations and small populations, these projects typically require external funding from federal, state and/or local governments. Decisions and timeframes are often determined by funding programs and industry players. This can leave residents and agencies feeling disempowered, with limited input to ensure the technology and services are fit for purpose.

The proposed digital inclusion plan in Section 6 is intended as a tool to assist communities to determine and communicate local needs and priorities. This updated plan builds on the proposed Digital Inclusion Plan in the 2022 and 2023 reports, including new strategies proposed by residents and stakeholders during our 2024 visit, as well as a summary of progress to date and planned activities for each item listed.

Figure 8: Co-researcher Djamika Ganambarr doing a survey with Gawumala Gumana at Yirralka Ranger base in Gäŋgaŋ

We recognise the challenges in implementing a local digital inclusion plan, with multiple agencies involved in delivering media, communications and digital programs. However, the Laynhapuy Homelands have collectively advocated for improved services over several years. The draft plan is intended to support planning and advocacy for improved media and communication services and digital inclusion activities in Gäŋgaŋ.

While our research work with Gäŋgaŋ community is now complete, the Mapping the Digital Gap team can provide advice on future digital inclusion initiatives upon request.

03. MEDIA & COMMUNICATIONS IN GĀNGAN

Existing Telecommunications Services

Backhaul to community
Gäŋgaŋ currently only has telephony backhaul via the Higher Capacity Radio Concentrator (HCRC) microwave network. This is due for replacement by 16 November 2027.[2] All internet services are delivered via satellite.

Landlines
There is a basic copper network providing phone services only (not ADSL) to the public phone, school, clinic, visiting officers' quarters, ranger base and community shop, and one residence.

Mobile coverage
There is no mobile coverage in Gäŋgaŋ. The nearest service is available in Gapuwiyak, 75 km north.

Mobile phones and recharge sales
The Gäŋgaŋ shop does not stock mobile phones or Telstra recharge vouchers. Residents can only purchase these online or in Nhulunbuy or large communities such as Gapuwiyak.

Public phones
There are two free public phones in Gäŋgaŋ. The Telstra public phone, located near the school, will be replaced by a new satellite-delivered Wi-Fi enabled phones by November 2027. Gäŋgaŋ shop also has a public-use phone during opening hours.

Wi-Fi hotspots
As well as the community Wi-Fi network (below), Laynhapuy Health provide a free public Wi-Fi hotspot at Gäŋgaŋ shop from 2-8pm during the week, with longer hours on weekends.

Community Wi-Fi network
An nbn community-wide Wi-Fi network, installed by Australian Private Networks (APN), was activated on 12 October 2024. This provides external access only, with indoor access in the clinic (the hub site for the network). The operation hours have been set to 8.45am to 6.30pm based on community governance, with content filter in place. Funding is for five years.

nbn services
Under nbn zoning, all East Arnhem communities and homelands (outside of Nhulunbuy) are zoned as satellite delivery only. (Note: Yirrkala had nbn fixed line services installed in 2023). In Gäŋgaŋ, the clinic, shop and ranger base have Sky Muster satellite services, but no households.

Starlink services
Laynhapuy Health installed a Starlink service at the Gäŋgaŋ shop in 2023 and the clinic in 2024, as part of a plan to upgrade all shops and clinics across the region to Starlink. There were no residential Starlink services.

[2] https://www.telstra.com.au/exchange/can-radio--when-technology-reaches-the-end-of-the-road-

Telemetry
There is no known use of telemetry on the generator, electricity grid or water supply facilities in Gäṉgaṉ.

HF/UHF Radio
Yirralka Rangers use UHF radios for communication between rangers and vehicles while undertaking land management work. VHF is used by aircraft and emergency services including Royal Flying Doctor Service. We did not identify any other use of VHF or UHF radio by other service providers in the region.

Media Services

Radio
Yolŋu Radio is the only radio service available in Gäṉgaṉ.

TV
Free-to-air television services are only available via Viewer Access Satellite Television (VAST) direct-to-home equipment. However, none of the 13 Gäṉgaṉ households had VAST services working.

Newspaper
There are no newspapers available in Gäṉgaṉ.

Local and regional news
Being a small homeland, local news about upcoming events, meetings, and visiting agencies is primarily shared via word of mouth, the noticeboard at the Gäṉgaṉ shop and the shopkeeper's megaphone. Regional news is shared via Yolŋu radio, and LHAC and East Arnhem Regional Council Facebook pages.

Access and Support Facilities

Community access facilities
There are no community access computers in Gäṉgaṉ.

IT support
IT support is coordinated regionally by LHAC, Laynhapuy Health (undertaken in-house where possible) and the Laynhapuy School though the NTG. Contractors travel from Nhulunbuy or Darwin.

See the full Community Audit in Appendix 2 for more details.

04. KEY FINDINGS FROM DATA ANALYSIS

This section provides key findings from the 20 interviews conducted from 2022 to 2024 with community leaders and stakeholders, as well as observational data and survey results. The analysis builds upon the 2022 and 2023 Community outcome reports, with new topics labelled '2024' after the heading.

As our final visit to Gäṉgaṉ was in June 2024, the interviews in this section were mostly undertaken prior to the rollout of the Wi-Fi network in October 2024. Updates are included where available, however some issues and views in this section are now historic. While Gäṉgaṉ has had improvements, some early comments are retained in this section as they reflect the ongoing experience for many remote communities and homelands still awaiting appropriate solutions. Section 5 focuses on the introduction of the Wi-Fi network and recent feedback on its use and impact.

See Appendix 1 for the full set of weighted survey results from 2022 to 2024. These results have been cleaned and weighted against ABS data so differ slightly from raw survey results published in the 2023 Outcomes Report and 2022 report.

Communications Access

History of communications access and upgrades in Gäṉgaṉ

Traditional Owner Yinimala Gumana outlined the traditional modes of communication before colonisation.

> "[In early times when] people were … moving around this country … especially for ceremonies, they [would] send someone to go out and talk to those people, and also light the grass to make a big smoke, so [they knew that] people is coming from other places. That's how they communicate … from the very beginning, before the colonisation started."
>
> - Yinimala Gumana, Community leader/Ranger Coordinator, 2022

When homelands were being established in the 1970s, VHF radio became a primary communication tool.

- "Then [VHF] radios system were coming in [and] they used that [to] communicate to other homelands and talk to leaders and family. [In] every village, they have been using the radio to communicate, [and they would] carry their own radio wherever they go." (Yinimala Gumana, as above, 2022)
- "We used to hear from different homelands [on VHF radio] saying 'how are you? How's the family?' [They] let us know what is happening in their homeland. And maybe getting us to visit them or getting them to come and visit us. [That was] in the past with the outstation radio, which [was] good. I don't know why they stop that one." (Billy Gumana, Community leader/CDP Supervisor, 2024)

Telecom introduced public phones in the 1990s, with backhaul via a microwave repeater network.[3]

- "Laynha [then] helped [to get] Telecom to come and to build a telephone [system. They built] the tower first [to] connect it to other wires [and a] public telephone … I was kid. [I helped] the people make a trench [to run] that telephone cable from the tower to the payphone there." (Yinimala Gumana, as above, 2022)

[3] The original Digital Radio Concentrator microwave repeater system (DRCS) was upgraded to Higher Capacity Radio Concentrator (HCRC) in the early 2000s, enabling both phone calls and low bandwidth applications (e.g. fax and EFTPOS).

Technology options have changed significantly today.

- **"**Today, we [use] different technologies … We can use phone [or] the internet [to] send a email or check message, whatever. [These days] we're all [using mobile] phones connecting to the internet." (Yinimala Gumana, as above, 2022)
- "[The kids are] the one learning [about] technology … too quick. Back in early days, we didn't see any Wi-Fi [or] Facebook, TikTok … These days they got so many things to do … we can't stop them. They're addicted to their technology and all that stuff." (Djamika Ganambarr, Youth worker/Co-researcher, 2023)

Figure 9: The HCRC tower for Telstra phone services

With no mobile coverage in Gäṉgaṉ, voice calls are only available via the public phone or Wi-Fi

Beyond Nhulunbuy and the major communities in the region—Yirrkala and Gapuwiyak—there is very limited communications access in much of the East Arnhem region. Most of the 30 Laynhapuy homelands currently have basic telephony delivered via Higher Capacity Radio Concentrator (HCRC) microwave or satellite backhaul. Gäṉgaṉ currently has HCRC backhaul supplying limited phone services, including to the public phone, school, clinic and store, via a copper network from a small exchange by the tower near the school. There is no mobile coverage in Gäṉgaṉ, with the nearest accessible coverage being in Gapuwiyak about 75 km to the north by road. With only one house having a phone, voice call options in Gäṉgaṉ are limited to:

- Public phones: free calls can be made on the Telstra public phone near the school. The shop also has a phone for free public use during opening hours.
- Wi-Fi call: there is active use of Wi-Fi calling (e.g. Messenger, WhatsApp) and texting from mobile phones via the community Wi-Fi network (and the shop Wi-Fi hotspot from 2pm-8pm daily).

Public phones are the primary means of calling for most Gäṉgaṉ residents, with 100% of respondents to our 2024 survey reporting use of the Telstra public phone or public phone at the shop. 66% also reported using workplace phones in the school, clinic, or shop.

Calls via the public phone have been free since 2020, however the ageing HCRC service has reduced call quality.

- '"During COVID they they made all the payphones free and then ever since COVID the payphones have just remained free. They're pretty good overall, but sometimes out of action, sometimes really crackly [and] you can barely hear what someone's saying."

When the shop is closed, all residents rely on the single Telstra public phone. With 100 residents in Gäṉgaṉ, demand creates a challenge.

Figure 10: The public phone is the only means of calls other than Wi-Fi

- "[The public phone is a] big problem. [We have to] wait too long to use the phone because … there's [always] someone using that phone." (Djamika Ganambarr, Co-researcher/Youth Worker, 2024)

While the public phone in Gäṉgaṉ was reported as being mostly reliable, there were requests for another public phone to improve access.

- "Even when there's a cyclone coming or something, we were able to use that [phone]. The best access is to keep the public phone so we can contact [in case of emergency. But we need] another telephone because [the only phone] is right in the middle [and people] can't hear it properly [and] have to walk all the way to the public phone. And when emergency happens, [like] a child being bitten by a snake or a crocodile, it's best that the phone call can be made from that end." (Marrpalawuy Marika, Gäŋgaŋ Traditional Owner, 2023)

With no household phone access, it is difficult for agency staff to contact people via the public phone.

- "[You sometimes] ring a pay phone ten times hoping that somebody would pick up. And if someone picks up, hoping that person will go and find somebody [and they will come] to the pay phone. [That communication style is] an interesting part of living and working remote." (Rhys Yerbury, Stores Coordinator, Laynhapuy Health, 2023)

There were also calls for Elders to have reliable access to a phone close to home.

- "We need [expanded] Wi-Fi so old people can use phone [at home] instead of going to payphone and [having to] wait too long." (Djamika Ganambarr, as above, 2024)

Since the installation of the nbn Wi-Fi network in November 2024, calls can now be made via mobile devices across the community during Wi-Fi hours, making voice communications much more accessible and reliable. This is described in more detail in section 5.

In February 2026, Telstra announced that the HCRC microwave network, which currently delivers phone services to most Laynhapuy homelands, is scheduled to be shut down by 16 November 2027.[4] Due to ageing infrastructure, Telstra will be providing alternative means of delivering voice and ADSL services, likely via low earth orbit satellite. This upgrade will include replacement of all existing public phones in remote communities with new satellite-enabled phones providing Wi-Fi services.

Improved broadband access is needed throughout the Laynhapuy region

Beyond Gäŋgaŋ and Wandawuy, which now have Wi-Fi networks, and Wi-Fi hotspots provided at larger sites with shops, there is limited broadband connectivity in the Laynhapuy homelands. There is currently no coordinated plan to improve connectivity across the region, with reliance on ad-hoc programs to date.

Some of the Laynhapuy homelands have Activ8me community phones (Dhamiyaka, Dhupuwamirri, Djarrakpi, Garrthalala and Bunhungura). These solar-powered, satellite-connected phone units were installed in the early 2010s in about 300 small homelands under the Federal Government's Remote Indigenous Community Telecommunications Activity (RICTA). These community phones provide Wi-Fi connectivity near the phone, enabling Wi-Fi Calling and messaging using a mobile device.

- "[Gurkawuy homeland has a] satellite type phone [with Wi-Fi]. The community loves it … You can just do simple text messages [but] I don't know if you [can] use FaceTime or anything like that." (Lonnie Dentith, Nurse, Laynhapuy Health, 2022)

In 2024, the only homelands with 4G coverage were Gutjangan on Bremer Island and Yilpara homeland. In 2025, two additional Laynhapuy homelands—Donydji and Garrthalala—received satellite small cell mobile services under a Telstra NTG co-investment program, with a third homeland, Birany Birany, to receive small cell mobile in 2026.

[4] https://www.telstra.com.au/exchange/can-radio--when-technology-reaches-the-end-of-the-road-

However, there are ongoing calls for improved internet access across the region.

> "One of the things that the Internet can do is reduce the tyranny of distance. You can live somewhere really remote and live on your country and protect your country and be away from drugs and alcohol and other things in town that people don't want to be around, and still communicate and still be able to do your banking and still be able to communicate with Centrelink and still be able to do online ordering and still be able to talk to the community next door and have a face to screen conversation. These are all things we take for granted now that weren't around when we were kids, but we all take it for granted now. It should be something that people in remote communities, who have arguably the most to gain in terms of living remote and how they can be connected."
>
> - Abi White, Laynhapuy Homelands School Principal, 2026

Remote communication options have improved but safety is an ongoing concern

Emergency communications and safety concerns are key drivers for the needs for improved communications services in the Laynhapuy region.

- "[Currently] communications is pretty much restricted. [Beyond Yirrkala], there's not much mobile coverage … So there's a big focus on knowing where people are all the time to make sure that they're safe. [It's a challenge] getting messages back in a timely way." (Kerry Legge, LHAC CEO, 2022)

We have heard numerous examples of emergency incidents that

- "[A key concern] around lack of communication is [during emergencies. Recently] a young boy was bitten by a crocodile at Bukudal … Fortunately they had access to communication so that we could respond and get the boy into hospital [in Darwin]. It was quite a severe event. [Also a] young child who rolled in a fire and the parents had to drive him to Gapuwiyak. [It took] hours before that child had medical attention … We're lucky that more things don't go wrong, [but] more equity in communication here would be a great outcome." (Kerry Legge, LHAC CEO, 2022)

Like many of the Laynhapuy homelands, Gäṉgaṉ becomes isolated during the wet season, with road travel often not possible between December and April each year.

- "In the dry season, it's about 3 hours [drive. It's] up to five hours in wet season [or impassable if] the road's all flooded over. [Even] then you've got to have a reliable 4WD and fuel." (Rachel Godley, LHAC Youth Program Manager, 2022)

Figure 11: Road access to Gäṉgaṉ is via the Central Arnhem Road from Nhulunbuy

We heard numerous concerns by Gäṉgaṉ residents about the lack of access to communications when travelling, hunting or working outside of the community.

- "[If we break down middle of nowhere, on the highway, I don't know how we can [call for help. We] don't have satellite phone." (Billy Gumana, Community leader/CDP Supervisor, 2024)

> "There's not enough communications in [Gäŋgaŋ. And we need] long range [communications for when we are outside] the community [so] if someone's got hurt in the bush or lost or whatever, we need to talk back to the community."
>
> - Yinimala Gumana, Community leader/Ranger Coordinator, 2024

Yinimala suggested a return to use of HF radio in vehicles to provide long-range communications. However, without widespread adoption of HF radio equipment and antennas in the region, along with the high cost of devices, this may no longer be a viable solution.

New low earth orbit (LEO) satellite technology may provide more cost-effective solutions. In some regions, there is increasing use of Starlink Roaming services as a means of accessing internet when working remotely, including vehicle mounted units enabling communications while travelling.

Following our 2022 visit, LHAC purchased Zoleo satellite communications devices for staff use when travelling remotely. These can send text messages via satellite using a mobile app and include an SOS beacon and vehicle tracking capability.

- "We've actually moved on to the Zoleo devices which are fantastic … you can send a message to anybody, even if they don't have that Zoleo app … Most of the time text messaging is all you need if [you're] travelling in between homelands and you blow a tire or you come across somebody who's had an accident, it's pretty easy to [send a message]." (Rhys Yerbury, Stores Coordinator, Laynhapuy Health, 2023)
- "Some people in our organisation [use the] ZOLEO [now] to send the messages [via] the satellite. And that works, but sometimes [there can be a delay before the person sees the] message." (Yinimala Gumana, as above, 2024)

There is now direct-to-device satellite messaging available on recent model iPhone and Samsung phones with Telstra services,[5] along with emergency messaging on iPhones. Under the Australian government's proposed Universal Outdoor Mobile Obligation,[6] direct-to-device messaging capability via LEO satellites will be provided by all mobile network operators by 2027, with voice services to follow.

There are high rates of mobile phone ownership

87% of Gäŋgaŋ survey respondents owned or shared a mobile phone in 2024 (80% in 2022). All of these were smartphones and all used pre-paid services. Despite the lack of mobile coverage, 89% regularly used a mobile phone for phone calls (73% in 2022). Prior to the Wi-Fi network install, mobile calls could only be made via the Wi-Fi hotspot or while visiting a community with mobile coverage.

Residents report using their pre-paid mobile services when they travel to larger communities, such as Gapuwiyak, Ramingining or Yirrkala, or the regional centre, Nhulunbuy. There are no pre-paid vouchers available in Gäŋgaŋ, so these are purchased online or in the larger communities.

Figure 12: Traditional owner Marrpalawuy Marika using a mobile phone

[5] https://www.telstra.com.au/coverage-networks/mobile-technology/satellite-to-mobile
[6] https://www.infrastructure.gov.au/department/media/news/universal-outdoor-mobile-obligation-improve-outdoor-mobile-coverage-across-australia

Of the 88% of respondents who had used the internet within the last six months (82% in 2022), 100% said they use their smartphone as their primary means of internet access (93% in 2022). No respondents had used a desktop computer for internet access, and only 10% used a laptop (down from 20% in 2022). This usage was predominantly by school or clinic staff in a work context, with no computers or laptops in homes.

Gäṉgaṉ residents want improved communications as long as it can be culturally managed

When we first visited in 2022, Gäṉgaṉ residents and staff were keenly awaiting a planned community Wi-Fi service which had been funded for Gäṉgaṉ and Wandawuy homelands. However, the project did not end up going ahead (see section 5).

> "The community [wants the broadband service] here instead [of] using our pay phone [so] they can just use their own mobile to call their friends or families."
>
> —Billy Gumana, CDP Supervisor/Traditional Owner, 2022

- "[We want better coverage here] because this is the very remote area. [Currently] people were using their mobiles phone [via the Wi-Fi. Sometimes] the public phone's not working. [So] that's why we need the [broadband]." (Yinimala Gumana, Community leader/Ranger Coordinator, 2022)

Figure 13: Community leader Billy Gumana

The calls for household broadband solution were repeated during our 2023 visit.

- "They want reception to Gäṉgaṉ so instead [of] using one phone, payphone to do something like reporting every week and using work phone … they want [to] use mobile phone [from their house]. Maybe these people need internet in house and Wi-Fi so they can call someone [in an] emergency." (Djamika Ganambarr, Youth worker/Co-researcher, 2023)

Reliable communications services are also needed to reduce the need for travel to and from Nhulunbuy, given the high cost of flights and difficulty in arranging bookings.

- "There's no regular passenger transport service out here [and a 'bush taxi' flight] costs $750 one-way, so it's [not] easy to get into town for most people … It's all charters and therefore expensive. [It's] also difficult to navigate the [online booking] system, like a lot of other [digital services] that Yolŋu are still learning to navigate." (Rachel Godley, LHAC Youth Program Manager, 2022)

Effective communications also reduce the need for community leaders to travel for regional meetings.

- "It's very far to travel [to Yirrkala or Nhulunbuy for] meetings [so] sometimes I [join] through the mobile. That's why we need a good [communication] system. We want the right solutions [for] our life." (Yinimala Gumana, as above, 2024)

Previously there has been resistance to having any form of mobile coverage by Laynhapuy homelands residents due to potential social and cultural impact, however interviewees said this attitude is changing.

- "Homelands have been protected from that in a lot of ways but now that we're starting to get access through Wi-Fi, we're seeing that exposure growing. [A] few years ago community was speaking against mobile networks … whereas now, most people have mobiles [and want more coverage]." (Haidee Dentith, former Laynhapuy School Principal, 2022)

We also heard that some young people have not returned to Gäṉgaṉ due to lack of internet access.

> "Some kids from Gängan, they live in Yirrkala now and it's too hard to ask parents to bring the kids back to wherever they're from. [They want the] internet, too much. We got strong culture here. We turn [off the Wi-Fi] every night. [That's why] they walked off and live in the big area like Yirrkala."
>
> —Djamika Ganambarr, Youth worker/Co-researcher, 2023

Some Elders see connectivity as a way of reducing the barrier of remoteness for young people.

- "There [was] a time [when] two football teams came from Melbourne to Gäṉgaṉ, and I saw it on Facebook. And I was so happy to see the cross-cultural exchange [between] homelands [and] the wider community. [We want] our young leaders, both female and male, [to be connected and] part of the wider Australia." (Marrpalawuy Marika, Traditional Owner, 2023)

During our 2024 visit, community leaders again emphasised their concern that digital engagement must not undermine language use and cultural identity.

- "We need to keep our culture strong. Our language is everything." (Yinimala Gumana, as above, 2024)
- "We don't want kids to lose that [Yolŋu Matha] language. They sometimes use bad language, which they shouldn't be using it, and learning from what they see on the mobile. [Young people] around the world [are] doing TikToks and all that, and using bad language. [Our] kids shouldn't be watching [that content and] learning from it." (Billy Gumana, as above, 2024)

A Wi-Fi delivery system was described as the most culturally appropriate model for homeland communications due to providing options for community control.

- "Wi-Fi is the way that people communicate [in most homelands], and there's a really good understanding of how that works and how you can control it. That's really strong for people to know that they can have some [control over] access to social media, [with ongoing] conversations around good social media and bad social media. Wi-Fi is the [best] way to do that." (Kerry Legge, LHAC CEO, 2023)

Figure 14: Health worker Xephina Nunggumajbarr with her daughter watching cartoons on a smartphone

> "I think Wi-Fi is going to be the best communication set up for everybody in homelands [to enable] connectivity and that ability to call people [using] Wi-Fi calling. [That] is the next best thing [to having mobile service. Most people now have] a mobile device capable of Wi-Fi calling, [including] for emergencies, [so] anybody in homelands with a mobile device is able to call up 000 and say what's going on. That's [really] important in homelands."
>
> —Rhys Yerbury, Stores Coordinator, Laynhapuy Health, 2023

The Case Study in Section 5 outlines the nbn community Wi-Fi network and a previous Wi-Fi project, along with community preferences over network design and operations to meet their needs.

There is no household uptake of nbn Sky Muster or Starlink

Despite the lack of mobile coverage, none of the 13 residential houses in Gäṉgaṉ had nbn Sky Muster services during each of our visits from 2022-24. The only satellite broadband services were on the clinic and store (Sky Muster and Starlink), both managed by Laynhapuy Health, and a Sky Muster service on the ranger base since December 2022.

Prior to the rollout of the community Wi-Fi network in October 2024, the only internet access for residents was via the Wi-Fi hotspot at the shop or clinic, with **71% of those surveyed in 2024 using public Wi-Fi for internet access.**

There was very little awareness of Sky Muster being an option for home internet. With post-paid billing as the primary option, this was not considered an affordable means of access by residents. Rather than individual household services, Gäṉgaṉ residents had long expressed their preference for a shared model of internet access via community-wide Wi-Fi. the nbn Wi-Fi mesh network has now enabled this model of access, however we have not visited since to hear directly from residents about their experience of it.

Agency uptake of Starlink satellite services has increased across the Laynhapuy homelands

There was no use of Starlink in the region during our 2022 visit, with Starlink only expanding its coverage footprint to include northern Australia in November 2022.[7] Since that time, Starlink has had rapid uptake in remote and regional Australia due to delivering a faster, lower latency and more reliable broadband service than the NBN Sky Muster service, especially in northern Australia where wet season impacts the reliability of Sky Muster services. [8] Remote agencies have been rapid adopters to improve service delivery, telehealth and online education, as well as point of sales in shops.

In the Laynhapuy region, there has been increased Starlink uptake by agencies, although no reports of uptake by First Nations households at the time of our last visit in 2024. The high cost of Starlink services was seen as a key factor at the time.[9]

- "[Starlink costs] $139 a month. So that's still the challenge, that affordability to move to the next level of service." (Kerry Legge, LHAC CEO, 2024)

During our 2023 visit we found that Laynhapuy Health had installed Starlink dishes on the shops located in four homelands (Gäṉgaṉ, Wandawuy, Yilpara / Baniyala and Garrthalala) to improve EFTPOS, which the community relies upon as the stores do not accept cash.

[7] For information about Starlink see: https://www.ozbroadbandreview.com/blog/what-is-starlink/
[8] https://www.accc.gov.au/media-release/broadband-performance-of-satellite-services-measured-for-the-first-time
[9] In February 2025, Starlink announced two lower price options, a $69 plan with 100Mbps download speed, and a $99 plan with 200Mbps speed, in addition to the existing $139 Premium and Mini Roam plans ($80).

- "Starlink came about mainly due to some connection [and speed] reliability issues that we were having with the nbn Sky Muster satellite. [In both Gäṉgaṉ] and Garrthalala [the service would] drop out all through the morning [and] randomly come back online at 2 or 3pm … We rely on that internet [to keep] the EFTPOS working … because we're a card only store, [no] cash. [It] was hard [to] diagnose any issues [and] difficult to organise timely servicing. [So we installed] Starlink [and] haven't had any issues with it in three months. [Also] you get all the diagnostics and everything on your phone through the Starlink app." (Rhys Yerbury, Stores Coordinator, Laynhapuy Health, 2023)

Figure 15: Skymuster and Starlink dishes above Gäṉgaṉ Shop

Laynhapuy Health also installed Starlink at clinics across the region in 2023, with funding through National Aboriginal Community Controlled Health Organisation (NACCHO).

- "Laynhapuy [Health has] secured some funding for more Starlink [at] the clinics now as well. Purely because you'd effectively be able to do telehealth. A lot of the clinics [had] fairly sophisticated cameras … installed many years ago but they were unable to use [them] because of the reliability and the upload limitations of [Sky Muster]." (Rhys Yerbury, as above, 2023)

In 2024, LHAC coordinators again reported Starlink services provided improved reliability.

> **"The EFTPOS is more reliable, communication is more reliable, we have a more consistent internet service or internet connection. In the last six months we've actually had some community members being able to join board meetings via Teams, whereas previously they haven't been able to attend or communicate at a board meeting."**
>
> **—Ebony Tinirau, Health and Communities Manager, LHAC, Yirrkala, 2024**

- "[I've got] Starlink satellite at home in Nhulunbuy because it's more reliable than the 4G. [Even during] the wet [season] I can use it inside … it's very reliable." (Kerry Legge, LHAC CEO, 2024)

While Starlink services are more expensive than nbn Sky Muster,[10] speeds are significantly faster, with lower latency and unlimited download (Sky Muster plans available at the time had varied data limits[11]). Using the Ookla speed test app,[12] we tested the Starlink and Sky Muster services at the Gäṉgaṉ shop during our 2023 visit. **The Starlink service had a speed of 213/10 Mbps and latency of 59ms, compared with the Sky Muster speed of 23/5Mbps and latency of 681ms at the same location.** While not a comprehensive test, this is indicative of the speeds both services may offer on a clear day. However, internet speeds can vary significantly with weather conditions, Wi-Fi configuration and the number of users and applications being used.

[10] Starlink costs $139/month plus up-front equipment costs, compared with nbn Sky Muster plans which start at $45/month and include free installation.
[11] Sky Muster Plus data limits only apply to video and VPN use, unmetered from midnight to 4pm. New nbn Sky Muster Plus Premium plans were introduced in November 2023 which have unlimited download and up to 100/20Mbps speed.
[12] https://www.speedtest.net/

Rhys Yerbury, who set up the Starlink service at Gäṉgaṉ, described the improvement in speed using an example of downloading a two-hour movie in about 34 seconds. Rhys also described the ease of installing the Starlink satellite equipment.

- "Its ease of install is second to none. I chucked that [dish] up on the roof, plug and play. We just popped it all together and used the app on the phone [which is] probably the only limiting factor to being out in community. But it was easy enough … You plug it in, power it up and [the dish] unclicks itself and then just moves around, finds the satellite and then locks on and makes incremental movements to get the best download speed possible." (Rhys Yerbury, as above, 2023)

Rhys reported that Starlink is less impacted by rain or heavy cloud than Sky Muster.

- "Historically, any storm that comes through, Sky Muster gets knocked out [and we] have to wait for EFTPOS payments until the storm passes and then it reconnects itself … It's a bit of a limitation of that service. [However with Starlink] the day that I installed it, a large stormfront came over and [I] was still [getting] 125 Mbps download … It was pretty impressive." (Rhys Yerbury, as above, 2023)

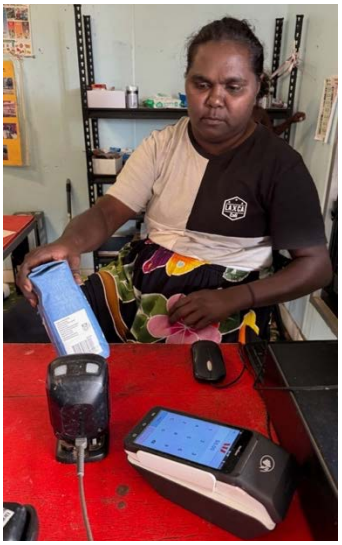


Figure 16: Trina Nunggumajbarr scanning items, with payment via EFTPOS

There is limited access to devices in the homelands

Digital devices are increasingly essential, with one interviewee describing them as a human right.

> "[It's] almost a basic human right now, that you need a digital device. It never used to be a basic human right, but [now] if you do not have a digital device, you are excluded."
>
> - Bettina Cooper, Mob Strong Financial Counsellor and Strategy Lead, Mob Strong Debt Help, 2024

Mobile phones are not available for sale in the Gäṉgaṉ shop. Most phones are purchased on trips to Nhulunbuy. As a result, sharing of phones is common. **Our 2024 survey data showed an increased rate of sharing of mobile devices, with 64% owning a mobile phone (down from 73% in 2022), and 23% sharing a device (up from 7% in 2022). 13% did not have a mobile phone, down from 20% in 2022.** The lack of availability means phones are often transferred to those most in need.

> "Phones are [often] shared [within] families. I've seen a mobile phone get passed to a whole other family that was going to Katherine, so it's almost like that phone is not really owned by that person, it's just who needs it, who needs to access someone the most. There are some people that just don't have the SIM, but they'll use the Wi-Fi."
>
> - Nadine Warbrick, LHAC Social and Emotional Wellbeing Worker, 2023

Figure 17: Mobile devices are often shared

In remote First Nations communities, there is often a high level of shared phones between couples. However, we heard that this can result in a partner restricting access to a device as a means of control where family violence is present.

- "I used to work at the women's shelter, and [often] it was the woman who said, 'He took my phone', or 'I'm not allowed one'. And even if they do have a phone, they have to give it to the partner to check all the time. That jealous thing, [and] control [of] phones for partners [is] incredibly high. And it just can't be reported [to] police. [But that] controlling or abusive behaviour [is] just really common." (Nadine Warbrick, as above, 2023)

This aligns with findings in other remote communities where shared devices can increase privacy and security risks and increase the risk of financial abuse of Elders.

> "[Many people] can't afford their own mobile phone [so rely on] a shared phone [or] a shared SIM. [With] a shared device, there's actually a greater risk of financial abuse. When] everybody has the passcode, there's greater risk." (Bettina Cooper, Mob Strong Financial Counsellor and Strategy Lead, Mob Strong Debt Help, 2024)

Last-Mile Access and Community Access Facilities

The Wi-Fi hotspot at the shop provided time-limited internet access until October 2024

Prior to the installation of the community Wi-Fi network in October 2024, the primary source of public internet access was the Wi-Fi hotspot at the Gäṉgaṉ Shop. Some residents also had access to Wi-Fi in workplaces (i.e. school, clinic, ranger base). Other than Yinimala, no Gäṉgaṉ residents had any form of fixed household internet in 2024.

Figure 18: Co-researcher Guruwuy Ganambarr using the Wi-Fi hotspot

The Wi-Fi hotspot was installed at the shop by Laynhapuy Health and has been operating as a free daily service using Sky Muster satellite backhaul.[13] Based on community decision making, the service has operated on weekdays from 2pm (when school finishes) to 8pm, with longer hours on weekends, and has content filtering to restrict access to pornography or online gambling sites.

- "It is free and there's no password or anything … If lots of people are on it, it gets fairly congested, but otherwise it's all right, and I don't think we've run out of data yet." (Rachel Godley, LHAC Youth Program Manager, 2022)

Laynhapuy Health also installed these Wi-Fi hotspots in six other Laynhapuy homelands.

- "The Wi-Fi is set up using Sky Muster in sites … where all the health clinics are … (Dhalinybuy, Garrthalala, Gurrumuru, Wandawuy, Baniyala, Gäṉgaṉ and Birany Birany). …The reason it's limited is not to use up all the bandwidth on it, because [the clinics still need it] to do their main core job." (Kerry Legge, LHAC CEO, 2022)

The community Wi-Fi hotspots are widely used and valued, with participants highlighting the importance of having online access to banking and government services, which reduces costs for travel and recharging pre-paid mobile phone credit.

[13] The Wi-Fi was set up by eMerge in Sydney, using Unifi software, which enables content filtering. It initially used a domestic 25/5 Mbps Sky Muster plan to support the EFTPOS machine as well as free public Wi-Fi. This was upgraded to Sky Muster Plus Premium with unlimited data use and the EFTPOS moved to a dedicated Starlink serviced in 2023.

- "People [need] Wi-Fi to do some banking, internet [and make calls. We] don't have [a mobile service] in our community. [It's] four hours' drive from here to Nhulunbuy to [access services]." (Billy Gumana, CDP Supervisor/Traditional Owner, 2022)

However, increasing demand for community Wi-Fi, especially by young people, had led to network congestion. Some homelands had also experienced issues of young people not attending school due to staying up late at night watching movies or playing online games.

- "When we've had students not coming to school, [it's often] because they've been up all night on the internet. [So communities directed] Laynha Health to restrict the Wi-Fi [here and at] Garrthalala … That seems to be addressing it." (Haidee Dentith, former Laynhapuy School Principal, 2022)

Managing the competing demands on Wi-Fi access can be challenging for Elders.

- "Sometimes [the Elders] want me to turn the whole Wi-Fi off and never want it again, [but then] young people [want] the clinic Wi-Fi password. [It] depends on who you're speaking to." (Rachel Godley, LHAC Youth Program Manager, 2022)

However, setting time limits on Wi-Fi use were raised as a limitation when it is the only means of internet access, effectively leaving residents without access to essential services during much of the day.

"We need to access emails for work so the Wi-Fi time limit makes it hard when it doesn't start until 2pm. We need access the whole day for work but we don't want kids having access during school."

- Yananymul Munuŋgurr, LHAC Director/Garrthalala resident, 2022

- "I [agree that] if the community don't want the internet to be on after a certain time, then it ought be shut off [and] not be available. But the problem [is, it's currently off at times] when people ought to be able to utilise it and access [online services]." (Geoff Ellis, LHAC legal support, 2023)

It is also important that residents can use the broadband service to access emergency services at all times, including as a backup if the Telstra public phone is not working.

- "We have to be able to talk to leaders [about the times for the Wi-Fi and when to] turn it off at night. And when we use [it] for emergency, we can use that Wi-Fi. But during the night, [having internet is] no good for the kids … only emergency." (Djamika Ganambarr, Youth worker/Co-researcher, 2023)

With the shop Wi-Fi hotspot not working during our 2024 visit, there was increased demand for use of the clinic Wi-Fi, which is intended for health service use only.

- "Sometimes [people] asked me for the password for the clinic [Wi-Fi. They need internet] for reporting for Centrelink [or] online banking. [Then] I need to change the password." (Xephina Nunggumajbarr, Clinic Worker, Gäŋgaŋ, 2024)
- "[When] we're using the Wi-Fi [at the clinic], all the young [people] will rush in, 'can I use this Wi-Fi, I want to check my balance'." (Djamika Ganambarr, as above, 2024)

Figure 19: The clinic Wi-Fi was the only source of internet access during our 2024 visit

Managing the demands on Wi-Fi access had become a challenge for Laynhapuy Health staff.

- "[Trying] to control [Wi-Fi access] in the homeland [clinics is] an ongoing job. We currently try to do that with passwords [but] passwords unfortunately get out to everybody. [So] we're always looking for ways to improve that service." (Ebony Tinirau, Health and Communities Manager, LHAC, Yirrkala, 2024)

Another limitation of a Wi-Fi hotspot is low coverage area, with a range of roughly 100 metres from the hotspot site. Yinimala Gumana raised this as a limitation, particularly for elderly people and those with disability needing internet access from their home.

"[There's] not enough communications [in our] remote community. We got few places where we can access for the internet and [the Wi-Fi hotspot is] not enough [to] reach out to the [houses]. The signal [is] too small to catch it."

- Yinimala Gumana, Community leader/Ranger Coordinator, 2024

We heard several calls for a communications solution to be extended to the airstrip, which is nearly a kilometre from the community. Currently there is no means of communication for pilots or passengers from the small terminal.

- "[We need communications at the] air strip [because] we got air strip a long way from this community now. [We need it to be] easier for the people [who arrive by plane to] give a call out to the community." (Yinimala Gumana, Community leader/Ranger Coordinator, 2024)

There are currently no community-access computers in Gäṉgaṉ

The only computers in the community are in the clinic, the school and the ranger office, however these are not available for public access.

- "[Yolŋu health workers] can use the computer in the clinic [and] youth workers [can] use that as well." (Rachel Godley, LHAC Youth Program Manager, 2022)

Our surveys consistently found that no households had a computer at home. Traditional Owner, Billy Gumana, said that computers or laptops are needed in workplaces to enable people to do their work and conduct meetings via videoconference. He wanted a community-access computer in Gäṉgaṉ to enable him to learn to use online services. The community was working towards re-building the community office to support digital access and training opportunities for residents.

"I'm trying to get [a new community office] built so we can have our own computer, and people can start doing their courses and learn [about] their people, community, [and other things they] want to learn about."

- Billy Gumana, CDP Supervisor/Traditional Owner, 2024

The community store has been the communications hub in Gäṉgaṉ

The Gäṉgaṉ shop has previously been the default communications hub for Gäṉgaṉ for several years. It is open each day and is the location of the public Wi-Fi and a second public phone, as well as the noticeboard for messages and upcoming activities.

While awaiting a new community office, the centrality of the Gäŋgaŋ shop and its existing communications role makes it a suitable interim location for community computer equipment for residents to access online services and learn digital skills.

- "The shops are a good [place] to make a hub. [We could even just set up] a couple of iPads that are just locked down and [people] can come and use for internet banking or MyGov, which are the key things." (Kerry Legge, LHAC CEO, 2022)

Figure 20: Gäŋgaŋ shop

It was suggested that the shopkeeper could provide a level of supervision and, with appropriate training and support, digital mentoring to people needing help with phone activation, online services or other digital needs. Alternatively another person could be employed to provide the digital mentor role.

Service Delivery and Use of Online Services

This section outlines the use of communications by service providers in Gangan and across the Laynhapuy homelands region. **See chapter 5 for a case study specific to the connectivity needs and challenges to Laynhapuy Homelands School.**

Laynhapuy Health has limited phone and internet connectivity

There is a mix of communications services in the Laynhapuy Homelands clinics, which are located in most homelands. Clinics are staffed by local health workers and supported by roving nurses, who visit at least once a week. The larger homeland clinics were upgraded to Starlink services in 2024, replacing the previous Sky Muster services, which struggled with limited speed and unreliability in wet season. However, our early visits demonstrated the limitations of poor connectivity on health service delivery.

- "We have landlines which are on and off, but satellite internet is our main communication. We use that for all sorts of things within the clinic, FaceTime-ing doctors for medical consults or communication with the office and other people … Internet-based email [and internet access is] through the Sky Muster network … It's not particularly fast and it comes and goes … If there's bad weather [or heavy cloud] around it doesn't work." (Lonnie Dentith, Nurse, Laynhapuy Health, 2022)

The Communicare cloud-based patient records database requires high speed and low latency for reliable access. It was previously described as not working well over the Sky Muster service, with nurses using an offline version when visiting homelands due to limited speeds.

- "[In Gäŋgaŋ today] I couldn't even log in. [So we use an] offline version. [W]hen we get back to the office [we] synchronise that back up onto our server. That's how we operate because the internet is way too slow [and] unreliable as well." (Lonnie Dentith, as above, 2022)

Laynhapuy Health has upgraded telehealth equipment

Telehealth has the potential to improve access, particularly in remote areas, allowing clinicians to undertake remote triage and consultations. Gäŋgaŋ clinic previously had high-definition telehealth equipment installed to enable remote access by General Practitioners. Initially, this worked effectively but was discontinued due to difficulties accessing technical support. As a result, nursing staff reverted to using FaceTime on a mobile phone via the Wi-Fi.

- "None of that [high-end equipment] works anymore. So we're just back to standard nbn type internet [with] the basic iPhone [which] seems to be the easiest thing to do … We're just using FaceTime [or WhatsApp] depending on what the other person [has. It works pretty well] but occasionally it will bomb out [if] there's not enough data or … cloud cover or whatever." (Lonnie Dentith, as above, 2022)

Figure 21: Obsolete telehealth equipment in the clinic in 2022

Laynha Health removed the obsolete telehealth equipment from clinics in 2024 and replaced these by a new telehealth system. The new Starlink services in clinics provide the quality and reliability needed for effective remote telehealth delivery.

"We're trialling a system that sits within the clinics that external parties can dial into … Due to the lack of the emergency response in the homelands, this now allows [a] Senior Medical Officer sitting in hospitals at RDH Adelaide or in our Laynha office to be able to zoom in and triage the patient without having any medical staff onsite to determine the need of retrieval or even the need of treatment."

- Ebony Tinirau, Health and Communities Manager, LHAC, Yirrkala, 2024

This relies on external health providers to supplement the local nursing staff.

- "If people do become unwell we need the medical people who often don't know the person that they're talking to be able to respond appropriately. So putting confidence into the primary healthcare service gives people confidence that when they get sick that someone [is] listening to them … Part of it's a technology solution, not always putting more people at it … We talk about things that we can do to get an outcome to save people's lives." (Kerry Legge, LHAC CEO, 2024)

Community leaders welcomed this improved medical access from Gäŋgaŋ.

- "If you need to talk to a doctor, you can do it from here instead of having to drive to Yirrkala." (Yinimala Gumana, Community leader/Ranger Coordinator, 2024)

Communications technologies are used for undertaking land management work on country

The Yirralka Rangers have bases in more than 14 homelands, with their work covering an area of 17,000 square kilometres.[14] They have 55 people on the team, 48 of whom are based in the homelands. They have recently been through a significant restructure and now have two coordinators, one Yolŋu (Yinimala Gumana) and one non-Indigenous.


Figure 22: The Yirralka Rangers base in Gäŋgaŋ has a Sky Muster service

Former Co-Coordinator Sarah Kemp said it had been difficult to contact people for meetings or work due to public phones being the only means of contact in many sites. In December 2022 Yirralka Rangers set

[14] https://www.laynhapuy.com.au/services/yirralka-rangers-land-sea-management/

up nbn Sky Muster services in ranger stations in the five larger communities (Gurrumurru, Barraratjpi, Dhalinybuy, Baniyala and Gäŋgaŋ) to improve communications and enable online meetings. Rangers now use Wi-Fi to make calls at these sites.

- "The places where the rangers have put the nbn satellite [are] really remote homelands, so[they're] improving access to communications [for those sites]. [In some] smaller homelands, it's only the rangers living there, so they are the community." (Kerry Legge, LHAC CEO, 2023)

The Yirralka Rangers now use Fulcrum software to collect land management records.

- "When we go out in the bush or do work … we set our Fulcrum [on] the iPad so we can get all the information [for] monitoring and tracking and … information from all the works that we do around the country, where there are feral [animals or] weeds or other things like looking at the fauna and flora, plants and animals. This kind of job we do with partners like Macquarie University … We have to go back to the main base [to upload that information and to] communicate as well." (Yinimala Gumana, Community leader/Ranger Coordinator, 2024)

Figure 23:Yirralka Rangers Co-Coordinator and community leader Yinimala Gumana

Yinimala described how rangers are developing digital skills through use of technology in their work.

> **"We just got this technology world now and we learn slowly. [The Fulcrum] is something that we learn [as] rangers [and] people in the community [are also learning to] use the technology."**
>
> - **Yinimala Gumana, Community leader/Ranger Coordinator, 2024**

Community leaders are wanting economic development opportunities for Gäŋgaŋ

Improved digital access creates opportunities for employment and economic development. Community leaders expressed interest in developing tourism and business opportunities.

- "[We need good communications for the] community to do the business, like tourism … to charge [fees] for their camping [and in case of] emergencies … We need to set something down there [at the beach] for the visitors [and] for all of us as well when we down there. [Also at] Mount Crindle … because in the long run, we're going to be set our business down there." (Yinimala Gumana, Community leader/Ranger Coordinator, 2024)
- "We decided to have our tourism here [at] Gäŋgaŋ. But we want to think about having two tourism; one here for our memorial, and other one is down the beach, called [Garrubra]." (Billy Gumana, Community leader/CDP Supervisor, 2024)

Figure 24: Billy Gumana working on a painting

However, they raised concerns about ensuring there are safeguards, particularly around Indigenous Cultural and Intellectual Property rights and fair trading of art and culturally generated material.

- "Buku-Larrnggay [Mulka Centre in Yirrkala] are promoting the individual artists … They put their effort into that art world. [It's good to share our art and make an income] but also we need to keep it [and protect our copyright and intellectual] properties." (Yinimala Gumana, as above, 2024)

The shift to online delivery of financial and government services creates multiple barriers for homelands residents

The shift from a cash economy in the 2000s to all Centrelink payments and salaries being paid into bank accounts means reliable access to online banking is now essential wherever people live. The Basics card trials in the Northern Territory in the mid-2010s for welfare recipients restricted the eligible suppliers where goods and services could be purchased. This has since been replaced by an enhanced Basics card or Smart card. While this enables more flexible use including online purchasing and payments, it is still widely considered a controlling and paternalistic measure.

This is part of a broader trend of financial and government services increasingly being delivered online, requiring reliable online internet access, smart devices and relevant digital skills.

- "The financial services industry is [shifting] towards digitalisation. [There is] growing dependence on online services [and] online banking, not just for the banks and lenders but also for superannuation, where there's now a greater requirement for people to be able to access their information through internet on these devices." (Mark Holden, Mob Strong Senior Solicitor and Policy Advocate, Mob Strong Debt Help, 2024)

The gradual removal of banks from regional towns is also having an impact. This is based on the assumption that people no longer rely on face-to-face delivery, however many First nations customers still prefer in-person support at a bank branch or post office.

- "[We were] recently in a main hub in the Northern Territory. [We saw] a greater queue inside than there was at the ATMs, simply because people are more comfortable going to a counter service [than] going to the ATM. How can you then say, if that particular bank was to close then people can [transition] to digital banking [when many aren't even] using an ATM?" (Bettina Cooper, Mob Strong Financial Counsellor and Strategy Lead, Mob Strong Debt Help, 2024)

Our 2024 survey data show high engagement with online services in Gäŋgaŋ, with 84% of internet users in 2024 using banking apps and 69% accessing government services online.

First Nations advocates described government services such as myGov as being overly complex.

> **"The absolute complexity of trying to get on myGov, find passwords, multi-factor authentication and then navigate it. [It is] unreasonable [to expect people to know how to use it who are] sometimes only the second and third generation money earners [and] have had not had the advantage of being given reasonable and fair technology education throughout their schooling."**
>
> - **Bettina Cooper, as above, 2024**

Many First Nations users encounter ongoing difficulties with passwords and account management when using online services.

- "They don't remember the password that they created when they were told to create [one] when some[one] who helped them and spent one moment with them, and it needed to be more than one moment. We are kidding ourselves if we think we're being fair and equitable." (Bettina Cooper, Mob Strong Financial Counsellor and Strategy Lead, Mob Strong Debt Help, 2024)

There have been significant changes to online sign-in systems for banks, telco providers, government service providers and other online services aimed at reducing risks of scams, fraud or financial loss (see section on scams in Digital Ability section on page 40). Systems such as multi-factor authentication and use of authenticator apps have been implemented. However these can be very difficult to navigate in a remote community context such as Gäŋgaŋ, where there is no mobile coverage, low use of email and a lack of digital support. This impacts on residents' access to essential services.

- "To protect against scams, a lot of our financial service providers have now created more multi-factor identification requirements. [For many remote people it] is now impossible [to use] these financial services." (Mark Holden, Mob Strong Senior Solicitor and Policy Advocate, Mob Strong Debt Help, Yirrkala, 2024)
- "[If people] tap on [a link in a text or email], there's risks of scams [or] data breaching, it's not good … So digital exclusion has also led [to] greater chance of financial abuse." (Bettina Cooper, as above, 2024)

Helpline services and support can be challenging to use with technical and language barriers

Use of helpline services can be very challenging for Yolŋu, especially with long wait times. This is made harder by limited and unreliable communications.

> "Dealing with those agencies, you can be in the phone to Centrelink for two hours … Yolŋu [have to call] on a public phone, but everyone else is wanting to use the public phone. They try and come over here and use [Wi-Fi calling but] it's very much unreliable and cuts off, so they might be waiting on the phone to Centrelink for an hour, and all of a sudden, the internet goes down, and they're back to square one. It is really disadvantaging them in being able to have what ought [to] be just everyday normal entitlements. And that goes through trying to get identification, trying to get Centrelink [or] pensions [and more]."
>
> – Geoff Ellis, as above, 2023

Geoff said that many people go without entitlements due to the poor communications access and lack of First Nations helplines for some services.

- "[There are a] number of people out here who wouldn't be on their proper benefits because they can't get through [all the] requirements of Centrelink [or] Medicare … The hoops [they have to jump through to] get a replacement Medicare card, or to put a child on a Medicare card is ridiculous, and there is no Aboriginal [help] line for Medicare, so it makes it even all the more difficult." (Geoff Ellis, as above, 2023)

Lack of communications can also impact on providing support with justice matters.

- "[I've been trying to support a client with justice issues, requiring a] number of phone calls, of which we have been cut off on numerous occasions. They say that they want us to email our request. Well, we can't email the request from here [because] the internet out here at Gäŋgaŋ is really, really unreliable." (Geoff Ellis, LHAC legal support, 2023)

Due to the remoteness from a regional centre, access to reliable and effective communications is critical.

> "To have coverage [or] Wi-Fi [and] a reliable telephone service is absolutely critical, and they have neither of those at the moment. [Especially] when you're four hours from Nhulunbuy, where the bank is, or where Centrelink is. [And some people] don't want to go into town. [Having reliable connectivity] is absolutely essential for people in their day-to-day living."
>
> - Geoff Ellis, LHAC legal support, 2023

Lack of identification documents is a key barrier to setting up online services

Identification barriers also hinder homelands residents from setting up online services, with many lacking sufficient documents and requiring assistance to source them.

- "Some people in the community [don't] have a driver's licence, [a] proof of age card, [or] even [a] birth certificate." (Mark Holden, Mob Strong Senior Solicitor and Policy Advocate, Mob Strong Debt Help, 2024)

Geoff Ellis is a lawyer employed by LHAC to provide legal and justice support for homelands residents. However, Geoff finds his role extends to supporting people in navigating a range of services, especially online services which require multiple forms of identification.

- "I'm officially a lawyer but [I help people] with setting up banking [or] Centrelink. [They need] identification [such as] birth certificates, which they don't have, and copies of a bank account [or] driver's licence with a photo ID. [So] life becomes impossible. And because they don't have any ID, they can't get any Centrelink [and so they go] down into further poverty." (Geoff Ellis, LHAC legal support, 2023)

We also heard that the limited postal services can impact on people accessing key services.

- "[Often] the post doesn't get through [or] ends up in the wrong homeland [or] going to the wrong person. [And agencies often say] 'You'll have to post this in for your superannuation', or if you're opening a [bank account], 'that'll be followed up by your code in the post'. [Even] in this day and age [many agencies] need original copies to be sent in the post. [I can certify their ID] as a lawyer [but] I think I'm the only one in Arnhem Land." (Geoff Ellis, as above, 2023)

To help address the lack of identification documents, an AUSTRAC Protocol has been set up to assist First Nations people.[15]

- "[Many remote people] don't have a driver's licence [or a] birth certificate. [Sometimes] the birth certificate might have information that's different to their driver's licence, [which makes it] impossible [for] financial service providers to provide [a] service, because things don't add up … AUSTRAC created a protocol in 2018, whereby some First Nations people [without] all the identifications [can get letters from] community leaders [to] verify who you are, [to make up] the hundred-point identification. But a lot of these financial services don't know much about it." (Mark Holden, as above, 2024)

[15] https://www.austrac.gov.au/industry-and-business/obligations-and-guidance/your-amlctf-program/customer-due-diligence/initial-customer-due-diligence/identifying-individuals-who-dont-have-standard-id

In 2024, the Australian Parliament passed a Digital ID Bill to establish a Digital ID. [16] This aims to establish a single secure form of ID and reduce privacy issues with multiple agencies storing clients' ID records.[17] In theory, this would reduce the time and effort that Yolŋu and support agencies spend sourcing identification to set up multiple online accounts. However, we heard that this is still likely to have challenges in a remote community context.

> "Digital ID [is unlikely to] work [when] people [don't have] the basic access [and skills]. We need to get Centrelink people, ATO people [and] super companies [to] sit in communities for a week at a time to bring people to a basic foundation level before we start to talk about digital ID. [Without a] basic ID card, a tax file number, a basic phone, or access to a basic computer, what is the point?"
>
> - Bettina Cooper, Mob Strong Financial Counsellor and Strategy Lead, Mob Strong Debt Help, 2024

Due to limited communications some services are provided through face-to-face visits

As a result of the lack of on-site access to government services in homelands, limited connectivity and other barriers to using online services, some government agencies travel out to the homelands to deliver face-to-face services. For example, Centrelink staff fly out to homelands to do fortnightly reporting with clients. Other agencies partner with LHAC to deliver services.

The Electoral Commission drives or flies to each community to conduct pre-voting for Federal and Territory elections. Voting for the federal election was underway just prior to our 2022 visit. There were calls for a means of online or postal voting to reduce the resources needed and the impact of visits on communities.

The Australian Bureau of Statistics also struggles to undertake the Census in remote homelands. The 2021 Census, conducted during COVID-19 lockdowns, was reportedly impacted by limited access to homelands and administration issues in collecting Census forms.

Access to Media and News Services

No Gäŋgaŋ households have TV services working

Our 2024 survey found that none of the 13 residential houses in Gäŋgaŋ had VAST direct-to-home TV services working. During our 2023 visit, we found that only four of the 13 households had a VAST satellite dish on the roof following a housing upgrade program in which roofing was replaced and VAST dishes were removed and not replaced.

Figure 25: Only four of the 13 houses in Gäŋgaŋ still have a VAST satellite dish on the roof following housing upgrades

- "At the moment, it's nothing at all, [no TV services]. Set-top box, they've got like damage. [We want to know] who [is] responsible to manage that one?" (Yinimala Gumana, Yirralka Rangers Coordinator/Community leader, 2022)

There were still no active TV services during our 2024 visit, with several survey comments (See page 71) referring to the need for TV services to be reinstated in Gäŋgaŋ. The lack of working VAST television services is common in other Laynhapuy homelands.

[16] https://www.aph.gov.au/Parliamentary_Business/Bills_LEGislation/Bills_Search_Results/Result?bId=s1404
[17] See: https://www.digitalidentity.gov.au/

- "I don't think there's TV anywhere [in the region], maybe Gutjangan [on Bremer Island near Nhulunbuy, but] no TV anywhere else. Some people [have] pay TV set up in their house [but] I haven't actually seen any of them working lately." (Lonnie Dentith, Nurse, Laynhapuy Health, 2022)

The VAST direct-to-home satellite TV service was installed on all premises in remote communities by the Australian Government in about 2013, It replaced local television broadcasting and ongoing maintenance was deemed a householder responsibility. However, under the Digital Switchover program, there was no funding allocation or planning undertaken for a coordinated maintenance program of VAST equipment for remote First Nations communities. For residents, the expense of getting technical contractors to travel from Nhulunbuy, over 200 km or 5 hours' drive away, is prohibitive.

The most common problem is with the VAST set-top boxes, which are prone to damage from surges in the community electricity grid when generators are re-booted. Surge protectors were not provided as part of the roll-out. VAST set-top boxes are not available at the Gäŋgaŋ store. They can be purchased in Nhulunbuy for about $400 or online for about $320. However, even when people buy a new set-top box, it is very difficult to activate the smart card without phone or internet access at home.

Figure 26: VAST set-top box

Several interviewees described community demand to get TV services working again.

> "People [want to have] TV in their house [to] watch news [and] movies, [and find out] what's happening around the world. That's what we want here in Gäŋgaŋ."
>
> - Billy Gumana, Community leader/CDP Supervisor, 2024

- "Some community were asking, when [will we have] Channel 7 [and] ABC News [so we can] watch news on the TV [and] football games … When you guys left and then we keep talking, 'When are we going to have proper TV so we can watch the news?'" (Djamika Ganambarr, Youth worker/Co-researcher, 2023)
- "The main one I would love to see would be TV, to install TV in this community [and have access to] the ABC News. [We used to have] that satellite dish [but] everything just stopped now. Will it cost more [to get] the TV [again]?" (Marrpalawuy Marika, Gäŋgaŋ Traditional Owner, 2023)
- "[Having TV working again] would be really good … Young people wouldn't have to sit around on their phones all the time. Maybe they could watch sports on a bigger screen … It would probably create better community atmosphere if people could watch TV together rather than on a small [mobile] screen." (Rachel Godley, LHAC Youth Program Manager, 2022)

Improved access to broadcast television would likely reduce demand on mobile services and expense for users in accessing online entertainment. However, with no agency responsible for ensuring TV services are working in communities, this will require external financial and technical support.

The First Nations radio service is the primary source of local news and information

The only radio service available in Gäŋgaŋ is Yolŋu Radio, delivered to Arnhem Land communities and homelands by Aboriginal Resource and Development Service (ARDS) from Nhulunbuy.

In 2023, 38% of survey respondents were listening to Yolŋu Radio daily or weekly and 39% cited it as a daily or weekly source of news content. The Yolŋu Radio service had not been operating for some time when we visited in 2024, so only 13% were listening to Yolŋu Radio daily or weekly. However, 31% still cited Yolŋu Radio as a source of news content.

- "[We] listen to the news and other messages, what government people say about the law and whatever ... Yolŋu Radio [is all] we have here, and nothing else. [Some people might] use their Wi-Fi to listen [to] news and weather." (Billy Gumana, CDP Supervisor/Traditional Owner, 2022)
- "[There's Yolŋu Radio and] nothing else. People listen to the radio a fair bit, especially the older people will have it on." (Lonnie Dentith, Nurse, Laynhapuy Health, 2022)

Yolŋu Radio primarily broadcasts in Yolŋu Matha languages.[18] This makes it an essential mode of communications for the region, given the high proportion of language speakers. In Gäṉgaṉ, 100% of 2024 survey respondents spoke a Yolŋu Matha dialect (mostly Dhay'yi, Dhuwaya and Dhuwal) as their first language. This highlights the need for culturally appropriate digital systems and applications.

Yolŋu Radio also provides emergency information, including to report cyclone activity during wet season. Our 2024 survey found that 48% of residents use Yolŋu Radio as a key emergency information channel.

During our first two visits to Gäṉgaṉ, the Yolŋu radio service was also not working so we helped ARDS restore the service. While highly valued, there were calls to improve reliability of Yolŋu Radio.

- "[We want] the radio [working], the Yolŋu Radio, which is already installed at the Gäṉgaṉ clinic." (Marrpalawuy Marika, Gäṉgaṉ Traditional Owner, 2023)

It was suggested that ARDS could teach a local person how to troubleshoot if the service is not working.

- "Yolŋu Radio's the most reliable radio service. [It's better than ABC] because it's in language, and even the music's different. [But] when [it doesn't work], people stop using it. [So we just need] reliability of one radio service. [ARDS could show local people how] to reset it, because [it's often a simple fix to] just reset [the receiver]." (Kerry Legge, LHAC CEO, 2023)

With the local broadcast not always reliable, the way people were listening to radio was changing. **Since 2022, there had been a decrease in those who listened via a radio at home (down from 71% to 42%) and via car radio (down from 100% to 66%), however radio streaming on a mobile phone had increased (up from 0% to 47% in 2024).**

When the radio service was not working, the limited access to language-based news services was raised as an issue by interviewees.

> "Whenever the law changes, or where the government announces something, that news doesn't reach here. [During] the Voice [referendum], Yolŋu people were asking me about it. [Information] gets here too late [and it often] gets dumbed down ... People don't need it dumbed down; they just need it [translated]. Also international news [from] around the world, it's not really reaching here."
>
> - Nadine Warbrick, LHAC Social and Emotional Wellbeing Worker, 2023

[18] Yolŋu Matha is a family of languages from north-east Arnhem Land consisting of six main languages—Dhangu-Dhangu, Nhangu, Dhuwal, Ritharngu, Djinang, Djinba—with up to 30 clan languages.

Word of mouth is the primary source of news and information

There are limited sources of local news and information in Gäṉgaṉ to provide relevant, trusted information about meetings and events, service provider visits, news and weather or other emergency situations. Local information sources include:

- Yolŋu Radio (see above)
- Noticeboard at the shop
- LHAC and East Arnhem Regional Council Facebook pages.

Figure 27: Marrpalawuy Marika using the PA system for a community announcement

However, the primary source of news and information across the Laynhapuy Homelands is face-to-face delivery, known locally as the 'Yolŋu telegraph'.

- "It's pretty much the radio and the Yolŋu telegraph ... I don't know how people find out but people know stuff really rapidly, ... cultural things mainly. I don't think it would include politics and all those sorts of things ... I don't know how it works but it's pretty quick that people get told things." (Lonnie Dentith, Nurse, Laynhapuy Health, 2022)

In Gäṉgaṉ, information is also shared over the public address (PA) system at the pre-school.

- "The PA system [is the local equivalent of a] Facebook announcement." (Nadine Warbrick, LHAC Social and Emotional Wellbeing Worker, 2023)

Our 2024 survey found that the most common source of news and information was direct and in-person (100% daily). This was followed by other sources such as the PA system (29% daily, 5% weekly), Facebook (23% daily, 27% weekly), Yolŋu Radio (18% daily, 13% weekly), other social media (13% daily, 25% weekly) and the community noticeboard (11% weekly, 29% weekly).

The most common sources of emergency information were direct and in-person (100%), Yolŋu Radio (48%) Facebook (27%) and online emergency services or weather apps (16%).

Motor vehicles are also considered a means of communications in the Laynhapuy region.

- "To find out where someone is [you can't] just text someone ... The public phone sometimes doesn't work [or] when it does [you sometimes] get a kid who will say, "They're not here," but actually they were. [It's] really hit and miss, [so often I] have to drive to the community [to talk] face-to-face. [Often] I just can't get hold of people [any other way]." (Nadine Warbrick, as above, 2023)

Affordability

Pre-paid mobile data costs have increased significantly since 2022

Affordability of mobile and internet access has become an increasing issue for Gäṉgaṉ residents, with household expenditure on pre-paid mobile rising from $159/month in 2022 to $266/month in 2024.

All mobile users in Gäṉgaṉ rely on prepaid mobile plans and the flexibility of pre-paid services over billed services. Household expenditure on pre-paid recharge is similar in Gäṉgaṉ to sites with consistent mobile access, despite Gäṉgaṉ residents only having mobile use when visiting Nhulunbuy or other communities.

This expenditure may seem surprising given the primary means of internet access is via free public Wi-Fi. However as most commonly used pre-paid vouchers have a 28-day refresh period, users need to recharge monthly to retain an active SIM whether they have used the data or not. **With Telstra pre-paid recharge rates about to increase for the third time in three years,[19] a more suitable pre-paid product is needed that allows longer refresh periods to reduce expenditure for homelands residents.**

With very low household incomes in Gäṉgaṉ (ABS 2021), affordability of communications services is a key obstacle to digital inclusion. **96% of respondents in 2024 reported compromising on data or speed due to cost (up from 73% in 2022), and 50% reported always cutting back on essentials such as food or bills to afford connectivity (41% in 2022). In 2024, 86% of survey respondents who were low or non-internet users gave the reason, "The internet is too expensive for me", for not using the internet more often (up from 70% in 2022).**

Low and unreliable incomes are a key reason for the lack of uptake of household broadband services such as Starlink or NBN, which are primarily available via post-paid options. The reliance on pre-paid mobile services, with higher data costs, was described by a consumer advocate as a 'poverty premium'.

> "First Nations people pay the poverty premium … We have people who have to do pre-paid electricity [and] pre-paid for phones, where they have to pay a higher amount [than consumers on post-paid services, making it] a poverty premium."
>
> - Bettina Cooper, Mob Strong Financial Counsellor and Strategy Lead, Mob Strong Debt Help, 2024

We have not been back to Gäṉgaṉ since the Wi-Fi mesh network was installed to see if this has reduced expenditure on pre-paid mobile services. However, back on our experience in other sites, it is likely that expenditure remains similar due to the need to maintain SIMs to make and receive calls via Wi-Fi and to retain mobile data for use when visiting Nhulunbuy or other communities.

Replacement costs of mobile devices is also a challenge

The cost of mobile phones is a major barrier to digital inclusion, especially given the lack of availability in the community. With access to online services now essential in homelands without face-to-face services, and a lack of public computer access, having a mobile phone was described as a human right.

[19] The basic pre-paid rate is going up on 5th May 2026 $5 from $39 to $44 (https://www.telstra.com.au/exchange/plan-pricing-updates). This is the third increase since 2023 when the most common recharge was $30, with a $20 option also available.

> "It is almost a basic human right now, that you need a digital device. [Without it], you are excluded from entering into basic [services] such as purchasing, Centrelink, [and] getting access to your bank account, getting access to emergency services."
>
> - Bettina Cooper, Mob Strong Financial Counsellor and Strategy Lead, Mob Strong Debt Help, 2024

This was described as a policy gap in efforts to address digital inclusion for First nations people.

- "We're closing the digital gap by putting [up] more Telstra towers [or Wi-Fi services]. But [a key obstacle is] the affordability of the basic handset. Not [only] the ongoing affordability, but it's also the accessibility and useability of the basic handset. Until we realise that we haven't created that even foundation, we will fix nothing." (Bettina Cooper, as above, 2024)

There is high turnover of mobile devices, primarily due to broken screens. Advocates urged that mobile phones should be sold with a protective case to reduce the risk of screen damage.

> "The other thing I think they should have is a proper rubberised case ... so they don't just break the screen and need another one in three months."
>
> - Mark Holden, Mob Strong Senior Solicitor and Policy Advocate, Mob Strong Debt Help, Yirrkala, 2024

Very few mobile phones are currently sold with a protective casing in remote community stores we have visited, with very few stores having cases available separately. By requiring suppliers to include rubberised cases on low-cost and popular models, device turnover is likely to reduce significantly.

As outlined in the Access section, the challenges in purchasing mobile phones results in an increased rate of sharing of devices which can bring other issues. This can increase privacy or security risks for users, including financial abuse of Elders.

- "[With] a shared device there's greater risk of financial abuse, because a family member helps them with the passcode, or a support worker helps with the passcode, now everybody has the passcode, now there's greater risk." (Bettina Cooper, as above, 2024)

Despite major telco fines for mis-selling practices, we heard of ongoing risks of mis-selling

In the last five years, there have been two major penalties against telecommunications providers for engaging in unconscionable conduct when selling mobile phones and contracts. Telstra received a $50million fine in 2021 and Optus $100million in September 2025.[20] In both cases, the mis-selling disproportionately impacted First Nations people, especially those from remote communities. Both carriers have made significant changes to avoid further mis-selling practices, including separating devices costs from plans, removing lock-in contracts and changes to sales practices in stores.

However, financial counsellors working in remote communities in Arnhem Land have told us that similar mis-selling practices continue from other providers, with the issue not yet fully resolved.

We also continue to hear of risks of upselling devices in stores.

[20] https://www.accc.gov.au/media-release/federal-court-orders-optus-to-pay-100m-penalty-for-unconscionable-conduct

- "The cost of a device [is a challenge]. First Nations people can often be [upsold] when they go into a store to buy a device that's beyond what they need … When our clients go to these stores, often they're guided to the shiny, glitzy thing rather than the [most affordable device to] meet [their] needs, [which is] reprehensible behaviour." (Bettina Cooper, Mob Strong Financial Counsellor and Strategy Lead, Mob Strong Debt Help, 2024)

Centrepay payments can add to ongoing financial burden

Centrepay enables direct deductions of payments from Centrelink income for products or services provided by approved suppliers. There has been a rapid increase in the number of providers now registered to deliver products or services using Centrepay financing.

"There's 15,000 businesses that are now signed up to Centrepay … Northern Territory's First Nations people are disproportionally represented [as customers]."

- **Bettina Cooper, as above, 2024**

While the Centrepay system was developed to assist people on Centrelink benefits to manage the financial impact of high-costs items, there are concerns that the system could add to financial hardship.

A team from financial support group Mob Strong Debt Help were in Yirrkala during our visit. They outlined concerns about limited awareness and support with the application process or understanding of contractual obligations and potential consequences of Centrepay debts.

- "[There are] many steps [involved in a Centrepay application]. Nobody's ever shown [applicants] how to do that. They have to work it out as if it is navigable by common sense, and it's not common sense." (Bettina Cooper, as above, 2024)

Centrepay issues are compounded by systemic challenges for people on very low incomes.

- "There is a complete barrier on people being able to try to put a stop to [payments. The scheme provides] guaranteed income [for] these businesses [because] the money goes [direct from Centrelink to the] business's account." (Mark Holden, Mob Strong Senior Solicitor and Policy Advocate, Mob Strong Debt Help, Yirrkala, 2024)

For Laynhapuy homeland residents, it is also difficult to stop Centrepay payments due to the nearest Centrelink office being in Nhulunbuy.

- "[For homeland residents] to travel to a Centrelink office sometimes could be three or four hours. [And then they have to go to] that service to say where's my money gone? [Then they rely on support from] emergency relief services." (Bettina Cooper, as above, 2024)

Concerns were raised about the impact of high-interest loan services like Afterpay

There was also concern raised about television promotions resulting in people signing up for products or services they cannot afford. While legal, these were also referred to as 'phishing' scams.

- "I've seen any number of scams, whether it be people getting put onto phone plans that are just totally and utterly inappropriate [or] people [signing up for deals they've] seen on television [like] fantastic fishing equipment that is beyond their financial capabilities … They sign up [and] then the money comes out of their account every month, and you [can't] turn that tap off. [Those] enticements [are literally] phishing, [designed to] lure them in [and] they get hooked up. [I try to help people get out of] contracts that they've entered into [but I can only do that if] the Wi-Fi is working and the phone is working." (Geoff Ellis, LHAC legal support, 2023)

High-interest loans are a prime example of phishing.

- "Afterpay is one that the people over-commit themselves [to. Also] there's a lending mob in Darwin [who gave a client a car] loan [but] the interest rate was 150%. [The loan] may be only $1,000 [but they] ended up paying $2,500 in just over 12 months. I put it down as corrupt activity." (Geoff Ellis, as above, 2023)

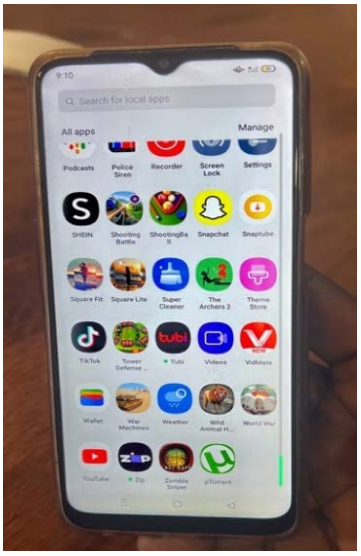


Figure 28: Social media, streaming apps and games on a resident's mobile phone

Digital Ability

Digital Ability scores have changed little over the three years, but are slightly above average

Results of surveys taken across our three visits show little change in digital ability scores, as shown in Table 1 below. The total in 2024 was 15.84 out of 30, only 0.07 above the 2022 score. The highest results in 2024 are in the areas of Basic Skills (3.14 out of 5) and Social Skills (3.01 out of 5), which covers use of social media and online communications.

	Basic skills (/5)	Advanced skills (/5)	Information navigation (/5)	Social skills (/5)	Creative skills (/5)	Smart tools (/5)	Total (/ 30)
2022	3.22	2.87	2.42	2.61	2.36	2.29	**15.77**
2023	2.77	2.30	2.09	2.23	1.59	2.18	**13.16**
2024	3.14	2.71	2.71	3.01	2.21	2.06	**15.84**

Table 1: Digital Ability scores for Gäṉgaṉ residents, using a combined score out of 30 from 6 key skill areas

To put the results in context, the average score across the 12 research sites in 2024 was 15.3, meaning that Gäṉgaṉ's results are slightly above average for people living in remote First Nations communities. This is a somewhat surprising result given the very limited internet and computer access in Gäṉgaṉ, however is still well below the national non-First Nations average of 23.2 out of 30.

The relatively high Digital Ability likely points to high reliance on digital technologies for social communication and to access news, information and online services, given the remoteness and lack of access to face-to-face services. There remains an urgent need for programs and support to address digital ability, particularly for people aged over 45, people with disability and those with limited educational attainment.

Digital literacy is becoming a life skill, but online use is currently focused on key tools

Digital literacy is rapidly becoming a necessary life skill for accessing online services and information, communicating, learning, and using digital technologies in the workplace and at home. At the time of our 2024 Gäṉgaṉ survey, we found that **88% of respondents were internet users**, however most use was limited to a small range of applications and online services such as banking, myGov, social media and online entertainment. This is to be expected given the restricted internet access and mobile-only use.

Of the 88% of respondents who had used the internet within the last six months in 2024:

- **84% had used online banking**
- **69% had accessed online government services such as myGov or Centrelink**
- **53% had done some form of online learning or study**
- **41% had compared prices of products or services on the internet, however only 18% had bought or sold items online.**

Most usage is for social media and content streaming, with 96% of regular users keeping in touch with family or friends online and 98% having used an online entertainment service in the last six months.

> "[I use] Facebook [and] Messenger, chat there with my friends … Sometimes I use internet [to watch] Netflix [and Tubi or] download music … I don't use [MyGov] much, just banking." (Djamika Ganambarr, Youth worker/Co-researcher, 2023)

Among the 88% of regular internet users:

- **82% said they knew how to connect to a Wi-Fi network (indicated 'very true' or 'mostly true')**
- **58% said they could find and install apps**
- **64% could open a new internet browser tab**
- **58% were able to send and receive emails**
- **38% could complete online forms.**

Digital literacy tends to be lowest among people over 50 years of age, people with disability and those with limited English literacy. **Low or non-internet users identified the following key barriers to internet use in our survey: lack of access to the internet (100%), low confidence (86%), cost (86%) and lack of content in their own language (86%).**

Survey data reinforces digital literacy and skill challenges. In 2024, 45% of respondents reported understanding only a few words of spoken English, and 35% reported limited written English comprehension, indicating significant language barriers. Additionally, among those with limited or no internet use, 86% reported not being confident using the internet and 86% cited cost as a barrier.

Digital skills are also limited across key areas. For example, only 21% reported being very confident downloading and opening files, and 21% felt confident completing online forms. Information evaluation skills are particularly low, with only 1% reporting ability to check information trustworthiness.

Young people have high levels of digital ability, however may not result in use of online services.

> "With some of the young people that I work with, [I've noticed they are] very clever on the social media [but when it comes to using online] services on the phone, there [is] not a good understanding of that … There still needs to be a bit of work [to address that]." (Kerry Legge, LHAC CEO, 2023)

Need for digital literacy training and support, with calls for in-person delivery

With restricted access to computers and support outside the school, there are limited opportunities to develop more advanced capabilities and workplace readiness digital skills. With improved internet access planned for Gäṉgaṉ, there has been demand for support in use of digital devices and online services.

> "With digital inclusion there still needs to [be support for people in] moving toward that equity … I remember when I didn't have a smart phone and all the education that I received around correct use of social media. [I] hope we don't just give people something and not also give them the means to make the change towards that."
>
> - Kerry Legge, LHAC CEO, 2022

There is strong demand for ongoing digital training in use of mobile devices, internet search and online services such as banking and MyGov.

- "We need to learn how to use the technology in the right way. Like to [use online] banking and to do phone calls, send message, emails or whatever." (Yinimala Gumana, Community leader/Ranger Coordinator, 2024)
- "We need training [in] how to use the internet and how to use Wi-Fi and any stuff we've never seen … Some people know and some people need to learn. They need some people experienced [in] how to use laptop [and] how to use Westpac [and] MyGov." (Djamika Ganambarr, Youth worker/Co-researcher, 2023)

There was advocacy for the need for culturally appropriate learning that reflects community preferences.

- "The best way to educate people is let them be educated somewhere they're comfortable with … Each community will have an individual need; it's about identifying what that community says is the right people, [place and] way to learn. It may be sessions at the library, it may be sessions sitting around in a circle under a tree." (Bettina Cooper, as above, 2024)

Local digital mentor roles could be a benefit, but adequate support is needed for success

Funding for a digital mentors program was announced in the 2024 Federal budget but is yet to be rolled out. We heard interest in the concept of having digital mentor roles in Laynhapuy homelands.

- "[It would be good to have a] digital mentor working alongside [people to learn]. That [could be] a permanent [role] working for community [and] working with Yolŋu … It will be manymuk [good]." (Yinimala Gumana, as above, 2024)

Currently there is some informal mentor support, which could be built upon.

- "I [am] always helping people for open the bank account, like online banking [and] Centrelink report for the JobSeeker … I sometimes help with online banking for transfer money." (Xephina Nunggumajbarr, Clinic Worker, Gäŋgaŋ, 2024)

Elder Marrpalawuy Marika urged that training be co-delivered with Yolŋu.

> **"Side-by-side with Yolŋu [is the best approach] … It's best to have Yolŋu arm and Balanda arm together [so] we can work on the same level, on the same table. [Also] teaching side-by-side with the younger generations and with the older. [That way Elders] can be taught how to get into the communication and [digital] work more."**
>
> **- Marrpalawuy Marika, Gäŋgaŋ Traditional Owner, 2023**

However interviewees also outlined the need for this type of role to have strong cultural guidance and be well-supported with regional coordination and resourcing.

- "In theory [digital mentor roles could work out here, but] that person needs to be set up for success [with the right knowledge]. Maybe they'd be shadowing someone [initially. Some young] people exhibit a lot of capability [and] confidence, but they need [support and training to answer] bigger questions and find information. [And they would need to be] part of a wider group [so] that they're hearing other stories [and learning together. That way we ensure] that true transfer of knowledge [and] empowerment." (Kerry Legge, LHAC CEO, 2023)

It was recommended that a digital mentor program build on existing programs by trusted agencies.

- "Building on things that people are already familiar with, building on existing organisations and facilities that people use now, is always the key. It's the existing ecology of communication … What people are familiar with is what they will naturally build upon [and] feel comfortable with." (Kerry Legge, as above, 2023)

There is currently no lead agency to support digital literacy

There is no agency currently delivering IT training or support in the region, with a question about who would be the appropriate agency to do this. Possible agencies referred to included ARDS, LHAC youth program or Yolŋu Business Enterprises.

Laynhapuy School said they may be able to play a role in providing basic online skills for community members if they have improved connectivity and computers in schools. There was support for this model. However, a new community office being planned could also be used for training and computer skills.

- [I'm] trying to get [a community] office built, so we can have our own computer and people can start doing their courses and learn." (Billy Gumana, Community leader/CDP Supervisor, 2024)

With a regional focus on increased vocational training, digital skills could also become a role of the CDP provider Arnhem Land Progress Association (ALPA) in the future.

- "With the exit of Rio Tinto [from Gove Peninsula] by 2030 [this region] could be a bit more of an education hub. [There's] going to be a very different type of focus up here [with more vocation specific digital training for rangers, cultural and media production, health and education]." (Kerry Legge, as above, 2022)

Prior to our 2023 visit, nbn community ambassador Hayley Hardy had visited Gäŋgaŋ.

- "[Hayley got] a first-hand understanding of how fast the internet was, and what kind of problems people were having, [such as] access to bank, people not able to log on [or not] understanding the app. Some apps are really hard to follow. [She also wanted to find out if nbn's] community information is appropriate as well. [Most of their] videos were in English … but they were relatable." (Nadine Warbrick, LHAC Social and Emotional Wellbeing Worker, 2023)

Nadine pointed out that learning resources in language are the most effective, with resources that are visual and have few or no words also being effective.

Hayley's visit demonstrated the need for digital support in Gäŋgaŋ.

- "[She] ended up almost being a digital support worker. She had a line of 11 people at one stage here in Gäŋgaŋ, and people were saying, "I forgot my password. I need some help with calling Westpac." [It's good] having that person who's really good at bridging the gap between those worlds. [She] got straight to work [on] people's phones [and] sorted [out their accounts]." (Nadine Warbrick, as above, 2023)

Hayley also delivered some online safety training during her visit.

- "[Hayley did a] presentation to the women here about shaming people online, like Facebook, and trolling and being abusive on Facebook, so there was a good discussion [among the women]. And she did another one with children [where she showed] a video about YouTube safety." (Nadine Warbrick, as above, 2023)

Figure 29: Visual resources used for family and domestic violence awareness, including online safety

With online activity increasing, cyber safety training and support is needed

With increasing internet access and use of mobile phones, especially by young people, there is growing awareness of the need for cyber-safety training and support, such as that provided by Hayley Hardy.

- "Every kid's got a device [now], everyone's listening to music, TikTok's a thing [and] Facebook … Communities [are] talking about cyber bullying and cyber safety [which] wasn't on our radar [previously] because students didn't have their own devices." (Haidee Dentith, former Laynhapuy School Principal, 2022)

Cyber safety refers to safe and responsible use of the internet, social media, online games, smart phones and other connected devices. Cyber safety training aims to provide the knowledge and skills needed to stay safe online. It aims to raise awareness about the range of potential online abuse or harms, including scams or fraud, bullying, jealousing,[21] trolling, and exposure to pornography or offensive content.

With increased broadband access planned for Gäṉgaṉ, residents and agency staff raised concerns about increased cyber-safety risks, with requests for more online safety awareness in preparation.

- "[Sometimes people] argue each other through the phone [or are] bullying and other things … That makes trouble [and] is not [good] for the community and for our wellbeing. [People need] the skills [to] understand [about online safety]." (Yinimala Gumana, Community leader/Ranger Coordinator, 2022)
- "Sometimes they tease one another through Messenger [or] Facebook … That's not good for kids growing in homeland … That's not healthy lifestyle." (Djamika Ganambarr, Youth worker/Co-researcher, 2023)

With Wi-Fi networks and satellite small cell mobile services planned in several Laynhapuy homelands, the potential for increased cyber-bullying was raised as a particular concern.

- "We would like to see parental control over kids' use of Facebook. Our main concern is cyber bullying, people having a go at each other through Facebook. We need this to be addressed before putting mobile into communities." (Yananymul Munuŋgurr, LHAC Director/Garrthalala resident, 2022)
- "There's a lot of bullying online. [A serious incident may] start with kids on phones and Facebook, and then everyone would jump on. [It's] like public shaming [which is] incredibly damaging for people [and] escalates domestic violence, aggression in families." (Nadine Warbrick, LHAC Social and Emotional Wellbeing Worker, 2023)

We heard that young people in Yirrkala are posting fight videos. This is a common trend in many remote communities that increases the normalisation of violence and promotes copy-cat behaviour.

- "[In Yirrkala] I see kids fighting [and others] pull[ing] out cell phones to record, [sometimes] just mucking around fights too. And that [is] exposing children to more violence." (Nadine Warbrick, as above, 2023)

While some Elders want to limit internet access, others argued that cyber-safety awareness is a more effective long-term strategy.

[21] 'Jealousing' can refer to someone being jealous of their partner due to social media or phone use, potentially leading to domestic violence or control.

> "The nbn [Wi-Fi] can block certain sites [but] that's not always going to be the case if people go into other towns that have phone coverage. So how do we educate the younger generation on appropriate use?"
>
> - Ebony Tinirau, Health and Communities Manager, LHAC, Yirrkala, 2024

- "There will always be some problems in bullying and [other online safety issues]. But [these issues are not] peculiar to the remote communities. [It] happens everywhere. [Rather than] try and prevent [access, we need] education [and local] leadership. [For] the children, [the school could include lessons on] how to deal with bullying and [social] media [harms]." (Geoff Ellis, LHAC legal support, 2023)

The Laynhapuy Homeland School already provides cyber-safety awareness within the curriculum, however are keen to balance this with the beneficial aspects of online services and activities. This is a challenging task when most classrooms have limited internet access (see Case Study in Chapter 6).

- "We're working on [supporting young people to navigate] the cyber bullying and social media space, sometimes in collaboration with other service providers on our well-being camps, through our Makarrata [senior] program, and through schooling. But [we also want to demonstrate to] students [the] benefits of connectivity [and] talk about all these things on balance. [But] it's really hard to be able to have these conversations about the online world, [both] the benefits and [the] challenges, when the school buildings aren't places where you can model [safe online activity]." (Abi White, Laynhapuy Homelands School Principal, 2026)

The Laynhapuy youth program can assist in cyber-safety awareness, with cultural guidance from Elders.

- "We can incorporate [cyber-safety in the youth program. We work] closely with the school [to run] wellbeing camps. [We] discuss online safety [within] a cultural framework [of] what's appropriate and what's not, [working] through the Elders." (Rachel Godley, LHAC Youth Program Manager, 2022)

In a region that has strict cultural protocols around how news of someone passing away is communicated, there is also concern about the erosion of cultural protocols via social media.

- "Recently a fella died [in] town and that was put on Facebook before people were told ... There was a huge stir over that. [It's] happened a few times [with] people becoming aware of people passing away before they're even told culturally appropriately. [Yolŋu now] have to consider [how to extend cultural protocols to the online world]." (Lonnie Dentith, Nurse, Laynhapuy Health, 2022)

Increased scam messages and fraudulent services led to calls for awareness and support

In 2024 we heard that scam calls or messages had become more prevalent in Gäŋgaŋ despite the lack of mobile coverage.

- "We had problem here at Gäŋgaŋ [where] people [got a call from] Sydney, but they're not from Sydney. They're from overseas ... They try to trick us. There's all sorts of tricks around [from scammers], they trick people." (Billy Gumana, Community leader/CDP Supervisor, 2024)
- "[One time a person kept calling the] payphone and scam people and try to ask for that person. [But] I always try to stop that person ... Then he stopped." (Djamika Ganambarr, Coresearcher, Youth Worker, Gäŋgaŋ, 2024)

We heard examples of very targeted scams especially following mining royalty payments. We also heard of scammers impersonating staff from local agencies.

- "I get impersonated quite a lot. Someone sends emails on my behalf asking people to do things and it's not me." (Kerry Legge, LHAC CEO, 2024)

With scam calls, texts and online messages becoming more commonplace, it would be timely to increase scam awareness following the introduction of the new Wi-Fi network.

- "[Most] people understand scams, like random people ringing and leaving messages. It's the text messages with the 'click this link' [that] will catch people. We [tell people], 'Don't click the link. Don't click that random email'." (Nadine Warbrick, LHAC Social and Emotional Wellbeing Worker, 2023)
- "Sometimes they ring with unknown calling, and we need [to] learn about that one. [Maybe] not answer the call [or check message before we] reply back to them … We need this kind of training as well, how we want to learn about … digital world. Not to get that culture into our world but able to just … know about it." (Yinimala Gumana, Community leader/Ranger Coordinator, 2024)

There were calls for a locally managed community archive

Currently there is archival material from the region held at the Buku-Larnngay Mulka Centre in Yirrkala. However, with limited access to this collection, community leaders talked about wanting a specific Gäṉgaṉ archive and a place in the community to learn and see the archive and local cultural history.

> "We were thinking about [setting up our own] archive here. At the moment we have to go all the way to Yirrkala to get access [to the] archive. But much better for the homeland people [to have our] archive [here in Gäṉgaṉ] for the people to use, so everyone can [see] the old footage or audios or images [of] our old people and our history."
>
> - Yinimala Gumana, Community leader/Ranger Coordinator, 2024

The focus is on retaining cultural heritage for future generations.

- "[We want children] to learn about the history, about the culture, about the language, about the family connections. [It's good] for the kids [to know who] their grandfathers are, or uncle [or] family members from the past. "(Yinimala Gumana, Community leader/Ranger Coordinator, 2024)

There was a strong focus on local management of access to the archive.

- "We're just going to keep all the audio, the images and whatever in the archive, but we're not [allowing people to take items away]. That is our [cultural] property. We need to be aware of that one … Yolŋu [and] Balanda need to understand." (Yinimala Gumana, Community leader/Ranger Coordinator, 2024)

05. CASE STUDY: IMPACT OF THE COMMUNITY Wi-Fi NETWORK IN GÄNGAN

The nbn Community Wi-Fi Network was installed in October 2024

Laynhapuy homelands Gäŋgaŋ and Wandawuy were among 23 remote communities provided with community-wide Wi-Fi networks by nbn under an Australian Government-funded community Wi-Fi program. This program was among a number of 2024 Budget measures in response to First Nations Digital Inclusion Advisory Group recommendations aimed at addressing access and affordability barriers and improving outcomes on Closing the Gap Target 17. Along with NTG, our team recommended that Gäŋgaŋ and Wandawuy be considered as part of this rollout.

The nbn community Wi-Fi network was activated in Gäŋgaŋ on 12 October 2024 following a period of consultation by contractor, Australian Private Networks (APN), with community leaders and Laynhapuy Homelands AC staff over the network design and operations.

The network provides free outdoor access to all residences, with indoor access at the Laynhapuy Health Clinic. Access hours are restricted to 8.45am-6.30pm each day. Content filtering is applied to content deemed illegal, inappropriate or objectionable, including pornography, liquor e-commerce and gambling, as well as any other content or sites that the community choose to block. This community governance is a critical element of the project design.

nbn and APN use remote monitoring to ensure network reliability and quality, with regular engagement of Digital Champions and community contacts to identify and respond to impacts on service performance.

Based on the last 6 months:

- **An average of 1.5 TB of data is consumed by 237 devices each month**
- **Users connecting to the network, consume an average of 6.8GB per device**
- **General web browsing, including browser-based streaming and gaming, accounts for 46% of total traffic consumed, followed by 12% on TikTok and 42% other (uncategorised)**

Feedback from the community shows the service is being consistently used, with spikes in data usage when events bring visitors to community. Local leaders actively manage and reduce operating hours to support community wellbeing. Importantly, the Wi-Fi has enabled Gäŋgaŋ residents to participate in key events such as the Laynhapuy Homelands Aboriginal Corporation AGM without needing to travel the 398km round trip, demonstrating clear improvements in access and convenience.

Community hopes and concerns about a previously planned broadband service

Our previous reports outlined a former project planned by Field Solutions Group (FSG) to install a satellite backhaul broadband solution in Gäŋgaŋ and Wandawuy homelands and two other NT communities in the Barkly region (Arawerr and Mungkarta). The project, named Telecommunications in Remote Aboriginal Communities (TRAC), was initiated by NTG, with Regional Connectivity Program funding approved in 2021 for Field Solutions Group (FSG) to manage project delivery. However, after protracted efforts to vary the funding agreement with reduced scope, the funding offer was withdrawn and the project did not proceed.

While the network design was not provided, the description suggested it would be a community wide Wi-Fi network connected internally to each house with pre-paid vouchers required for data use. Despite having funding approved under the Regional Connectivity Program in 2021, the project was eventually cancelled in 2023 after unsuccessful efforts by FSG to revise the scope of the project.

After several years of waiting and the community still under-served, residents were disappointed at having to re-start discussions about a suitable broadband solution to meet their needs. Agency staff described how Laynhapuy homelands residents have often been let down by promises of projects that never eventuate. As researchers who assisted the community to consider their preferences for the project, we also played a role in building community expectations. However, this delay provided an opportunity to ensure a more community-led model, and increased confidence to outline their needs.

Previous calls for local decision making over network design, access hours and content

Since our first visit to Gäŋgaŋ in 2022, residents and Elders have been looking forward to improved communications and internet access. However, with a history of governance over all aspects of the community's operations, Gäŋgaŋ Traditional Owners were keen for this governance to also extend to telecommunications services. For several years, they have set access hours for the Wi-Fi hotspot at the shop (2-8pm weekdays), providing an effective self-managed model of internet access.

Gäŋgaŋ community leaders wanted input on the system design and operations to reduce potential impact on their homeland's strong social and cultural cohesion.

+

"It's good to be able to communicate [with] others. [But we don't want] our kids [and adults using] the mobile every day [to] look at Facebook or [other social media]. That is very worrying for me. [If people] sit around [and] play with the phone all night or all day then we'll miss [out on] important things like learning, schooling, work [and] mainly the culture because in Yolŋu world we have [strong] culture. ... We're still connecting to this country [and have a] kinship and law system ... We don't want to lose everything [because people are using] phones or technology [and become] addicted [to] games or whatever."

- Yinimala Gumana, Community leader/Ranger Coordinator, 2022

In 2022 and 2023 we heard concerns about the potential impact of 24/7 Wi-Fi access on school and work attendance and family cultural engagement, based on experience in other communities. Community leaders wanted the ability to set curfew hours to reduce this impact.

+

"[We restrict the Wi-Fi access times to prevent] kids waking up late [and missing] school. [When the broadband network comes] we don't want to see kids wake up all night [in] our community. [Maybe on weekends we turn it off] a bit late, maybe 10.00pm. We want our community to live in peace, and to have respect [and] for the kids to learn the culture."

- Billy Gumana, CDP Supervisor/Traditional Owner, 2022

+ "[We want to be] able to stop the internet, maybe use it only [during daytime] for our work [and] to communicate and send email and check [our] online services." (Yinimala Gumana, Community leader/Ranger Coordinator, 2022)
+ "With the Wi-Fi, we can control what time we want [it on]. The children need to go to bed and then attend school the next day, [not] staying up late on the internet." (Marrpalawuy Marika, Gäŋgaŋ Traditional Owner, 2023)
+ "Community members [want a] cut-off time at night [and limited access to text or] call at night ... The community have to be empowered to make these decisions [and] not just one size fits all [solutions. What Gäŋgaŋ wants] might not be the same as Wandawuy." (Rachel Godley, LHAC Youth Program Manager, 2022)

The Laynhapuy School also raised concerns about potential impacts of broadband access on school attendance, especially in community with 4G coverage.

- "The biggest risk [is] kids accessing internet all night. [To avoid that] communities [limit] the Wi-Fi [up to] 8.00pm. Whereas if it's a 4G mobile tower, you can't turn [it off, so we will likely] see a spike [in] absence." (Haidee Dentith, Laynhapuy Homelands School Principal, 2022)

The community wanted content filtering to prevent access to inappropriate content by young people.

- "The Elders [and] parents do not want access to [inappropriate content or pornography] which youth [could be] watching on their phones, on social media." (Rachel Godley, as above, 2022)

There were also concerns about online behaviour, based on experiences from other communities.

- "I don't want … people to use [the internet] for bad things [like] bullying [or texting] bad words …. We should respect one another. [We] want to use [it] for good purpose and for good reason, [to] send a message, text, get email and send email, or take photos or do video recording." (Yinimala Gumana, as above, 2022)
- "The Wi-Fi coverage would be good [but] we don't want [our children] getting … inappropriate content [or talking] wrong way on Facebook. It's been a huge problem [elsewhere]." (Marrpalawuy Marika, Gäṉgaṉ Traditional Owner, 2023)

Based on these concerns, our team assisted the community to outline its preferences for a partnership approach with the network provider to ensure local governance. They outlined the following criteria:

- **Data access to be restricted** overnight, with a curfew time to be determined by the community, allowing only phone calls and texts overnight
- **Content filtering** applied on all internet use through the service
- Ability to locally **'switch off'** data access if there is misuse, to allow time to address the situation before reinstating the service
- If a pre-paid model is used, data rates should be **affordable** and the recharge process simple
- Use of government services, banking and other key services to be **unmetered** (free use).

We also heard calls for a change management plan to align with the introduction of a new service.

> "You can't just introduce something and not bring people along with the change. [You need to] talk about what you had before and what's now and what you [need to] know."
>
> — Kerry Legge, LHAC CEO, 2022

While the initial project did not go ahead, these criteria helped to inform the community governance model for the nbn Community Wi-Fi project. Fortunately, it aligned closely with the proposed model.

Updates to community-led design criteria for broadband service 2024

Community residents were looking forward to having free internet access, fast download speed and unlimited data use from the nbn Wi-Fi network. The system is designed to address both access and affordability barriers, the primary contributors to digital exclusion in remote First Nations communities.

The network uses a series of overlapping hotspots to reach all residences. However, it primarily supports outdoor access due to limited Wi-Fi penetration inside metal-clad houses As the original service was planned to provide indoor access, we heard mixed reactions to outdoor only access.

- "[With the Wi-Fi] you get more signal sitting outside. I [don't know if] outside is more better … than inside. [It may be] a problem [when] you want to download some movies or call friends or call families." (Billy Gumana, Community leader/CDP Supervisor, 2024)

In 2024, prior to the Wi-Fi network being rolled out, community leaders and stakeholders again raised questions and outlined their preferences for the network's design and operations. There were calls for adequate community consultation by nbn and APN prior to rollout.

"[Community control] is what we want. [We want] NBN to come and sit down with us so we can get all the stories first, and then we'll bring our story to them and let them know [that] we don't want the kids to get [non-stop internet access] in homeland."

- Billy Gumana, Community leader/CDP Supervisor, 2024

They proposed daily curfew times for the community Wi-Fi.

- "During weekdays, maybe it'll open from 8 o'clock in the morning, and then shut down [at] maybe 10pm. [We don't want kids] missing out attending school because of the Wi-Fi, you know, sitting out all night and not respecting their own families, parents." (Billy Gumana, as above, 2024)
- "[The Wi-Fi should be] switched off night times and put the password on [so the kids can't use] that all the night [for] Facebook or Instagram [or games]." (Xephina Nunggumajbarr, Clinic Worker, Gäŋgaŋ, 2024)

The nbn model enables curfews to be set as well as community decision making over websites or content types to be filtered out, with pornography and gambling sites filtered out. While community leaders welcomed the ability for input on content filtering, they wanted to know how to do this in practice.

- "[Content filtering] is something we need to know about … Yolŋu doesn't know about this kind of technology … We don't want our community [having trouble. We see people] causing troubles, through the internet [so] we need to set that [filtering]." (Yinimala Gumana, Community leader/Ranger Coordinator, 2024)
- "I'm a bit worried about gambling, because that shouldn't be happening in homelands. [But] it's not my decision [to] stop them from playing games. It's up to them." (Billy Gumana, Community leader/CDP Supervisor, 2024)

We heard a request for ongoing consultation during the lifetime of the project to review community criteria as well as a prompt response timeframe if the community seeks changes.

"It's quite easy to say at the forefront that this is going to be community controlled and as the years go on [the] community has lost control for whatever reasons, [maybe] due to an upgrade in IT. [So we need ongoing] consultation around changes. [Also] I'd like to [see] 24-hour turnaround of answering to enquiries, particularly [community requests if] something needs to be changed."

- Ebony Tinirau, Health and Communities Manager, LHAC, Yirrkala, 2024

There were also questions raised about the network's reliability during rain and heavy cloud, common during the monsoon period (November to April). This was a key reason Laynhapuy Health moved to Starlink for its clinics and store EFTPOS.

- "We need to have access through the cloudy day or [bad] weather. So [even in] bad weather we can access [internet]." (Yinimala Gumana, Community leader/Ranger Coordinator, 2024)

We also heard concerns about responsibility for the ongoing maintenance of the infrastructure. Former LHAC CEO Kerry Legge urged that there be clarity around maintenance of the network.

- "When they put [the Wi-Fi network] in, we would expect that someone's got a maintenance contract for it, and it's well understood by the community and by Laynhapuy." (Kerry Legge, LHAC CEO, 2024)

Network operations and maintenance are covered under the Australian Government funding for a period of five years, up to 2029/30.

Feedback on the network post-installation

The nbn usage data (page 48) shows high community use of the Wi-Fi network, with feedback that it is greatly appreciated and has improved community internet and voice access. However, as we have not visited Gäŋgaŋ since the network was installed, we have had limited direct community feedback.

In May 2025 we had a report from co-researcher Djamika Ganambarr that the Wi-Fi network was quite slow and intermittent at the time with residents returning to using the Wi-Fi hotspots at the store and clinic. While recent wet weather may have been a contributing factor, this appeared to be primarily due to a technical issue that was later resolved by APN. Gäŋgaŋ residents are reportedly now regularly using the Wi-Fi network for internet access, media streaming and calls via mobile from their homes, with a much improved sense of connectivity.

Djamika also asked about indoor access, given the lack of TV services in the community and the regular rainfall limiting outdoor use during wet season. He also repeated calls for a Wi-Fi service at the airport. This is located outside the range of the nbn network and would need a dedicated solution.

We heard that the curfew settings are longer in place, likely due to community demand for longer access hours. It is not clear if this was a decision by the community leaders or not.

- "[With the Wi-Fi network now] people are a bit more connected. [But] they've struggled with some [the] kids not going to bed because they're online. Gäŋgaŋ [and Wandawuy have] definitely had periods where it's been on late into the night. They have trialled turning it off [at the request of] community leaders [or] worked with Laynha to get it go off at a certain time. But then there might be other pressures from within the community where people actually want it on later." (Abi White, Laynhapuy Homelands School Principal, 2026)

Clearly Gäŋgaŋ residents greatly value having internet access available across the community. With the Wi-Fi network now established, community users are now actively participating in decision making on its management. We look forward to hearing updates on the network usage over time, capacity and digital inclusion outcomes as a result, as well as ongoing decision-making over its management.

06. CASE STUDY: CONNECTIVITY NEEDS FOR LAYNHAPUY HOMELANDS SCHOOL

About the Laynhapuy Homelands School

The Laynhapuy Homelands School manages nine homeland learning centres throughout the region, from Rorruwuy and Bremer Island down to Gäŋgaŋ. The school supports all ages from transition to Year 12, with senior students in Years 10 to 12 accessing a boarding program at its base in Garrthalala. Teachers are based in Yirrkala and visit the homelands during the week (from one to five days, including three days in Gäŋgaŋ). Yolŋu educators, known as Homeland Centre Teachers (HLCTs), deliver lessons in language and run the school on days when there are no visiting teachers.

Laynhapuy Schools rely on the NT Education Department managed STARS satellite network

As an NT Government school, internet is provided via the STARS satellite network in seven of the nine homelands including Gäŋgaŋ. The STARS network was installed about 15 years ago and shares bandwidth across all remote NT schools. However, it has reportedly had no major upgrades and has become more congested and unreliable over time. This impacts on staff access to email, basic internet and classroom applications including for roll call.

Figure 30: STARS satellite dish at Gäŋgaŋ school

"[When the STARS satellite service was installed about] 15 years ago [it] was pretty cutting edge and reliable. But over time [data use has] exponentially increased. Also, with the salt water in our coastal communities and the mould and heat and humidity in inland communities, that infrastructure requires quite a lot of maintenance. It's just become degraded and dysfunctional [so] now teachers can't rely on connecting. Some weeks [our] travelling staff [can] connect [enough] to check an e-mail [and] do basic things, [but] the next week they [may not] be able to connect at all, [sometimes] for four weeks in a row."

- Abi White, Laynhapuy Homelands School Principal, 2026

Poor internet connectivity limits use of online application and learning resources

In 2023 we again heard about the lack of high-speed internet in Gäŋgaŋ, which limits teachers to primarily using paper-based resources rather than benefiting from the range of online resources available.

- "[We need] faster internet [to use online learning resources]. It would be great to be able to quickly Google something or pop up a resource on an iPad, [including] 'English as an Additional Language' programs that all need internet … I would love to [have] students [use an iPad for] 20 minutes of a day [to] learn how to type [and] blend words, rather than the teachers having to [try to teach all levels from] transition to Year 9 in one class. These ICT resources [can start] where the student's level is. [For now we] carry this big black box around with the whole week's resources." (Anna Lansdown, Laynhapuy Homelands School teacher, 2023)

Educational apps run from a remote server, so there is a long delay to re-boot if the connection is lost.

- "[It] takes about four or five minutes to reboot every time your computer goes black. [It's] frustrating at times, not being able to just have internet quickly. [In a] mainstream context where you have access to internet, those things are taken for granted." (Anna Lansdown, Laynhapuy Homelands School teacher, 2023)

Despite calls for improved school connectivity over several years, the situation had not improved in 2024.

- "From the school's perspective, the satellite internet provided currently by NTDET in our homeland school buildings, including at Gäṉgaṉ, is aging and unreliable. We do not have Starlink (or anything similar) and so our internet service drops out and breaks down often. While I believe that schools should have high quality internet, the reality is that our staff often walk across homeland communities to the shop or Ranger Station to access Wi-Fi that works … There is a trial for Starlink happening in some other remote sites, but we are not part of the trial." (Abi White, Laynhapuy Homelands School Principal, email correspondence 2024)
- "[We still use STARS, through NT government. I think we] need a new one, a proper Wi-Fi, faster." (Jessica Ŋurruwutthun, Gäṉgaṉ Homeland Centre Teacher, 2024)

While Laynhapuy Homelands School employs an IT technician to address technical issues, these are seen as band-aid measures on a system that needs upgrading. We followed up in 2026 to check on the status of upgrades, only to hear that the situation had worsened.

"As a Visiting Teacher at Gäṉgaṉ, [I have found] the reliability of the [school] Wi-Fi has continued to deteriorate over time. At present, it commonly takes 10-15 minutes to load basic programs, [or it] does not load at all. This significantly disrupts teaching and communication, particularly essential systems such as rolls, emails, or learning platforms."

— Taylor McCormack, T-8 teacher, Laynhapuy Homelands School, by email 2/4/2026

The poor connectivity is particularly frustrating for community-based Homeland Centre Teachers (HLCTs) who rely on connectivity for administrative and teaching tasks and have reported issues over many years.

- "Homeland Centre Teachers have become increasingly frustrated with ongoing Wi-Fi and landline issues. As a result, many no longer rely on DET-provided internet or landlines to communicate [with the central school at Yirrkala]. Instead, they are using their own personal devices and mobile data to maintain contact and support classroom learning. [HLCTs have raised] these concerns repeatedly over many years without meaningful resolution [so no longer] report [internet issues] as there is little confidence [it] will be fixed. [Visiting] staff also [have to find] alternative community Wi-Fi sources, such as at the store or ranger station, to complete essential administrative or teaching tasks." (Taylor McCormack, as above, 2026)

The lack of connectivity leaves Homeland Centre Teachers with limited resources and support.

- "Visiting teachers might be there 3 1/2 days a week, but the other day [or two] Homeland Centre Teachers are by themselves. We do a lot [of] preparation and team planning for those times, [but] to not be able to use online content or reliably download lesson support materials [is] a real challenge [for them]. It could be a real asset [for kids to be] able to do online research [or use] learning apps [on the iPads]. To not have those options available [is not fair for] homeland teachers when they're by themselves." (Abi White, as above, 2026)

To provide a basic level of connectivity for staff use, Laynhapuy Homeland School had purchased Starlink Mini units in 2026 for staff use at some the Visting Office Quarters (VOQs) in homelands. Being portable, these units could also be used for when travelling in vehicles.

- "[We have installed] mini Starlinks [in] the VOQ's for now, but we can [also use them during travel to homelands]. Like when the cyclone was coming, teachers could bring them back and use them in the vehicles. We do still have old style sat phones, but [are considering] wrapping those up and using [a] Starlink mini in replacement of sat phones in the vehicles." (Abi White, as above, 2026)

However, it was noted that the ongoing cost of the Starlink units comes from Teaching & Learning funds, an expense that other NT schools with functional connectivity do not have to cover. Additionally, the Starlink satellite dish is placed outside the building where it could be interfered with, creating a potential safety risk in the instance of a lockdown situation or emergency.[22]

Difficulties with undertaking NAPLAN tests

During our 2022 visit, NAPLAN tests were underway at the school using an offline version of NAPLAN on iPads. While this reduces the impact of poor connectivity, other factors such as limited English and digital literacy result in uneven comparison with mainstream school students using online NAPLAN tests.

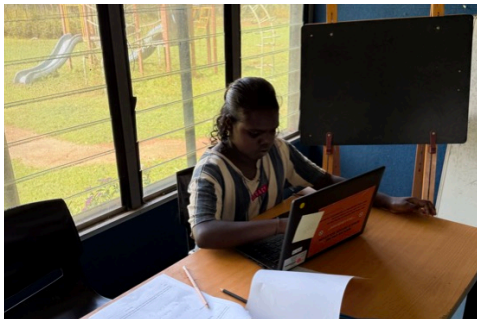


Figure 31: Student using SDS to undertake NAPLAN test in Gäŋgaŋ (Photo supplied by Laynhapuy Homelands School)

However, the ongoing connectivity challenges meant that the Laynhapuy Homelands School was the last school in Australia still reliant on the offline version of the NAPLAN test using pre-loaded iPads in 2025.

- "Last year we were the last school in Australia to be conducting NAPLAN testing using the 'single device solution' (SDS) which doesn't require connectivity on the ground. It means you can only test one student at a time, and is an arduous process to set up." (Abi White, as above, 2026)

While schools in other regions with similar connectivity issues used internet services from other agencies (e.g. community office or clinic) to enable students to undertake the NAPLAN tests, Laynhapuy Homelands School chose not to do this.

> **"[We] drew a line in the sand. [I said] I'm not sending staff over to other providers to use the Internet. [It's not] good optics for an education provider when teachers are running [to] the clinic to be able to download something for use in class. [I] don't think that schools should be the last place in the community to have connectivity in a day and age when it's a necessary part of life."**
>
> - **Abi White, as above, 2026**

However, in 2026, the NT Education Department insisted that Laynhapuy Homelands School move to online testing in all of the homeland schools, despite Garrthalala being the only site upgraded to Starlink.

[22] Email from Visiting Teacher Tom Hermes

- "This year [we] had to move to online testing [at all sites. In] the end we still had to use a combination of online testing and SDS in 2026 … It was interesting the push to not use SDS this year. [Maybe it was] an embarrassment that [SDS was still being used] in NT schools." (Abi White, as above, 2026)

Limited phone communications are an ongoing challenge for Gäṉgaṉ school

In Gäṉgaṉ, there are phones in each classroom as well as the Families as First Teachers (FAFT) pre-school and the visiting officers' quarters, all connected to a single line and phone number. Former Laynhapuy School Principal Haidee Dentith reported regular issues with the Gäṉgaṉ phone line, including outages and being very crackly, with Telstra reportedly taking a long time to respond to issues. The lack of reliability has made it difficult for school staff to stay connected with HLCTs as well as ensure workplace health and safety. The line did not have a dial tone for two days during our 2022 visit.

Once students reach Year 9, they progress to the Makarraṯa high school program, spending the week boarding at Garrthalala homeland. Students are collected weekly by charter planes and transported to Garrthalala. However, we heard that the lack of phone communications in the Gäṉgaṉ community restricted Laynhapuy School in communicating with families to arrange weekly charter flights.

> "Strong communication between school and families is central to the success of the Makarraṯa boarding program and to maintaining trust, cultural connection, and student wellbeing. Current connectivity challenges limit the school's ability to regularly contact families regarding flights, attendance, and student updates. This creates uncertainty for families and can lead to missed travel, reduced engagement, and disruption to students' learning journeys, particularly for those transitioning between homelands and Garrthalala."
>
> — Bree Toze, Makarraṯa Senior Teacher, Laynhapuy Homelands School, by email 2/4/2026

Lack of direct communications creates a weekly challenge with families regularly travelling between homelands and into regional centres.

- "We have that issue [of trying to] ascertain where guardians and parents are every Friday when kids go home. We shouldn't have to be just talking down crackly phone lines and ringing the community payphone, which someone may or may not answer. If it's even working, we should be able to just connect with guardians like everyone else does." (Abi White, as above, 2026)

The need for reliable communications is particularly critical during emergency situations. A recent situation during school evacuation in the leadup to Cyclone Narelle (March 2026 highlighted the risk.

Figure 32: Garrthalala from the air (Photo supplied by Laynhapuy Homelands School)

- "We were sending the boarding kids home early [under our cyclone evacuation plan, but] some of the payphones were down [making it] really hard to [communicate with families. As a result] a student nearly got left in the homeland by herself … We'd [told] the family we were going to drop her [home but after that] everyone got panicked about the cyclone [and] left. She got dropped off [but luckily decided to come] back to Yirrkala and we located her. But in a time of emergency, that's when you [rely on] good communications." (Abi White, Laynhapuy Homelands School Principal, 2026)

While there were hopes that the Wi-Fi network would help to address the communications challenges, this has reportedly not made a significant difference yet.

There is basic use of digital technologies in homeland schools

Younger students have access to iPads in some of the schools including Gäṉgaṉ. There is also smart TVs now used in classrooms.

- We've invested in [smart] televisions in the classrooms [but they] have limited application if you're not online. [The teachers use these] with [offline applications and] lesson support materials, but it would be so much better for homeland teachers if they had access to online materials." (Abi White, Laynhapuy Homelands School Principal, 2026)

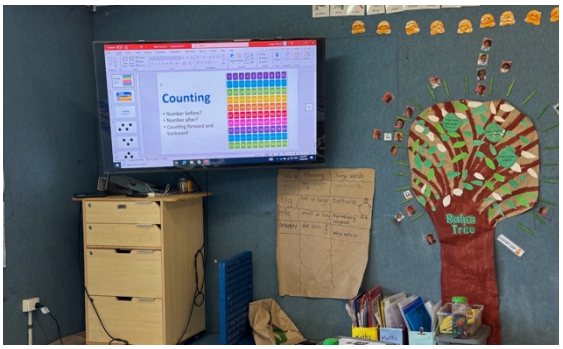


Figure 33: A smart TV in the classroom at Gäṉgaṉ school

Laynhapuy School has also partnered with Apple Australia over the last four years to use iPads as a tool for learning and work within schools. Community educators use resources provided by Apple to learn a digital skill or an iPad app and then share it with the students. This includes creating movies and multi-media projects and doing learning assessments. However, we heard that there is limited opportunity for follow-up activities at Gäṉgaṉ school due to limited IT resources.

- "Once a year there's the Apple workshop [where] a team of people fly out and [show students] how to use an iPad. [Beyond the iPads we bring out for the workshop] there's really no other access within school to any kind of ICT stuff … other than just my own personal laptop and the other teacher's laptop [which we use] to show our Power Point and [use online tools]." (Anna Lansdown, Laynhapuy Homelands School teacher, 2023)

At Garrthalala, senior school students have been using iPads and laptops, developing keyboard skills and using PC-based applications. Digital skills and familiarity with online applications are increasingly necessary life skills that are critical for work readiness. Senior school students are also introduced to workplace applications, such as the iTracker application used by rangers, as well as internet banking, search techniques and more.

- "They learn how to use Word [and] type. They have to submit presentations and Power Points [and] they do some music stuff on their iPads as well." (Anna Lansdown, as above, 2023)

Once connectivity improves, the school is planning to introduce more laptop and desktop computers for students, as well as to enable community members to learn internet banking and other applications.

The community Wi-Fi has improved connectivity in Gangan and Wandawuy but the School are not permitted to use this with school devices because it is an open network.

Garrthalala has had improvements with Starlink at the school and 4G mobile service

The Northern Territory Department of Education have undertaken trials of Starlink in remote schools in other regions over recent years, as a potential replacement the the STARS satellite.

- "There was a Starlink trial maybe two years ago [in] some other remote schools, and I don't know how they selected the schools, but we weren't a part of that trial. And I guess as a result of that trial, they've now considered Starlink viable because part of the trial was the security connected with students not being able to access anything and how it linked in with the department system." (Abi White, Laynhapuy Homelands School Principal, 2026)

Based on the success of these trials, Laynhapuy Homelands School advocated to have Starlink installed in its schools across the region. This resulted in Starlink being installed at the senior school in Garrthalala in 2025, which has been described as a 'game changer'.

- "Because we have the boarding program at Garrthalala, and we've got well above average NTCT completion results, [we applied] a bit of pressure [along with] the Union to get Starlink put in at Garrthalala and that was done last year. So that's been amazing there. It coincided with Garrthalala getting 3G or maybe 4G. So now Garrthalala has phone reception and Starlink on the school and so where the kids are boarding there, that's been a game changer in terms of what the students can access, the research they can do in class, the projects they can work on." (Abi White, as above, 2026)

Laynhapuy Homeland School has since requested Starlink be installed in all schools, with this planned for July 2026.

> "So there's a plan now to roll [Starlink out to] the other schools in the Layna homelands from July this year. I'm just always really wary that those timelines can move or be pushed back. So that's another reason why we got the Starlink Minis, just to be able to help teachers be be able to do basic functional things for their work." (Abi White, as above, 2026)

While staff are looking forward to this upgrade, there is frustration at the time it has taken to occur.

- "It's a real disappointment that the schools have been left behind and that that we have to push so hard for the upgrades. It should just be something that's being rolled out, not questioned." (Abi White, as above, 2026)

Figure 34: Homeland Centre Teacher using smart TV at Gäṉgaṉ school (Photo supplied by Laynhapuy Homelands School)

07. CONSIDERATIONS FOR LOCAL DIGITAL INCLUSION PLAN

Developing a local Digital Inclusion Plan enables a coordinated place-based approach to addressing some of the challenges outlined in this report. It also provides a useful tool for advocacy to government, industry, and for fundraising efforts. The strategies below are based on input from community stakeholders and provide options for local planning to improve communications services and digital inclusion in Gängan. These are not intended to be prescriptive, nor are they listed in order of priority.

Based on our 2024 and 2025 interviews and discussions, the proposed Digital Inclusion Plan has been updated with new strategies and a column for Progress/Next Steps, with colour coding to show progress to date.

Legend	
Issue resolved	
Issue partly resolved/underway:	
Yet to be addressed:	

Identified Issue	Possible Actions	Potential Stakeholders	Progress/Next Steps
Regional planning and development			
Regional planning: LHAC input to NTG East Arnhem Digital Connectivity Strategy to support Laynhapuy homelands' needs and appropriate delivery models	Establish a regional planning process for community consultation with NTG and telcos regarding the design and operation of planned services and solutions to address outstanding needs using appropriate delivery models	Laynhapuy Homelands A.C. (LHAC) Northern Territory Government (NTG)	*There is increased consultation with LHAC by NTG and telcos about project delivery, but limited involvement in planning to date*
Regional needs assessment: Some Laynhapuy homelands having limited or no connectivity and/or existing infrastructure is not working reliably	Undertake review of existing communications infrastructure in Laynhapuy homelands Develop strategy to guide future infrastructure planning, upgrades and policies on co-design and shared infrastructure use Review maintenance and remote monitoring processes to reduce outage times; coordinate maintenance/IT support between agencies where possible	LHAC Laynhapuy Health NTG	*Some needs analysis has been undertaken by LHAC and Laynhapuy Health*
Change management planning: Need for technology planning to ensure community governance, access and skills	LHAC to co-design change management plan to empower governance and uses of communications services, maximise benefits and reduce risks or negative impacts	LHAC NTG	*Work has begun on this through existing projects (Wi-Fi network and small cell rollouts, Starlink upgrades, etc.)*

Identified Issue	Possible Actions	Potential Stakeholders	Progress/Next Steps
Access			
Community wide Wi-Fi network: Delivery of free Wi-Fi access to support affordable and reliable community internet and voice access from home	Gäŋgaŋ selected as one of 23 sites to receive nbn First Nations Community Wi-Fi Program in 2024 (to 2029). Wi-Fi network installed by Australian Private networks (APN) in October 2024. Community has governance over access hours, content filtering, etc.	LHAC nbn Australian Private networks (APN) Laynhapuy Health	*nbn/APN providing monthly usage reports; LHAC to report community feedback or changes on Wi-Fi service governance to nbn/APN*
Indoor Wi-Fi access: Wi-Fi not available inside houses	Provision of repeaters to enable access to Wi-Fi inside metal houses, especially during wet season	nbn/APN	*Yet to do*
Backup Wi-Fi access: Ongoing need for Wi-Fi access beyond installation of broadband solution	Continue provision of free Wi-Fi at Gäŋgaŋ Shop to ensure affordable internet access beyond installation of the broadband service	LHAC Laynhapuy Health	*Laynhapuy Health planning to continue providing Wi-Fi hotspot at shop*
Computer or laptop access: Demand for access computers for digital skills development, access to online services, meetings and remote learning	Identify appropriate space for community access computers/laptops/tablets and peripherals (printer, scanner, monitor, etc.) Seek donated laptops and peripherals	LHAC Laynhapuy Health Laynhapuy Homelands School Work Ventures	*Yet to do*
Telehealth system: Need fast, low latency broadband and upgraded equipment	LHAC have installed Starlink satellite service for Gäŋgaŋ clinic and other clinics as well as new telehealth system	Laynhapuy Health NTG	*Starlink installed in four clinics, but not in Gäŋgaŋ as yet*
Lack of fixed household internet: Low home internet access limits extended learning opportunities for students	Promote awareness of new Starlink $69 plans (100Mbps speed and unlimited download), and Sky Muster Plus Premium plans as affordable household broadband	LHAC nbn Starlink	*Yet to do*
Communications at air strip: Lack of connectivity at airport to enable calls	Install Wi-Fi hotspot, UHF radio or other communications mode at air strip to enable communication by pilot or passengers to community	LHAC	*Yet to do*
Affordability			
Data costs: High expenditure on pre-paid mobile data despite irregular mobile access (currently 28-day refresh period)	Advocate for a pre-paid option with longer refresh period and lower data costs for homelands residents Provide accessible information (posters, brochures) and on Yolŋu Radio outlining ways to minimise costs of data usage via mobile and satellite service	LHAC NTG ARDS/Yolŋu Radio	*Telstra has a range of pre-paid plans, but lack of plan suited to Wi-Fi network use as primary means of access, with occasional mobile network use*

Identified Issue	Possible Actions	Potential Stakeholders	Progress/Next Steps
Financial awareness: Need for consumer information to limit financial impacts of broadband plans, devices, scams and online services	Provide independent consumer information about telecommunications plans, devices or strategies for managing data use and costs, as well as awareness of scams and other financial risks	LHAC Mob Strong Debt Help Anglicare	*Underway – visits by Mob Strong Debt Help and Anglicare to provide scam awareness and financial advice and support have commenced*
Digital Ability			
IT training and support: Limited digital skills, use of online services and cyber-safety awareness, particularly among seniors	Basic digital skills workshops, possibly at Gäŋgaŋ School Discuss options for digital skills workshop delivery with nbn local or other providers	LHAC Laynhapuy Homelands School nbn Local	*nbn local has delivered digital skills workshops*
Workplace digital skills: Demand for workforce readiness IT skills	Incorporate digital skills training into workforce readiness training and on-the-job training by local agencies as needed	Laynhapuy Health Laynhapuy School Yirralka Rangers ALPA CDP	*On-the-job training involved in most roles currently, however more digital skills training is needed*
Digital mentor: High demand for support in setting up and using online services, banking, sourcing identification, SIM activation, etc.	Employment of a digital mentor, possibly based at Gäŋgaŋ shop, to support use of online banking and services, app use, phone SIM activation/recharge, email setup, and other needs	DHS / Centrelink CDRC nbn Local	*Funding for Digital mentor roles allocated in 2024 Federal budget; program yet to be developed*
Access to media services			
TV services failure: VAST direct-to-home satellite TV services not working in all Gäŋgaŋ households; only four houses with VAST dishes; high cost to repair satellite equipment or replace set-top boxes	Advocate for funding to upgrade or install VAST satellite services in all residences, replace VAST set-top boxes in homes where not working, and shelf unit and power surge protectors needed for set-top boxes VAST boxes to be sold at cost price *Note: DITRDCA set up an Audit Group for remote and regional TV and VAST services in 2023-24; awaiting action on outcomes*	LHAC NTG Australian Government (DITRDCA)	*No funding program for communities to switch to local broadcast model or VAST equipment repair program (pending outcomes of audit report)*
Yolŋu Radio not reliable: Upgrade Yolŋu radio broadcast equipment and UPS to improve reliability in Gäŋgaŋ	Advocate for funding to re-establish and maintain an ABC radio service in Yuelamu (and other central Australian communities) Provide training for local person to monitor and reset radio service if not working	LHAC ARDS NIAA	*ARDS to apply to NIAA or Community Broadcasting Foundation for funding for equipment upgrade*

Appendix 1: Summary of survey results

Notes:

1) Survey results are weighed using ABS data to be more representative of Gäŋgaŋ's population.
2) Not all respondents answered all questions, so percentages are based on respondents to that question.
3) Some questions or responses were not asked in all three years. These are indicated by N/A.

Demographics		2022	2023	2024
Respondents (n)		31	20	23
Age	46%	46%	46%	49%
	34%	21%	34%	21%
	7%	20%	7%	15%
	7%	7%	13%	10%
	5%	5%	0%	6%
Gender	45%	45%	45%	48%
	55%	55%	55%	52%
Aboriginal or Torres Strait Islander	Aboriginal	100%	100%	100%
	Both Aboriginal and Torres Strait Islander	0%	0%	0%
Speak a language other than English at home		100%	100%	100%
Health	Have a disability, health condition or injury (over 6 months)	27%	39%	11%
Education	Did not complete secondary	20%	4%	13%
	Up to Yr 10	16%	42%	23%
	Up to Yr 11	26%	16%	14%
	Up to Yr 12	35%	31%	11%
	Certificate level I or II	0%	0%	13%
	Certificate level III or IV	4%	7%	25%
	Advanced Diploma or Diploma	0%	0%	2%
	Bachelor or above	0%	0%	0%

Figure 35: Entry sign on road into Gäŋgaŋ

Demographics			2022	2023	2024
Employment					
	Main Activity	Employed (FT, PT, self-employed, casual)	22%	22%	21%
		Unemployed	6%	35%	33%
		Student	0%	0%	0%
		Retired or on a pension	6%	0%	2%
		Home duties	0%	20%	14%
		Not able to work due to a disability	4%	24%	11%
		Unpaid carer	0%	0%	0%
		Given up looking for work	27%	0%	0%
		Engaged in CDP/CDEP activities	36%	0%	19%
	Occupation (of those who are employed)	Manager	2%	0%	0%
		Professional	7%	0%	0%
		Technician/trade worker	0%	0%	0%
		Community/personal service worker	7%	66%	33%
		Clerical/administrative worker	0%	0%	8%
		Sales worker	0%	0%	0%
		Machinery operator/driver	0%	0%	8%
		Labourer	5%	35%	50%
	Hours worked per week (of those who are employed)	35 or more hours	11%	33%	39%
		Less than 35 hours	11%	67%	39%
		None	0%	0%	22%
	Job seeking	Looking for FT work	0%	0%	0%
		Looking for PT/Casual work	52%	38%	49%
		Not looking for work	48%	63%	51%
Welfare	**Received income support (e.g. JobSeeker, Family Tax Benefit)**		50%	93%	80%
	Government Benefit Type (of those on income support)	Family Tax Benefit	30%	0%	19%
		Healthcare card	0%	0%	9%
		JobSeeker/Youth allowance	42%	55%	44%
		Disability (Support) pension/Mobility allowance	25%	11%	12%
		Carer allowance/payment	0%	0%	2%
		Single or partnered parenting payment	31%	14%	21%
		Other pension or benefit	0%	4%	1%
Housing	**Housing tenure**	Own outright/purchaser	0%	0%	2%
		Rent from private landlord	0%	0%	0%
		Rent from public housing authority	45%	48%	64%
		Other (boarding, living at home etc.)	55%	52%	34%
	Household type	Single person	0%	0%	0%
		Group/Share household	0%	5%	2%

	Couple without children	0%	0%	0%
	Couple with children	0%	0%	14%
	One parent family	0%	0%	0%
	Multi-generational or shared households	100%	95%	84%
Household size	Number of people in household	6.5	6.6	5.9
Age of dependent children	5 years old or under	66%	66%	48%
	6-12 years old	56%	71%	67%
	13-14 years old	13%	0%	51%
	15-17 years old	21%	40%	3%
	18 years old or over	14%	2%	0%
Understanding of spoken English	Very well	52%	13%	29%
	Quite well	46%	54%	27%
	Only a few words	2%	34%	45%
	Not at all	0%	0%	0%
Understanding of written English	Very well	50%	2%	14%
	Quite well	43%	50%	51%
	Only a few words	7%	48%	35%
	Not at all	0%	0%	0%
ATSI languages spoken (by 10% or more respondents)	Yolŋu Matha	88%	98%	100%
	Kriol	11%	7%	0%
Weekly household income	$1–$399	16%	0%	0%
	$400–$999	39%	13%	2%
	$1,000 - $1,999	45%	87%	86%
	$2,000 - $3,999	0%	0%	13%
	above $4,000	0%	0%	0%
Phone Use		**2022**	**2023**	**2024**
Primary devices used for phone calls (multi-choice question)	Fixed line telephone in my home	30%	0%	13%
	Public phone	96%	100%	100%
	A mobile phone	73%	95%	89%
	Phone in community office or workplace	61%	2%	66%
	Satellite phone	0%	0%	0%
	No phone access	0%	0%	0%
Reliability of nearest public phone	Reliable	27%	100%	88%
	Not reliable	0%	2%	1%
	Sometimes reliable	73%	0%	24%
	Do not use a public phone	0%	11%	4%
Mobile phone ownership	Have mobile phone (owned)	73%	52%	64%
	Have mobile phone (shared)	7%	43%	23%
	No mobile phone	20%	5%	13%

For those who have a mobile phone (owned or shared):					
Primary phone type	Smartphone		100%	100%	100%
Phone plan	Pre-Paid (pay-as-you-go, top ups)		100%	100%	100%
	Post-paid (monthly)		0%	0%	0%
Average monthly data allowances	10GB or less		0%	5%	0%
	11-40GB		85%	0%	42%
	41-60GB		16%	72%	58%
	61-100GB		0%	7%	0%
	Unlimited		0%	16%	0%
5G network usage with mobile phone	Yes		0%	0%	0%
	No		N/A	N/A	100%
Average no. of mobile phone services			4.0	3.5	4.3
Average household cost of pre-paid mobile services per fortnight			$159	$201	$266
Media Use			**2022**	**2023**	**2024**
Radio access (multi-choice question)	Through the TV/VAST		0%	0%	0%
	Listen to a radio at home		71%	31%	42%
	Listen via car		100%	84%	66%
	Streaming via phone or tablet		0%	8%	47%
	Streaming via computer		0%	0%	0%
	Individual radio shows via podcasts		0%	0%	0%
	Only listen to radio at places other than home or car		0%	2%	24%
	Never listen to radio		23%	9%	2%
Radio listenership	Local First Nations radio - Yolŋu Radio or TEABBA radio	daily	4%	29%	2%
		weekly	11%	9%	11%
	ABC radio	daily	0%	0%	0%
		weekly	2%	0%	2%
	Commercial radio	daily	0%	0%	0%
		weekly	2%	0%	0%
	Community radio	daily	0%	0%	18%
		weekly	2%	0%	0%
TV access (multi-choice question)	On home TV via VAST satellite		0%	0%	0%
	Broadcast TV with TV antenna		0%	0%	0%
	Subscription satellite TV service		0%	0%	15%
	Online TV streaming (via mobile or internet)		0%	0%	0%
	Only watch TV at places other than home		21%	4%	3%
	Never watch TV		18%	0%	39%
Movies/Online content access (multi-choice question)	Via mobile phone		N/A	N/A	75%
	On computer or tablet		N/A	N/A	9%
	Smart TV connected to internet		N/A	N/A	11%
	Memory stick or hard drive connected to TV		N/A	N/A	45%

	DVDs		N/A	N/A	0%
VAST TV access status (for those who have access)	VAST service working		0%	0%	0%
	VAST service not working		100%	100%	100%
Most popular sources of TV and media content (multi-choice question)	ICTV	daily	5%	0%	33%
		weekly	0%	0%	7%
	NITV	daily	9%	0%	33%
		weekly	0%	0%	7%
	ABC TV	daily	6%	0%	33%
		weekly	2%	0%	7%
	SBS TV	daily	0%	0%	33%
		weekly	0%	0%	7%
	Commercial TV	daily	2%	0%	25%
		weekly	0%	66%	5%
	Streaming service	daily	34%	25%	9%
		weekly	2%	17%	15%
	YouTube	daily	43%	39%	77%
		weekly	4%	41%	24%
	Other	daily	12%	22%	54%
		weekly	0%	0%	0%
Primary sources of news and information	First Nations radio	daily	5%	31%	2%
		weekly	7%	8%	13%
	ABC radio	daily	9%	0%	0%
		weekly	0%	0%	2%
	Other radio	daily	0%	0%	16%
		weekly	9%	0%	2%
	ICTV	daily	6%	0%	0%
		weekly	2%	0%	0%
	NITV	daily	5%	0%	14%
		weekly	2%	0%	0%
	ABC TV	daily	0%	0%	14%
		weekly	2%	0%	0%
	SBS TV	daily	0%	0%	14%
		weekly	2%	0%	0%
	Commercial TV	daily	0%	0%	14%
		weekly	2%	52%	0%
	Facebook	daily	47%	21%	23%
		weekly	11%	9%	27%
	Other social media	daily	38%	28%	13%
		weekly	9%	0%	25%
	Online news services	daily	4%	8%	2%
		weekly	5%	8%	9%
	First Nations newspaper	daily	0%	0%	0%
		weekly	0%	0%	0%
	Other newspaper	daily	0%	0%	0%
		weekly	6%	0%	0%

	Noticeboard	daily	0%	0%	11%
		weekly	4%	7%	29%
	Direct and in-person	daily	79%	96%	100%
		weekly	13%	4%	0%
	Other (e.g. P.A.)	daily	9%	0%	29%
		weekly	9%	11%	5%
Primary sources of emergency information (multi-choice question)	First Nations radio		59%	55%	48%
	ABC radio		29%	0%	0%
	Other radio		0%	0%	16%
	First Nations TV service (e.g. ICTV, NITV)		0%	0%	0%
	ABC television		0%	0%	0%
	SBS television		0%	0%	0%
	Commercial television (e.g. Channels 7, 9, 10)		0%	29%	0%
	Facebook		43%	23%	27%
	Other social media (e.g. Twitter, AirG)		0%	0%	5%
	Online emergency services (e.g. weather/govt app)		0%	32%	16%
	Online news services		4%	0%	14%
	Online - other sources		4%	0%	0%
	Newspaper		0%	0%	0%
	Noticeboard/posters		2%	2%	11%
	Direct/in-person		0%	100%	100%
	Text message (e.g. police/emergency services)		0%	0%	13%
	Other (e.g. P.A.)		38%	50%	4%
Internet Use			**2022**	**2023**	**2024**
Regularity of internet use (for those who had used the internet within the last 6 month)	Constant to daily		39%	67%	73%
	Frequent use (weekly)		20%	22%	13%
	Infrequent (less than within week)		23%	7%	2%
	Never (Not an internet user)		18%	4%	13%
Barriers to internet use (multi-choice question for those who used the internet more than 6 months ago or never)	Have no need to use the internet/to use it more often		0%	0%	0%
	Not confident using the internet		100%	100%	86%
	The internet is too expensive		70%	100%	86%
	Concerned about privacy or scams		40%	0%	0%
	The internet is not a priority		0%	0%	86%
	Do not have access to the internet		70%	100%	100%
	Have a disability that prevents me using the internet		0%	0%	100%
	Concerned about inappropriate content/conflict		70%	0%	0%
	Do not have access to content in my own language		100%	0%	86%
Internet location other than own home (multi-choice question)	Place of work or education		9%	6%	12%
	Houses of friends or family		2%	2%	2%
	Public library		0%	0%	12%
	Government office		0%	21%	84%

	Shopping centre, retail, or service business		0%	30%	74%
	Public transport		0%	0%	0%
	Public space with free Wi-Fi		91%	76%	71%
	Other place		0%	0%	2%
Device used to access internet (multi-choice question)	Smartphone		93%	100%	100%
	Desktop computer		2%	0%	0%
	Portable laptop/notebook computer		20%	2%	10%
	Tablet		0%	0%	10%
	Smartwatch		0%	0%	0%
	Smart TV		13%	33%	27%
	Digital media player		0%	0%	0%
	Voice controlled smart speaker		0%	0%	0%
	Games console		0%	0%	12%
	E-reader		0%	0%	0%
	Smart appliance/home device		0%	0%	0%
Fixed Home Internet Connection	Have fixed home internet service		0%	0%	0%
	Do not have fixed home internet service		100%	100%	100%
Mobile Broadband Internet Connection (excluding mobile phone services)	Portable modem or Wi-Fi device (e.g. a dongle)		0%	0%	0%
	Sim card in a tablet/laptop		22%	7%	0%
	Do not have mobile broadband internet services		78%	93%	100%
Affordability			**2022**	**2023**	**2024**
Total average household internet expenditure			$166	$201	$266
Cut back on essential household costs (e.g. food, bills) to afford internet in past 6 months	Rarely or never		44%	32%	27%
	Sometimes		56%	66%	18%
	Often		2%	14%	5%
	Always		41%	13%	0%
Have compromised on internet speed/data due to cost in past 6 months			73%	98%	96%
Digital Ability			**2022**	**2023**	**2024**
The following sections refer to respondents who had used the internet within the last six months					
% of internet users who had used the internet within the last six months			**82%**	**96%**	**88%**
Basic digital ability skills	Download and then open a file	Very true of me	15%	13%	21%
		Mostly true of me	17%	36%	20%
	Save files in the cloud and re-open them	Very true of me	15%	13%	19%
		Mostly true of me	2%	23%	10%
	Find and install apps/software	Very true of me	15%	25%	26%
		Mostly true of me	20%	46%	32%
	Identify which apps/software are safe to download	Very true of me	8%	13%	17%
		Mostly true of me	23%	38%	29%
	Open a new internet browser tab	Very true of me	15%	25%	25%
		Mostly true of me	18%	38%	29%

	Complete online forms	Very true of me	2%	25%	21%
		Mostly true of me	22%	21%	17%
	Use shortcuts (e.g. Ctrl-C for copy on a computer)	Very true of me	6%	13%	15%
		Mostly true of me	4%	11%	7%
	Customise the look or sound of a device	Very true of me	7%	13%	21%
		Mostly true of me	11%	41%	23%
	Set and manage secure passwords	Very true of me	15%	13%	23%
		Mostly true of me	26%	46%	32%
	Adjust privacy settings	Very true of me	15%	12%	22%
		Mostly true of me	4%	33%	21%
	Connect to a Wi-Fi network	Very true of me	49%	48%	51%
		Mostly true of me	45%	27%	31%
	Use a mobile phone or device as a Wi-Fi hotspot	Very true of me	39%	46%	42%
		Mostly true of me	11%	14%	19%
Online Search Skills	Choose keywords to search for information	Very true of me	7%	4%	7%
		Mostly true of me	28%	68%	48%
	Find a website I have visited before	Very true of me	7%	12%	13%
		Mostly true of me	28%	35%	38%
	Navigate most websites and apps	Very true of me	7%	12%	17%
		Mostly true of me	13%	46%	25%
	Adapt to Website/App Changes	Very true of me	7%	4%	5%
		Mostly true of me	24%	42%	35%
	Use a range of search techniques	Very true of me	7%	4%	9%
		Mostly true of me	26%	54%	31%
	Check information trustworthiness	Very true of me	0%	4%	1%
		Mostly true of me	4%	44%	21%
	Control personal information collected	Very true of me	0%	2%	1%
		Mostly true of me	2%	32%	17%
Advanced Digital Skills	Decide what to share online	Very true of me	7%	13%	10%
		Mostly true of me	7%	48%	29%
	Act appropriately online	Very true of me	7%	4%	8%
		Mostly true of me	13%	34%	31%
	Manage who sees my content	Very true of me	15%	13%	12%
		Mostly true of me	2%	38%	24%
	Check if somebody is who they say they are	Very true of me	15%	13%	18%
		Mostly true of me	16%	26%	16%
	Set up a group chat or video call	Very true of me	21%	33%	28%
		Mostly true of me	2%	26%	12%
	Send/receive email	Very true of me	17%	9%	28%
		Mostly true of me	35%	15%	30%
Creative Skills	Make basic changes to other's online content	Very true of me	0%	13%	4%
		Mostly true of me	7%	13%	15%
	Create a website	Very true of me	0%	4%	1%
		Mostly true of me	23%	9%	11%
	Create something new from existing images/audio/video	Very true of me	7%	2%	15%
		Mostly true of me	9%	23%	13%
	Post a video	Very true of me	7%	4%	11%
		Mostly true of me	7%	36%	26%

	Comment on a blog, website or forum	Very true of me	7%	14%	19%
		Mostly true of me	7%	35%	16%
	Consider laws before posting or copying content	Very true of me	0%	0%	0%
		Mostly true of me	20%	33%	18%
Smart Skills	Connect smart devices to internet	Very true of me	23%	11%	16%
		Mostly true of me	21%	34%	27%
	Operate smart devices via apps	Very true of me	13%	11%	13%
		Mostly true of me	7%	16%	16%
	Adjust privacy and security settings	Very true of me	7%	11%	11%
		Mostly true of me	2%	16%	16%
	Customise look or sound of a device	Very true of me	13%	11%	12%
		Mostly true of me	9%	16%	19%
Online activities used in past six months	Used the internet for learning or study		39%	15%	53%
	Used banking websites or apps to manage money		76%	59%	84%
	Accessed a government service		65%	59%	69%
	Booked or used a health service		9%	29%	12%
	Compared prices of products or services		28%	25%	41%
	Looked for work		30%	2%	41%
	Looked for housing/accommodation		9%	16%	8%
	Buy or sell online (website or app)		30%	9%	18%
	Tracked online order delivery		30%	11%	4%
Social Skills	Connected with people online		57%	19%	82%
	Kept in touch with family or friends		78%	21%	96%
	Make or reconnected with friends online		72%	17%	45%
	Joined or took part in an online group		11%	9%	27%
	Used online entertainment services		91%	100%	98%
	Attended online music, arts or cultural event		35%	15%	29%

Figure 36: Morning fog settled over Gäŋgaŋ

2024 Comments

Internet and phone access

It would be good to have WIFi connected to the house. I have to walk to the phone box for calls or clinic to watch. I want to do that from home

- We want better internet in Gäŋgaŋ
- It would be good to have Wi-Fi at our house
- I want the mobile phone so I can make calls
- Want better free internet
- Need proper Wi-Fi for all community
- More free internet- only use ranger free Wi-Fi
- We need to fix the home phone.
- We need mobile coverage. We need UHF radio to be fixed, particularly for us rangers when we're out bush, in case there is an emergency (e.g. snakebite)
- The community Wi-Fi would be good to have at our house but we want it switched off by 10pm
- We want the NBN Wi-Fi. We've waited a long time
- Need Wi-Fi at home
- We need better Wi-Fi
- We need better Wi-Fi, to get internet and news

TV and radio access

- VAST TV working again please
- We've got no TV, would be good to have it working again
- Fix the TV on house
- Repair TV (VAST)
- Need TV services
- TV VAST fixed - live radio broadcast
- Waiting for TV and dishes
- We also want TV back
- We want the TV fixed up with a dish on our house and a set-top box
- We need Wi-Fi at our house and TV working
- Fix VAST TV
- We also want TV and radio working
- Yolŋu radio needs to be fixed
- Yolŋu radio not working, we need it fixed

Digital ability /other

I never use internet, just banking when I go to town. I borrow my granddaughter's phone if I need to make a call. I have a hearing aid so it's hard to hear the phone

- I want to learn digital skills

Appendix 2: Community Communications Audit

About the community	
Community name:	Gäŋgaŋ
Traditional Owners/Language group	Yolŋu Matha (Dhuwaya)
Location (Coords)	Longitude: 135.944 Latitude: -13.046
Region	East Arnhem
LGA/Shire/Regional Council	East Arnhem Regional Council
Land Council	Northern Land Council
Regional service centre, distance	206 km from Yirrkala; 220 km from Nhulunbuy; 35 min flight from Gove airport
Remoteness (ABS/ARIA+)	Very remote
Demographic data – ABS 2021	
ABS link – Aboriginal and/or Torres Strait Islander (ATSI) people QuickStats	https://abs.gov.au/census/find-census-data/quickstats/2021/ILOC70600302
Total population	82 (LHAC estimate 100)
ATSI population	100%
Gender breakdown	50% male, 50% female
Median Age	21
Families	17
Language groups – numbers of speakers	Yolŋu Matha dialects — primarily Dhay'yi, Dhuwaya, Dhuwal
% ATSI people who speak an ATSI language	100%
% who speak only English at home	0%
Employment levels	No data
Education levels	No data
Number of buildings	13 residential houses
Housing suitability for ATSI households	6.3 (7.6 if using population of 100)
Median ATSI household weekly income	$1,812
Median personal income – over 15 years	No data
Average weekly rent	$90
Average motor vehicles per dwelling	No data
Community services and plans	
Community layout plan	See: https://bushtel.nt.gov.au/profile/498?tab=detail
Agencies in community	Laynhapuy Homelands Aboriginal Corporation—Laynhapuy Health Service (runs clinic and store), Yirralka Rangers, LHAC Youth program, municipal services, Ganybu Housing AC, Laynhapuy Homelands School, CDP - Arnhem Land Progress Association (ALPA)

Visiting agencies	Northern Land Council; Anglicare (money management); NBN/APN; Telstra; AFL; contractors
Community development plan	Not published. See Laynhapuy Homelands A.C. – https://www.laynhapuy.com.au
Power supply/type in community	Local diesel generator near airport
Use of power cards	Power cards not used since COVID – covered by Laynha
Types of communications available	
Public phones – number/location	One Telstra public phone and one free call phone in shop
Home/agency phones	Yinimala Gumana has only home phone, all others in agency buildings (school, clinic, VOQ, pre-school, ranger base).
Mobile coverage	None
Backhaul types	HCRC microwave network for phone; Sky Muster/Starlink for data
Fibre to community	No
ADSL – number of connections	No
Satellite services – number, locations, provider	Sky Muster for school, clinic, ranger station and VOQ/training centre; Starlink on clinic and shop; Sky Muster satellite for Wi-Fi on shop; No community residences have satellite
UHF or HF Radio	UHF radio used by rangers
Status of services – faults, issues, speeds during peak use time, etc.	HCRC phone system regular dropouts/outages, especially during rainfall events; Regular generator outages
Communications funding history	Australian Government funding to NBN to install Wi-Fi mesh in 23 remote communities; Regional Connectivity Program Round 1 for FSG broadband solution (project did not proceed)
Any planned upgrades?	NBN Wi-Fi mesh network installed in October 2024; No other upgrades planned
Emergency information system	Primarily word of mouth; P.A. system at pre-school and Marakuku's megaphone at the Gäŋgaŋ shop
Telemetry network	None being used
Media services available	
Radio services broadcast – AM or FM	Yolŋu Radio (FM) is the only radio service
TV services	VAST satellite direct-to-home is only form of TV access, however this is not working in any of the 13 houses
Other media services – newspaper etc	None
Community access facilities	
Public access facilities	None
Public Wi-Fi availability and model	NBN Wi-Fi mesh network (installed October 2024) provides free external Wi-Fi across community plus indoor access in clinic, available 8.45am–6.30pm; Free public Wi-Fi at store provided by Laynhapuy Health

Appendix 3: Photos of Research Activities

Figures 38 & 39: Lyndon Ormond-Parker doing surveys with Gäṉgaṉ residents; Djamika Ganambarr doing survey with Gawumala Gumana

Figures 40 & 41: Kieran Hegarty and Daniel with community leader Billy Gumana; Djamika using Garageband on iPad

Figures 42 & 43: Laynhapuy Homelands office in Yirrkala; Daniel and Kieran with LHAC CEO Kerry Legge and Yinimala Gumana

Figures 44 & 45: Laynhapuy Health Clinic; Kieran, Djamika, Lyndon and Daniel standing by plane