# PART I

## Chapter 1: Policy

On our way to the Barkly communities, we travelled on the road named after the first European explorer to make the journey from Australia’s south to north coasts, John McDouall Stuart, for which he was paid a commission associated with the establishment of a telegraph line. We passed two heritage telegraph repeater stations, one at our starting point in Alice Springs and the other 280 kilometers north at Barrow Creek. Now tourist destinations, the small stone buildings once housed the equipment and operators that connected Adelaide to Darwin and Great Britain. On one particular trip, we asked the bar tender at the Barrow Creek roadhouse how long he had been living there. He simply pointed to graffiti on the wall, where he, or someone before him, had scrawled the words ‘long enough’.

Some months after that trip, in 2014, Barrow Creek received mobile phone coverage as part of a public-private partnership blackspots program to extend mobile coverage and internet access to remote communities. Telstra, the private partner, issued a statement saying that the site was chosen partly for its proximity to fibre optic cable. The Northern Territory government stated that the tower was to serve highway and wayside coverage, rather than to service nearby Aboriginal communities and a school, which remained outside of the coverage area.[[1]](#footnote-2)

The Barrow Creek mobile story illustrates the complexities of communications infrastructure provision in remote areas: the cost imperative (in this instance related to the use of existing infrastructure), and the different needs of various population groups, which include the ‘grey nomad’ campervan tourists who travel the Stuart Highway, service providers, and Aboriginal communities. The ABC quoted a resident of Tara, a small community near Barrow Creek, who had purchased a mobile phone in anticipation of being able to ring her daughter in Alice Springs from home: ‘I'm sad for us (because) I turned it on and it didn't switch on’, said Selma Thompson. ‘It was a waste’.[[2]](#footnote-3)

The everyday life of residents of remote Indigenous communities is unlike that of most Australians in very many ways. Remote communities are small, isolated settlements, separated by great distances. While they offer many rich social and cultural benefits for their residents, they have poor transport connections, little infrastructure and scarce resources. But as it does for other Australians, life in remote communities involves communications: with family members in other places, with social networks, and with governments, organizations, and businesses. Reliable communications for the people who live and work in remote Australia are all the more essential on account of their isolation, and unlike urban Australians, they have never taken these for granted. Despite many positive developments, adequate communications are still not the reality for most Indigenous communities, and the problem of securing them has been a challenging and defining issue from the beginning.

This chapter discusses the policy contexts of the problem. Policy matters because governments have defined, regulated and largely funded the communications sector in remote Australia, and because governments continue to play a paternalistic role, albeit a contested one, in Indigenous citizens’ lives. But these two policy registers – communications and Indigenous affairs – have very different histories, institutional settings and policy languages. Communications has been a core Commonwealth responsibility, and a reasonably important agency, under different guises, since Federation. Despite many large changes in structure and policy, this is a field where the Commonwealth has long been certain of its role. Indigenous Affairs, by contrast, is a much more difficult, arduous and wicked problem, which has involved continuing inter-governmental skirmishes as to the division of responsibilities. Unlike communications, the Commonwealth’s work in Indigenous affairs has failed to find any ongoing institutional location, with successive shifts from a dedicated department to the Indigenous-elected Aboriginal and Torres Strait Islander Commission (ATSIC), an element within social services, and most recently an anomalous, operational wing of the Prime Minister’s department. Far from heralding the progress of Indigenous affairs to the center of national public administration, these migrations signal a volatile history of reversals and revisions, where a lack of governmental confidence is reflected above all in the scant regard paid to domain expertise, experience or memory.[[3]](#footnote-4)

It should not be surprizing that these different administrative channels have tangled relations, producing outcomes that occasionally connect but generally bear little relation to one another. We must therefore make an artificial distinction between the communication activities that interest us, and the social settings in which they occur – not because such a distinction is useful, but because the prism of public policy frequently separates these elements, and treats them differently. We start by considering communications, and then move to the Indigenous policy domain.

### Issues and Imperatives for Remote Communications

If Australian governments have struggled to comprehend the needs and circumstances of remote Australians, this is despite the fact that the geography and social reach of communications has been a common thread in policy and politics since Federation. And if Australia’s distinctive human and physical geographies did not themselves make debates about subsidizing rural and regional services an inevitable feature of policy argument, the political economy of the settlements struck between the new Australian states ensured it would be so. A national government required, in effect, a single market for communications, whether these were postal services, telegraphy, or phone calls. In the case of central Australia, governments, rather than the market, have directly shaped communications from the early colonial period. For our purposes, the key developments are recent. Remote communications assumed a new and urgent shape as a problem of contemporary public policy in the first decade of the millennium, at the same time as broadband communications and the mobile internet were becoming embedded in the everyday lives of mainstream, urban Australians.

Understanding how that happened – and the outcomes for remote communities – involves recognizing two connected processes of policy change that were well underway at this time. First, there was a process of digital transformation, driven not only by technical advances in infrastructure, devices and applications, but, most importantly, by how governments and others responded to new communications technologies. From the 1980s onwards, new communications had undermined confidence in the longstanding model of a government-owned monopoly provider. Then, as mobile and the internet took off, social services, health and community services, education, entertainment, work and commerce began to be redesigned on the assumption that national populations would have access to the necessary infrastructure at an affordable price, and would have the skills and motivations to make use of it. This dynamic had many benefits, while presenting a critical problem, but also an opportunity, for those not online. One effect was to emphasize the increasing relative disadvantage of those Australians without broadband or reliable mobile coverage. While steadily increasing numbers of Australians went online, the question of how to assist and support those without good communications did not diminish in corresponding fashion; instead it grew in importance as a matter for policy and politics.

The second formative change underway over this period was the liberalization of the telecommunications industry, framed by a new, competitive, regulatory model, the incremental sale of Telstra from 1997 onwards, and the subsequent planning and establishment of the NBN. This is not the place for a full review of this history, but we should briefly focus on two turn-of-the-century policy imperatives: the Telstra sale, and the creation of a competitive market for telecommunications. In micro-economic terms, there was no simple relation between these. Paul Keating’s Labor government had been more concerned with fostering competition, particularly through the entry into the market of Optus as a second carrier. The Coalition government led by John Howard prioritized the sale; as it transpired, the effect of that was not more competition, but the consolidation of Telstra’s position as a dominant market player combining control of the infrastructure with a pre-eminent position in retail. This market problem was a key factor in the later development of the National Broadband Network (NBN). At a political and social level, the sale required the support of regionally-based politicians, both within the National Party and outside it. These politicians and their constituencies were motivated by a strong sense of rural and regional disadvantage, and were not naturally inclined to support the disposal of a public enterprise.

On the strength of objections from rural and regional interests, legislation to complete the full sale of Telstra failed in the Senate in 1998. A staged approach, a series of regular reviews, funded programs and accommodations were then necessary for the government to proceed with further public offerings of Telstra shares. The sale was therefore a gradual process, but it represented a slow-motion conclusion to a long period of public control over Australia’s chief communications networks, and the commencement of an ongoing and unstable period of regulation, review and subsidy. A proliferation of large and small publicly-funded schemes, generally short-term, were devised to meet the needs of those users who could not be provided for by market forces alone. It is important to note that the question of communications services for Indigenous communities came into focus through this particular optic: the perspective of a larger population of telecommunications users, including consumers, businesses, and public entities, who were captured under the rubric of rural, remote and regional Australia. This positioning gave Indigenous organizations – increasingly capable as sources of policy innovation over this period – a voice and a place at the communications policy table, where the ‘adequacy’ and ‘equitable’ distribution of services was at issue.

The mobilization of diverse interests in ‘regional telecommunications’ did not always translate into well-directed initiatives: the term has always struggled to cohere the wide range of experiences, problems and situations of all those excluded from mainstream urban infrastructure. From the first regional telecommunications inquiry in 2000 to the present, Indigenous voices have had to emphasize the particularity of circumstances in their societies. Submissions consistently argue the need to design and implement programs with community involvement, and with on-the-ground knowledge of the conditions and circumstances. As this book argues, basic categories that have passed largely unconsidered in mainstream communications, such as the role of communities, or the continuity of the household as a stable organization for the consumption of services, have generally demanded far more careful thought when placed in an Indigenous context.

Nevertheless, a patchwork of major and minor initiatives followed from 1997 onwards, many of them in direct response to the now-regular cycle of regional communications reviews. While most estimates in this period considered around 2 per cent of Australians to be living in locations where commercial communications services were not viable, a considerable amount of public funding supported services beyond that roughly-defined group. Several different approaches were at work. For instance, general purpose grants were offered by Networking the Nation (1997-2004), which used $250million in proceeds from the sale of Telstra to support improved telecommunications for regional, rural and remote communities. Customer subsidies, intended to offset the greater cost of services outside the cities, were offered through Broadband Connect (2005), a $900million four-year program then replaced by the Australian Broadband Guarantee (2007-2011), which funded internet service providers to offer a basic broadband service for remote users.

More targeted programs have focussed on remote Indigenous community needs. The Telecommunications Action Plan for Remote Indigenous Communities (TAPRIC) (2002), Backing Indigenous Ability (2007-10) and the successor Indigenous Communications Program (ICP) funded community projects. Much of the funding in these programs was dedicated to the provision of public payphones. According to the 2005-2006 Budget, TAPRIC’s initiatives sought ‘to overcome a number of complex logistical and social factors affecting the provision of basic telephone services in remote Indigenous communities’.[[4]](#footnote-5) TAPRIC funded the Community Phones Program, which rolled out public phones designed by the Centre for Appropriate Technology (CAT) for the specific needs of remote communities. It also involved a stocktake of the existing infrastructure in remote communities, drawing on Australian Bureau of Statistics (ABS) survey data.

Alongside these specific-purpose programs, a number of longer-term responses to regional disadvantage in a liberalized system were enacted, with lasting consequences. Concerns about consumer safeguards were addressed through a service guarantee, designed to ensure that telecommunications providers repaired faults and dealt with problems in timely manner. Telstra, as the dominant network operator, has been funded to provide, among other public interest services such as payphones, a standard telephone service (STS) under a Universal Service Obligation (USO).

The USO has been an ongoing topic of debate in Australia, particularly in regard to its impact on competition, what should be included in the USO, and its susceptibility to political interests.[[5]](#footnote-6) In theory, a USO is a market design mechanism that works to transfer some of the consumer surplus from one group as an implicit subsidy to another group by effectively forcing a monopoly provider to treat them all as a single market, and by prohibiting price discrimination. A core rationale for the USO in Australia is to provide access to telecommunications for those residing outside cities. The result should be that everyone receives the same supply and pays the same price: the USO thus imposes a kind of transfer from urban to remote consumers via a single provider. However, this has not been the reality.

The policy problems of the USO have emerged gradually, but are now manifold and prominent. First, Telstra has not seen the USO as extending to remote services, especially for smaller communities, thereby creating the need for a succession of gap-filling programs. Consumers in remote Australia are generally not able to access landlines (the STS) as the cost of cables and trenches is still borne by the consumer (and are prohibitive).

Second, the STS is conceived in terms of specific technologies and services, which are of diminishing relevance everywhere, and especially in remote Australia[[6]](#footnote-7). It cannot then reflect the evolving needs of communications users, which now extend well beyond basic telephony, or the rollout of new broadband networks that do not rely on Telstra’s copper infrastructure. Voice services are increasingly used through internet applications that are more flexible, and cheaper than the STS, with support for video, messaging and other functions. But internet access is not part of the USO. Mobile cellular services are vital for network access, but neither are these the focus of the USO. Indeed, the failure of the USO model brings into focus one of the central arguments of this book: the need for a more flexible policy framework for ensuring continuing funding for uneconomic services, and which can respond to local community circumstances and preferences.

The election of the Rudd Labor government in 2007 marked a shift away from the cycle of end-user subsidy schemes towards a more ambitious rethinking of Australia’s communications system. The NBN was conceived as a universally-accessible high-speed network that would ensure Australia’s place in the future ‘digital economy’. It was intended as a general solution to regional and remote disadvantage, through a uniform pricing structure and advanced satellite and fixed wireless services for those households and premises beyond the reach of viable fibre infrastructure. But the network also embodied a micro-economic reform agenda, with NBN’s neutral wholesale role taking over from Telstra’s compromised position in the market, and a service design that would encourage and enable a more diverse range of large and small retailers.[[7]](#footnote-8)

For remote communities, the rollout of the NBN meant the closure of the Broadband Guarantee scheme – which had not in any case been easy to access (see Chapter 2) – and the introduction of an ‘interim satellite service’ (ISS), replaced in 2016 by the much greater-capacity ‘long term satellite solution’ (LTSS), using two new satellites. The ISS was rapidly fully subscribed, and attracted considerable criticism in the 2011 and 2015 regional telecommunications reviews. Bodies such as the Flying Doctor Service drew particular attention to the inability of the service to support time-critical applications such as remote medical consultations.[[8]](#footnote-9) While the long-term solution is likely to considerably improve the performance of the satellite-delivered NBN, the 2015 review forecast a rapid growth in use, and recommended a number of measures to improve the service.

While the NBN will provide a more capable source for the internet on the outstation, it has long been clear that there cannot be any single infrastructure ‘fix’ for the digital divide in remote Australia. The ICP was intended to be a targeted supply and maintenance program for fixed community phones, mobile satellite phones for very small communities (oddly not covered by the USO), and equipment and training for internet access. The program evolved in interesting ways, reflecting the evolution of communications in the bush from basic telephony to the broader range of internet-enabled services, and from simple shared facilities, such as payphones, to a more varied ecology of mobile devices. So while the ICP began with a focus on payphones, over its course we can see this infrastructure being re-conceptualized as general-purpose internet access points, offering not only a phone but also a wireless access point which could then be shared, with mobile devices, across a group of users. The development and installation of the phones, managed for the Department of Communications by Australian Private Networks (2014), is a remarkable story of ingenuity, opportunism and resourcefulness. The addition of the Wi-Fi capability to the community phone was first trialed at the Laura Dance Festival on Cape York in June 2011, and proved instantly popular. The festival organizer reported later that she could not have run the festival without the Wi-Fi.

As part of Labor’s ‘Closing the Gap’ strategy to redress Indigenous disadvantage, internet access was also provided through a Commonwealth funding agreement with the states and territories, the Remote Indigenous Public Internet Access (RIPIA) National Partnership Agreement. In the Northern Territory, the RIPIA contract was awarded to Northern Territory Libraries. RIPIA reflected the broader social policy agenda of Closing the Gap, and signaled a more developed and far-reaching set of concerns than the earlier emphasis on ‘adequate’ communications and ‘equitable’ access. These new goals appear to reflect the more ambitious aspirations of the early NBN period. Better internet access was understood explicitly in terms of building economic and social capital in communities. The objectives were to reduce barriers to services, increase digital literacy and social inclusion, and economic, social and political participation. It followed from this broad vision of the benefits of the internet that, as well as establishing services, maintenance and training would also be supported. This expansive agenda cut in two ways. The social dimensions of internet access were also reflected in a requirement that filtering mechanisms be in place for ‘illegal and offensive materials’. These provisions could well have ameliorated community concerns about internet access; they also echoed the more draconian and paternalistic tenor of those restrictions on computer use that had been imposed under the Howard government Northern Territory Emergency Response (NTER; ‘the Intervention’). However, the RIPIA project was limited in what it could reasonably achieve. Northern Territory Libraries set out to provide access and training in forty sites (the majority in the Top End, not the central desert region), receiving only $6,000 per annum per site for equipment, and a similar amount for training (Broadband for the Bush Alliance, 2013). The program was therefore not able to cater for small communities during the period we are concerned with. In 2015 the national RIPIA program funding was redirected into the Indigenous Advancement Strategy, amounting to $2.2million to provide ‘essential infrastructure such as computers, printers and internet access points to improve internet literacy and educational outcomes for children and adults in around seventy-five remote communities’, and administered through a competitive grants-based process.[[9]](#footnote-10)

What has been the result of these policy and program decisions? One result has been that, for over a decade, the dominant mode of provision was shared facilities, in the form of dedicated computer rooms or shared computers in existing public spaces. Networking the Nation, TAPRIC, the ICP and the RIPIA program have all incorporated this approach to varying degrees.

The resulting facilities do appear to have been an important means for internet access in some communities, at least in the early years. The 2001 census included questions that enabled A.E. Daly to estimate the difference between home internet use and internet use ‘generally’, which might include access at a community center, library, workplace or home.[[10]](#footnote-11) She found that internet use for Indigenous people living outside the capital cities in South Australia and the Northern Territory was three times higher than home use, which was not the case for the non-Indigenous population. (From 2006 onwards the census has only measured internet access from private dwellings.)

In 2009 we undertook a survey of shared internet facilities in the central Australia region. The research involved phone interviews with supervisors or council workers in the thirty-four large communities in central Australia (with a combined Indigenous population of 9,724, or 72 per cent of the Indigenous population of central Australia outside Alice Springs) and visits to ten of those communities. From this we gathered basic information, including whether centers existed, whether they were in continuous use, the number of hours they were open, how the centers were funded, user charges, internet speeds and download quotas, as well as supervision arrangements. We also asked survey respondents to provide anecdotal comment on the level and use of activities that occurred in those sites. We found that while shared facilities have played an important role in establishing communications infrastructure, sustainability was a significant concern in many instances.[[11]](#footnote-12)

We found that less than half of the thirty-four communities had community internet access and, of these, many were only semi-functional. Thirteen communities had at least some working computers for community use as of December 2009. Fourteen were without and four were under development. We were unable to obtain information for three communities. The computers were located in council offices, training centers, Centrelink offices, remote Indigenous broadcasting stations (RIBS) and schools. Many facilities were only semi-active, operating with part-time or no supervision, or waiting on maintenance and upgrades.

In one community, there was a room in the council administration building that had once been allocated and equipped with computers for residents’ use, but at the time of survey the computing equipment had been dismantled and the room given over to use as the community housing office. This ICT center had not been operational for the past two years. Another community was faring better with four operational computers of varying ages, sharing satellite internet access with the council in a room provided by the council in its administration building. However, the room was only semi-active at the time of the survey, and there was little in the way of training and mentoring support available to residents. In another, one of the metropolitan universities was sponsoring internet services in a small public computing building with six computers, using volunteer supervisors where these could be recruited to assist and train residents in using applications such as email, music downloading and internet banking. However, maintaining a steady flow of volunteers who were able to devote sufficient time to settling into the community, gaining the confidence of the residents and making a lasting contribution to their computer learning was difficult. A town camp was awaiting four computers for their community building, which would ultimately be connected by mobile internet with the assistance of their council.

As these examples demonstrate, community media centers have encountered major obstacles, and in general have only provided limited access. A report from September 2003 for the then Department of Communications, IT and the Arts, commissioned in response to the 2002 TAPRIC recommendations, warned that Commonwealth and state-funded centers were already at risk and unlikely to be viable without government support.[[12]](#footnote-13) The report found that cooperative centers with a range of stakeholders were more likely to succeed, as funding overheads could be shared. Our survey confirmed this observation. Moreover, as discussed below, government policy and funding, including for programs such as RIPIA, has chiefly been directed to Indigenous communities with populations greater than 300 people, the idea being that the residents of smaller settlements will travel to larger towns to access services. We had little evidence of residents of the three outstations making use of shared computer rooms in other communities when we commenced in 2010.

In 2014 in the central Australia region, computer rooms were operating at Papunya, Mt Alan, Laramba, Mt Liebig, Kintore, Harts Range, Lake Nash, Areyonga, Amoonguna, Ikuntji, Docker River, Tjwanpa, Titjikala and Papunya. The Yuendumu Computer Centre was closed, and Ali Curung’s computer room was dormant. Although the shared facilities approach has been fraught, there have been some notable successes. As discussed in later chapters, we visited the Papunya Internet and Computer Room on a couple of occasions to gauge how remote community members were using computers and the internet at a known successful shared internet facility. As of late 2015, that center had also closed.

### A Multiplicity of Programs and Reviews

The field of remote communications is characterized by an episodic sequence of programs and reviews, each with different emphases and developing in different ways. As mentioned above, many of these have funded the establishment of facilities, but not their ongoing operation. This was an issue addressed in the first regional telecommunications review, when Besley argued that the ongoing costs of community facilities could be supported by a proportion of the universal cost attributable to the community.[[13]](#footnote-14) Many have funded access, but not training, or training, but not the development of relevant content and applications. Limited by the legacy of the ‘adequacy’ problem, they have rarely approached digital engagement from the perspective of users, who must deal with all of these dimensions of the new information and communication services.

While policy reviews have raised the profile of this issue, their frequency has encouraged a degree of policy churn. The reviews play a useful ‘monitory’ function, holding governments and commercial parties accountable. But they have also created a start-stop dynamic, and fostered an environment where the longer-term research and evaluation problems have been put to one side, while increasingly familiar advocacy – from one sector or another – takes its place. Every review notes the need for more research, but surprizingly little has been done. A better approach, as the 2015 RTIRC suggests, would be to develop a more robust set of indicators, especially regarding the spatial distribution of facilities and services, and a more ambitious research program, aiming for a systematic understanding of the patterns and dynamics of take-up and use.[[14]](#footnote-15) With that in hand, frequent reviews should not be needed for us to monitor effectively the performance of our networks, and the benefits they may bring to remote communities.

### Governing Remote Communities

A feature of the governmental landscape around remote communities are the discontinuities within and between different regulatory and policy positions. There has been no ready trade in concepts, ideas or objectives between communications policies on the one hand, and Indigenous affairs on the other. While the NBN promised to provide high-speed internet to Australians everywhere, other elements of government concentrated service delivery into larger towns. While public funds were being invested in encouraging computer skills, broadly-framed restrictions were being implemented that controlled the use of computers (in particular, restrictions under the NTER during the 2007-2011 period). At the beginning of this chapter, we spoke of the two registers of policy: a communications approach, framed around ‘adequacy’ and equity of access to services, and a more paternalistic Indigenous policy approach with an emphasis on welfare and control. This simple contrast certainly overlooks the diverse motivations and practices of government in remote Australia. But it also prepares us for starkly different approaches and orientations from different policy domains.

In terms of access to services, Aboriginal communities have a particular character and plight in comparison with other localities with the same remoteness status, due to the historical circumstances of their formation. The larger Aboriginal communities, and some smaller ones that predated the outstation movement, were not created as self-sustaining towns, but were formed from Christian missions and ration stations under policies to encourage centralization, forced sedentariness and assimilation.

For instance, a senior woman at Imangara spoke to us of growing up at Hatches Creek before the outstation was established. Her memories were prompted by printouts from a website that someone at the Central Land Council (CLC) had given her, which included an oral history by Joan Deans, wife of the policeman who was based at the waterhole near Hatches Creek. From 1913 until sometime in the 1970s, Hatches Creek was a mining settlement, producing wolframite, a mineral used in the manufacture of ammunition for the first and second world wars. She explained to us that Warlpiri camped on one side of the waterhole and Alyawarr on the other. They also worked in the mines, presumably alongside the Chinese indentured workers mentioned on the website, and received rations. In a separate conversation she mentioned that when she was a kid ‘everyone was working’, and they had to wait in line to receive tea, brown sugar and flour. Hatches Creek shrank to fewer than a dozen people after the mines closed down, while other such communities grew into sizeable townships.

From the 1970s, a fundamentally discriminatory legislative system began to be challenged, and Indigenous Australians were granted citizenship rights. Under the Whitlam government, the era of assimilation gave way to new policies of self-determination, including what has been referred to as the ‘outstation movement’.[[15]](#footnote-16) In the words of the Aborigines’ Progressive Association in 1968, returning land to Aboriginal people was an ‘assuagement to hurt sensibilities’ that could restore Aboriginal dignity.[[16]](#footnote-17) Policy papers from the time expressed an expectation that a return to country would help overcome a ‘culture of poverty’, lead to self-determination and provide Indigenous people with the power to negotiate over use of land (for instance, with mining companies).

Those who returned to their country were able to access grants to build sewerage systems, basic roads, water and electricity from 1972 – infrastructure not intended to meet conventional standards, but to provide assistance that would be supplemented by community efforts, including the development of makeshift shelters or humpies.[[17]](#footnote-18) A landmark development came in 1976 when the Fraser government passed the Aboriginal Land Rights (NT) Act, which provided a legal mechanism for Aboriginal people in the Northern Territory to reclaim their ancestral lands, including direct transfer of missions and reserves to Aboriginal freehold land, and the ability to fight for land that currently wasn’t already claimed. Further development of outstations occurred through the Community Development Employment Program (CDEP), a subsidized community employment program, from the late 1980s. Funding for housing came later during the late 1980s and in the 1990s through ATSIC when people could prove their willingness to live remotely.

The Aboriginal Land Rights Act returned large areas of lands to the Aboriginal people in the Northern Territory, although it only allowed ability to claim unoccupied land. Half of the land mass in the Northern Territory is now owned by Aboriginal people. The majority of outstations are on Aboriginal land, although some are on excisions from pastoral leases (known as Community Living Areas, CLA) or in national parks. The outstations on CLAs form a critical part of the outstations, or homelands, footprint, signalling how some groups remained connected to their lands, despite appropriation of land by pastoralists.[[18]](#footnote-19) Two outstations in this story, Mungalawurra and Kwale Kwale, are on Aboriginal land, whereas Imangara is a CLA.

Outstations are thus settlements where the residents have a descent-based affiliation, and recognized ownership over the land. People returned to country in order to maintain traditional sites, to fulfil their cultural obligations to manage land, and in some cases to avoid political marginalisation in the larger settlements where the artificial collocation of diverse groups had resulted in significant stresses for those who were not traditional owners or who were descendants of the minority language group. As time progressed, outstations also had the appeal of being removed from the social problems of larger settlements, such as alcohol and violence.[[19]](#footnote-20)

Today there are approximately 400 occupied outstations in the Northern Territory, with a population of around 10,000 living in 2,400 dwellings (about 25 per cent of the rural Aboriginal population of the Northern Territory).[[20]](#footnote-21) In the public imagination, outstations have come to represent ‘extreme living’, in the sense that they are isolated, with limited access to services and little infrastructure, and are thus represented as a choice to live apart from the majority in favor of maintaining tradition.[[21]](#footnote-22)

In a submission to a 2003 review of outstation policy, CAT pointed out that outstations have been subject to a coordination problem, falling through the net of available services, with resource agencies struggling to meet the costs of outstation operation, battling to extract user contributions to such costs, and under pressure by the ad hoc nature of funding programs.[[22]](#footnote-23) Such concerns regarding the coordination and transparency of funding and programs to outstations continue to this day. Some of the problems recounted to us by the communities reflect the ongoing challenge of maintaining outstations.

When our project commenced in 2010, outstations had become the focus of political contention around how best to overcome Indigenous disadvantage. In July 2008, coinciding with the NTER and prior to our first consultations, the Commonwealth began divesting itself of funding responsibility for outstations, handing what was available to state and territory governments[[23]](#footnote-24). Some saw the move as reducing duplications and creating economies of scale to provide services.[[24]](#footnote-25) The Northern Territory government’s policy development – designed to coordinate infrastructure and services and ‘set a new path for outstations’ – received wide criticism. In Pat Dodson’s words, outstations were being left to ‘wither on the vine’.[[25]](#footnote-26)

There was a growing inclination amongst some right-wing think tanks to regard outstations as entrenching disadvantage and reducing people’s opportunities. For instance, the demonization of location was apparent in the Commonwealth Minister for Indigenous Affairs’ description of remote communities and outstations as ‘cultural museums’, and in commentator Helen Hughes describing the outstations movements as a form of apartheid and a failed ‘socialist utopia’.[[26]](#footnote-27) Further, Gary Johns argued that the residents of remote communities and outstations should migrate to towns with greater employment opportunities.[[27]](#footnote-28)

Hughes’ and Johns’ ideas are likely to have been influential in the policy shift away from supporting outstations and small communities towards a focus on larger Indigenous communities, known as ‘priority communities’ by the Council of Australian Governments (COAG), or ‘Growth Towns’ in the Northern Territory. COAG’s National Partnership Agreements saw new funding directed to ‘priority towns’, with both government policies aiming to support a limited number of communities with additional funding resources to the point where facilities would be comparable with those in equivalent-sized regional towns. While the Commonwealth and Northern Territory government groups were not identical, there was a high degree of overlap, with a total of twenty communities targeted in the Northern Territory, all of which had a population upward of 300. The decision not to direct the new funding to smaller communities and outstations was that the transport links between the ‘hub’ target towns and the smaller communities in their sphere of influence would be upgraded, with a view to encouraging and assisting residents of these smaller communities to utilize the hub services.

New houses were built on the proviso that the prioritized communities signed a lease, ensuring that the Commonwealth had responsibilities for housing in Aboriginal communities. The lease arrangements were part of government’s secure tenure policy, and allowed all community houses to choose to transfer to a public housing model. Meanwhile, other remote Indigenous Communities not classified as priority/growth towns or outstations continued to receive funding targeted towards specific services such as local government municipal services (power, water, waste management, roads), health clinics, schools, and police stations. They would also later be asked for a lease, so that their houses could be renovated, upgraded or rebuilt (for houses deemed inhabitable[[28]](#footnote-29)). Outstations continued to receive general-purpose infrastructure and service funding through a network of outstation resource agencies and shire/regional councils, which were in turn funded by the Northern Territory government. In 2014-15, 423[[29]](#footnote-30) were funded under the Northern Territory government’s homeland programs for housing and municipal and essential services. The Northern Territory government asserted that the funding provided was making a contribution to living in the outstations, recognizing that funding was insufficient to meet all the service and infrastructure needs of residents. There were no new houses for outstations, and the previous ATSIC moratorium of new outstations remains in place.

While the significant increase in funding was welcomed by large communities that were categorized as priority communities, the policy created uncertainty in funding, programs and service delivery arrangements with respect to the great many communities that were not captured in the priority/growth town policies. There was also evidence within the COAG documents that governments were trying to encourage people into larger settlements, a policy shift that came to be known as ‘mainstreaming’. As Moran articulated at the time, such policies of coercing people did not fit well historically as a development policy for remote Indigenous communities.[[30]](#footnote-31)

The policy effectively established a hierarchy of communities in terms of what should be developed and sustained. For some, the issue was one of unequal access to basic services, shelter and support that should be considered an entitlement for all citizens ‘that should not be contingent on geographic location, at least in any policy sense’.[[31]](#footnote-32) The mainstreaming approach was also ‘premised on utilizing standardized structures and processes for delivering and managing’ housing and infrastructure that did not take into account the particular nuances of outstation needs.[[32]](#footnote-33)

Further, Sanders analyzed the populations that would be serviced under the growth towns policy, demonstrating that there was a significant gap for central Australia regions in particular, where at best only 18 per cent of the population were likely to be captured within the ‘hub and spoke’ of the twenty priority communities.[[33]](#footnote-34) Even with the best transportation options between these large communities and their surrounding smaller communities, there was a significant lack of service coverage for many communities.

We observed at the time that communications policy and Indigenous policy were largely disconnected from each other.[[34]](#footnote-35) The one exception is education, in that schools in Indigenous communities do have internet access, and have been the beneficiaries of various ICT programs in recent decades, as discussed in Chapter 6. At the local level – regardless of policy – communications and other infrastructures, including housing and power, are dependent on each other.

### Houses and Community Infrastructure

The average house in a remote Indigenous community will have a lifecycle of four to eight years, will use about a third of the power of a suburban home, is six times more likely to be overcrowded than other Australian houses, and will have three times more dogs.[[35]](#footnote-36) In 2014, CAT undertook a survey at the Utopia Homelands as part of a $4million commitment by the Commonwealth Government to improve living conditions. In that report, Grey-Gardner and Young observe that residents preferred box air-conditioners over more robust models, because some families lived between three or four houses, taking the aircon with them.[[36]](#footnote-37) Such observations are typical in reports by CAT, an organization that takes into account the social life of infrastructure and objects in its development and maintenance projects. The physicality of the outstation house, its occupants and uses, were thus also integral to understanding ‘home internet’. We carefully documented the use of computers and internet in relation to household dynamics and other community infrastructures and utilities.

On our second visit to one community, the residents of three separate houses were living under one roof. The taps were not working in one house, and there was no power in the other (perhaps a decision to economize on power bills rather than a power fault). The elderly couple that usually occupied the house on their own told us they were considering moving to a ‘humpy or tent’ because the house was so crowded. A few months later they had moved into a caravan, given to them by the Church.

As they were inundated with family members, they thought it unwise to have a computer in the house as it would mean people would spend more time indoors. In other instances, we observed that overcrowding was temporary, until another house was repaired. As discussed in Chapter 4, residents moved into different houses over the course of the project.

From the start we were made aware of the issue of power usage, which seemed something of a deterrent for some residents in their decision whether to have a computer. Each community had a different arrangement for utilities. Mungalawarru has solar power with a back-up generator, and water is supplied via a bore on the land trust. The community houses and shed in Kwale Kwale are serviced by mains power and water supply from Power and Water, except for one outlying house in the settlement with solar power. Imangara has a generator for power supply, shared with the pastoral station and school, and water is supplied from a nearby bore on the pastoral station.

Power bills for all purposes at Kwale Kwale and Imangara were a significant expense at around $50 a month (higher during winter). To receive power, residents need to purchase a power card from a store and insert it into a meter. They were thus very aware of their power usage, telling us that they were conscious not to use too many appliances. Some were concerned that having a computer would significantly increase their power costs. As it turned out, power became more of an issue when computers were located in shared spaces, as people did not necessarily contribute to purchasing ongoing power cards for these buildings.

We delve further into the dynamics of housing, bills and other infrastructure issues in Part Two of this book. These were to become important for understanding household decision-making in relation to the internet, and revealed how the physical circumstances that have marred remote communications from the start continue to manifest at the level of everyday contemporary household routines, inconveniences and capacities. We conclude this chapter with a brief description of each of the communities.

### Kwale Kwale

Kwale Kwale is a small family outstation situated on the Iwupataka Aboriginal Land Trust, approximately 40 kilometers west of Alice Springs. The community is nestled near the foot of the MacDonnell Ranges (an area known as Tjoritja to its Traditional Owners) in rugged and varied desert landscape. Kwale Kwale is one of twelve or so family homelands across the land trust, residents of which descend from four main family groups. Most residents speak Western Arrernte and Luritja. Kwale Kwale has twelve to fifteen permanent residents, with the majority of these descending from one family group. When we first started visiting the outstation, it was also populated by scores of peacocks, kept as pets by the senior women. The free-roaming menagerie had successfully intimidated the local dogs into submission.

The outstation has six houses (not including an old burnt-out house) and a large shed with concrete floors and a veranda, with the indoor space divided into three rooms. One room of the shed was being used as a chapel during this period; the others for various purposes.

Two of the remaining houses stand at a distance from the others, and were occupied by residents not related to the family. One was being used as a youth respite service for troubled youths, run by an older Aboriginal man. The program was taking on youth with law and justice problems, and providing rehabilitation for them away from town. A single Aboriginal man, who was employed in town but enjoyed living remotely, occupied the other house.

### Imangara

Imangara is 207 kilometers by road south east of Tennant Creek, 30 kilometers past Ali Curung. The community has a permanent residency of around eighty residents, who are primarily descendants of five main family groups from the region. The residents mostly speak Alyawarr, but also Kaytetye. The community has eleven houses and three sheds, which are permanently occupied by family groups. As discussed below, there are also other community facilities, including a women’s center and a school.

Imangara is a CLA located on the Murray Downs pastoral station. When land rights were granted, those whose country was being used by others for agricultural purposes were left out. CLAs were designed to overcome that by excising land from pastoral leases so that the traditional owners might live there. The Imangara excision was granted in 1979 in recognition of the close ties that a number of Alyawarr families have with the surrounding country. The fenced living area is 84.72 hectares, located 2 kilometers east of Murray Downs homestead. Over the years that we visited, Imangara cycled through hard times and good times. Dwellings were abandoned, and then later some old houses were repaired and new ones built. Grasses would grow dangerously high at times, and be susceptible to fires. Personal tragedies gutted what had seemed a cohesive township, followed by what seemed a spike in religious activities such as gospel music and church services.

### Mungalawurru

The Mungalawurru community lies approximately 80 kilometers from Tennant Creek on the Karlantijpa North Aboriginal Land Trust (ALT), along with the homelands of Napagunpa, Blue Bush, Kumunu and Kalumpurlpa, which are all to the north of Mungalawurru. The land trust was established in the 1980s. To the south of Mungalawurru is Karlantijpa South ALT, west is Central Desert ALT, and to the east Phillip Creek pastoral station and the old Warrego gold mine site. Mungalawurru lies on a flat plain in spinifex country. A few trees have been planted for shelter at one end of the community, but otherwise the outstation is exposed to high winds and hot sun. At times, blue-green puddles appeared on the road into Mungalawurru, formed from sulphur used to neutralize cyanide from the tailings dam. The road into the community is bitumen for two-thirds of the drive, but the last third regularly became inaccessible in the rain. We were forced to turn back on occasion, and the residents told us of having to walk that 30 kilometers to the bitumen when they got cut off.

The community has close ties with other homelands on the land trust and the land trust to the south, with many family members residing in Tennant Creek, Mungkarta and Ali Curung. The residents primarily speak Warlmanpa, but also Warumungu and Warlpiri. Mungalawurru is officially home to approximately twenty-two permanent residents.

The Mungalawurru community residents have a close association with Phillip Creek pastoral station and Warrego mine, which ceased production in 1989. Many senior residents were students at the Warrego Mine School before the mine closed down. Now the family’s school-aged children reside in Tennant Creek.

The community has five occupied houses and twelve tin sheds, some of which are used as houses and others as community facilities, including an art shed and a health clinic.

### Conclusion

Indigenous social policy and communications policy have particular histories and objectives, and have at times been contradictory in their treatment of remoteness, including the viability of remote living, and government’s responsibility to provide infrastructure to all Australians. As the Australian Commonwealth moves towards a ‘digital by default’ strategy of service provision, the issue of how those living in remote Australia will access services online becomes more critical. In the next chapter, we take a closer look at the notion of the digital divide and discuss the practical aspects of bringing internet to the outstations.

## Chapter 2: Infrastructure

When we first visited the three outstations, only one house out of twenty-four had an internet connection. A man at Kwale Kwale who was living on the community with the permission of the traditional owners had figured out that he could receive a tolerable mobile broadband signal 40 kilometers from Alice Springs by taping a 3G stick modem to a pole on his roof, connected to his computer by a long ethernet cable. His house was located a kilometer from the main cluster of houses, and his solution had gone unnoticed by others at Kwale Kwale, as he did not interact much with the family. Four years later, fifteen households in the three communities had home internet connections, received via domestic satellite dishes planted on the rooves of their houses. The residents were paying for the internet through a retail service provider under standard contracts. We had assisted them to sign up for the services, but the decision to acquire the services was entirely their own.

This chapter describes the decisions and steps that led to residents accessing the internet at the outstations, and how these efforts fitted within our research approach. We discuss the reasons for using a trial approach to understanding a digital divide problem, and how the process of providing computers and internet enabled us to test some policy assumptions around the most effective or most culturally-appropriate forms of access. Although on the surface our approach resembles previous studies that have occurred in the area of information and communications technology (ICT) for development, we explain how our motivations and actions differed somewhat from that particular field of research. In the second half of the chapter, we provide a plain-language account of some of the technical components of the project.[[37]](#footnote-38) Our interest in, and documentation of, the material aspects of the hardware, as well as our own interactions with the internet service providers, yielded important insights into how infrastructure can frame social relations and influence people’s digital choices.

### The Digital Divide

As discussed in the introduction, we set out to examine a digital divide problem, in that we were interested in understanding what benefits, if any, digital resources confer on individuals and groups, and whether those who are *not* making use of them are disadvantaged as a result. The term ‘digital divide’ has fallen in and out of favor amongst media studies researchers since it first emerged in public discourse during the 1990s. These debates are helpful in understanding the limits of research on internet adoption and use, and informed how we carried out our work.

The digital divide was first used as a measure of how the ‘Information Society’ was progressing within and between nation states. Countries began to measure computer and internet ownership as an indicator of knowledge economy growth and competitive advantage. These exhaustive statistical studies were based on a tradition of work on telephone penetration, such as that developed by the National Telecommunications and Information Administration (NTIA) in the United States, and the emphasis on hardware and network reach was carried over to the analysis of the social distribution of the internet. The NTIA positioned the digital divide as physical access to computers by measuring the number of households and individuals with a computer and internet connection, and in 2002 declared the divide was largely overcome—‘we are truly a nation online’—with the internet being used at work, schools, and libraries as well as at home by over half of the American population, and rising by two million new users a month.[[38]](#footnote-39)

However, by the early 2000s, a wave of scholarly attention had emerged that refuted simplistic notions of the divide as referring to physical access to computers. The ‘either you have access to ICT or you do not, you are either connected or you are not’ approach, it was argued, assumed that with enough resources and political will, the divide was easy to close or bridge.[[39]](#footnote-40) Even with computers, some people did not have the necessary skills or motivation to make use of them to the same degree as others.[[40]](#footnote-41) Skills, autonomy of use (including where access occurred), attitudes towards technology (relevance), and types of use therefore became the main themes of digital divide research. The refocused concern for the social dimensions of usage was considered ‘a more elaborate and realistic understanding of inequalities in the information age’.[[41]](#footnote-42)

Analyses of data sets drawn from many different countries have revealed strong correlations between socio-economic status and internet adoption. Some theorists have argued that as social disadvantages, such as low income and lack of education, appear to be linked to the digital divide, the divide can only be addressed by tackling those apparent causes – effectively rendering the concept redundant, or at least unexceptional as a singular policy concern.[[42]](#footnote-43) However, as Helsper notes, ‘there remains significant debate around the existence, nature and causality of these links’, a question we address directly in Chapter 9.[[43]](#footnote-44)

The most recent research on the digital divide seeks to know whether internet use produces tangible outcomes, and whether unequal distribution in the ways that people use the internet is reinforcing existing inequalities. These studies are asking who benefits most from being online in terms of economic, cultural, social and personal wellbeing, and how this links to skills and online engagement.[[44]](#footnote-45) Researching tangible outcomes requires establishing a hierarchy in the nature or quality of use and mapping the opportunities people choose to take up.[[45]](#footnote-46) For instance, online resources, such as being able to look at job classifieds online, can translate into being able to find a job through access to more opportunities. Studies of how people enact online opportunities tend to support what is known as the *Matthew effect*, whereby the rich get richer, or the *knowledge gap hypothesis*, which posits that those with more resources gain skills and technologies before others, thus reaping advantages sooner and increasing rather than decreasing knowledge gaps in society.[[46]](#footnote-47) Van Duersen and van Dijk found that in the Netherlands, where internet adoption is near-ubiquitous (96 per cent of the population), capital-enhancing online opportunities are more likely to be taken up by those with higher education and income ‘which would accordingly reinforce their already strong positions in society’.[[47]](#footnote-48) However, some groups defy prediction, displaying high levels of digital inclusion despite experiencing other disadvantages.[[48]](#footnote-49) As part of our research in the outstations, we routinely asked people questions about their internet use, as well as what they would like to learn to do in order to understand how the residents responded to the opportunities of being online. Determining whether Indigenous Australians living in remote areas were making different choices from other Australians, and why, was one of the central questions we set out to answer.

In attempting to research the digital divide in remote Aboriginal communities, we were presented with some unique challenges. Many people in remote communities had never used the internet when we commenced (including the majority of adults in the three communities). While other studies have moved on from basic questions of use versus non-use, this was clearly still important to our research. Moreover, although most countries possess longitudinal data on internet adoption and use that enable statisticians to draw correlations between internet access and other forms of social inclusion, as explained below, remote Indigenous populations have been left out of many Australian data sets. We also had serious doubts as to whether the questions being asked of other population groups would tell us much about the dynamics of the digital divide in remote Australia, given that unique factors were in play, including cultural norms, extreme environmental conditions, and a different range of opportunities. Therefore, although we undertook a standard line of questioning around people’s online engagement, their attitudes towards technologies and their skills, we set out to examine these in relation to daily life in remote communities.

### Researching the Digital Divide in Remote Australia

Digital inclusion research has mostly been conducted through sample surveys, such as the World Internet Project.[[49]](#footnote-50) These studies show that although the digital divide in Australia is narrowing, it is doing so increasingly slowly.[[50]](#footnote-51) However, sample surveys of internet use in Australia have bypassed remote Aboriginal communities due to the obstacles posed by lack of landlines (generally used to administer surveys), as well as language and cultural barriers. There is also no current data on ICT infrastructures in remote communities, which prevented us from providing an in-depth analysis of adoption in relation to different kinds of internet programs and services nationwide (see Chapter 9 for an analysis of mobile adoption in the central Australia region). Although ICT infrastructure was included in the Community Housing and Infrastructure Needs Survey (CHINS), the last CHINS collection occurred in 2006, and the survey has since been discontinued.[[51]](#footnote-52) A key report on internet in remote communities produced by the Australian Communications and Media Authority (the communications regulator), published in 2008, relied heavily on this data. Telstra’s Telecommunications Action Plan for Remote Indigenous Communities (TAPRIC) data (see Chapter 1) is not publicly available.

For this reason, we restricted our analysis of available statistics to the central Australian region, where we were able to determine available infrastructure through our networks. As described in Chapter 9, the census provides a limited amount of information related to the internet. However, we gained insight into variations in adoption by examining how 2011 census data on households’ internet connections corresponded to our own knowledge of types of internet available.

As so little research had been conducted on internet adoption and use in central Australia, we were conscious that measures typically used to gauge ‘high versus low order’ internet use would not necessarily apply. Determining whether the internet was used for job searches, for instance, says little about digital inclusion when there are no jobs nearby (or where employers are not using the internet to promote those jobs that are available). Understanding the tangible outcomes of internet use thus required significant engagement with communities to understand their particular circumstances and priorities, which we undertook across a four-year time-frame. As Correa and Pavez note in their study of first encounters with the internet in remote (non-Indigenous) communities in Chile, ‘geographic isolation makes the social context more decisive in any action or decision’, and digital inclusion is a process that involves ‘multiple dimensions such as technological access, skills, different uses, social contexts and support’.[[52]](#footnote-53)

Tim Rowse has observed that, when used in policy contexts, statistics can create a ‘regime of truth’ that overrides the lived realities and dynamics of remote communities.[[53]](#footnote-54) Economist Amartya Sen makes a similar point in relation to social exclusion.[[54]](#footnote-55) Exclusion, he argues, needs to be understood in terms of the causal process, which requires an understanding of the social context. Sen’s capabilities approach is a useful framework for considering the digital divide, as it asks what substantive freedoms people possess given the constraints placed upon them, and about their ability to enact the outcomes that they value.[[55]](#footnote-56) We found that particular deprivations can be difficult to understand when encountering individuals in remote communities when no background information is available. For instance, on an early visit, we asked a man if he was living in the community, and whether he was interested in having the internet in his house. He replied that he did not have a house and was living in the ‘windbreak’ – a makeshift shelter of branches and found objects in someone else’s yard. Whether the man was permanently living an itinerant lifestyle – having fallen through the cracks of welfare and housing – or whether his circumstances were the result of the ‘temporary mobility’ discussed in Chapter 4, changes the meaning, duration and consequences of what we might consider to be a hardship. Putting up with inadequate shelter because of a willing decision to visit relatives is different to not being able to afford accommodation, or being excluded from a public housing register. As Sen writes, ‘The issue, ultimately, is what freedom does a person have – everything considered. It should come as no surprise that a person’s deprivation can have diverse origins and may take disparate forms’.[[56]](#footnote-57)

For Rowse, the appropriate unit of analysis is not comparison between statistically-identifiable groups, but an understanding of how a group of people in a particular place is ‘doing well or doing badly in ways that are specific to region and cultural heritage’.[[57]](#footnote-58) Although we were not able to conduct a nationwide investigation of internet in remote communities, in conducting our qualitative research on the three outstations (complemented by two case study investigations in two larger towns), we were able to understand better what digital exclusion means in relation to the specific circumstances of remote community life and individual agency.

### Trials and Experiments

Neither can standard statistical approaches tell us about the effectiveness of particular interventions. A different approach to digital divide studies has been to provide ICT infrastructure where there is none, and to measure the outcomes. The benefit of trials is that they can produce insights into how a technology or system fares within a social context. The small-scale intervention that we designed was intended to examine a specific policy position, in that shared internet facilities were presumed to be the most viable and appropriate, and yet there was no evidence to support one form of internet access over another (see Chapter 1). Moreover, only communities with a population of over 300 people were eligible to apply for funding for shared facilities at the time. By implementing our alternative policy approach, we set out to understand whether shared facilities were the most desirable and practical solution, and what might work in their absence. If personal ownership and acquisition were possible, then understanding what level of assistance and maintenance (if any) was necessary could assist Indigenous organizations to develop their own programs.

A small-scale trial of the kind that we embarked upon cannot be used to make reliable predictions, as the results are specific to the time, place and people involved. However, qualitative research of this kind has the advantage of showing *why* a particular approach works, and of providing insight into complex social dynamics. In the field of education technology, some studies have attempted experimental research using randomized controlled trials, whereby the intervention is applied to a statistically-significant group, selected randomly, and compared to a non-treatment group.[[58]](#footnote-59) Such approaches seek to show definitively if an intervention works, and can provide strong evidence that can be used to support and justify particular policy responses. Large randomized controlled trials still require qualitative research in order to understand how or why the particular outcome has occurred. While valuable, the experimental approach is not usually practical when working with Indigenous communities, where the processes of consent and consultation can preclude random selection, and where projects need to be adaptive to accommodate community concerns and needs.

The Home Internet Project trial involved three stages. The first involved consultation with the outstations and a baseline study. On our first visits to the communities in 2010, the Central Land Council (CLC) and the Centre for Appropriate Technology (CAT) made initial contact and consulted with community members, at which time the elders agreed to the project. During our early meetings with the communities, we carefully documented their prior use of ICTs, and tried to ascertain what they perceived to be the barriers to ICT uptake, and the opportunities available through having computers and internet access (see below).[[59]](#footnote-60) In the second phase, from 2011, we monitored the issues as they unfolded, and carried out research in two larger communities in order to compare home internet with other types of access. CAT provided a total of twenty computers and associated satellite services connecting all computers to the internet in Kwale Kwale (four), Mungalawurru (five) and Imangara (eleven)[[60]](#footnote-61). Aside from the research fieldtrips, CAT researchers also carried out regular ICT training and maintenance support in the communities for two years from the commissioning of the facilities. In the mid-phase of the project, we extracted usage data from a small number of computers (with the owners’ permission) to confirm that the computers were in fact being used in the way we were told. We also broke off into teams to conduct case studies in two larger communities, one with a successful shared internet facility (Papunya), and the other with mobile coverage (Ali Curung). The case studies proved important in that they enabled us to compare home satellite internet with other infrastructures. In the third phase, from the end of 2013, we assisted the households to set up internet services (where desired), and documented the transition. Participants were given the choice to maintain internet access by paying for their own plans under a government-subsidized program, the National Broadband Network (NBN) Interim Satellite Solution (ISS). We continued to visit the communities in 2014 in order to understand how the households were faring with their own internet services. That final stage of the research, where households decided whether to transition to the NBN and to maintain their own services, was revealing, providing important insights into how the government’s solution to providing internet to remote areas was failing this particular group (see part III).

Much of our time during our research visits was spent traipsing from house to house, checking up on the computers, providing people with fresh paper, inks and accessories, as well as responding to requests for on-the-spot training in ICT skills and applications. We became the technical help – the IT support – performing mundane tasks to remove a frustration and return things to normality. Those of us who were less IT proficient were asked to help set up accounts, but we also learnt to blow the red dust off a circuit board, and check for first principles (cords plugged in, power supply on). These ad hoc house visits were as informative for us as they were for the residents, giving us a snapshot of how different individuals were learning how to use the computer, how they maintained the computer, and what these factors might say about the relative value of ICTs in the outstations.

Our research approach thus involved a degree of ethnographic observation, but accrued through short visits of a day or two duration every six weeks or so in each community. CAT and CLC had a great deal of background knowledge of the families and communities, and received information through their extensive networks of events that occurred during the trial period. Such information was useful in helping us to avoid intruding on the communities during difficult or inconvenient times, although sometimes our information networks failed us (the worst example being when we showed up the same day a coffin was delivered). The following chapters draw on such information, but this book should not be taken as a full anthropological account of these communities; nor do we think such an approach was necessary. As the project progressed, we became increasingly aware that a less-intrusive approach was sufficient, and perhaps preferable, for understanding the digital divide, partly as it was easiest to discuss computers in our roles as helpers.

### ICT for Development

On the surface, our approach resembled what is known as ICT for development (ICT4D), in that we were introducing a technology to a population that was largely going without. Although the findings and critique of ICT4D is useful in considering the dynamics and outcomes of our work, we do not locate our approach in this field of research. Instead, the trial occurred in what we see as a trajectory of media and communications projects initiated in remote communities through Indigenous organizations in collaboration with researchers.

Development communications (or ‘communications for development’ or ‘development for social change’) has a long history that we do not have space to recount here.[[61]](#footnote-62) The practice of development communications generally involves an external agency operating within a situation of need, where this role cannot be performed by the community, or by the government agencies charged with serving it. These projects are based on the rationale that communications technology is integral to social and material advancement in order to facilitate the exchange of ideas in a well-functioning society, and to overcome inequities in access to information. Development communications has been widely critiqued for overlooking the inherently social aspects of communication technology, and for assuming that technical and administrative solutions can overcome structural and political inequalities.

ICT4D is a variant on development communication, in that it moves away from development as merely an outside aid program, to something that could be entrepreneurial and work in harmony with corporate and national economic aspirations.[[62]](#footnote-63) ICT4D has a tendency to assume that ICT is inherently ‘meta-enabling technology that will bypass all institutional and infrastructural obstacles’, providing unlimited opportunities for social and economic development.[[63]](#footnote-64) Those at the ‘bottom of the pyramid’ are assisted to improve their circumstances through online engagement and enterprise. Early iterations of ICT4D argued in favor of shared facilities, which were considered to ‘take advantage of economies of scope’, as they aggregated demand across an entire community, ‘thus reducing costs, while increasing traffic and helping to integrate the facility into the social fabric of the community’.[[64]](#footnote-65)

Faye Ginsburg has critiqued the ‘neo-developmental’ logic of the digital divide framework generally, arguing that Indigenous peoples in particular are often depicted as ‘waiting, endlessly, to catch up to the privileged West’ on the technological front.[[65]](#footnote-66) Traditional peoples are thus treated as existing in a separate time, not just place, from the mainstream. As Mazarella points out, the ‘insistence that computers come later’ perpetuates the assumption that technology should be evaluated in terms of a hierarchy of needs that can be known in advance.[[66]](#footnote-67) He asks, ‘What if the power of a medium is as much performative as it is functional – that is to say, what if it brings about its effects as much through the desires people invest in it as through its ability to deliver predefined utilities?’[[67]](#footnote-68)

Mazarella’s question is important. As explored in Chapter 1, overcoming Indigenous disadvantage has been a contentious and highly-politicized field in recent years. The digital divide can appear as a minor concern in contrast to pressing disparities in health and education, or housing needs. However, the possibilities and outcomes of communication technologies are less easy to anticipate and to measure.

We did not see our project as an ICT4D project because we were working with and through Indigenous organizations with long track records in service delivery and infrastructure. CAT in particular performs a watchdog function, starting from a research perspective of determining what works and why before providing services. In the years preceding our project, CAT had been directly involved in government community ICT initiatives, including the development and implementation of an alternative community phone project that provided over 250 pay phones to remote communities. The phone operated with pre-paid cards, and was built from the electronic components of readily-available domestic Telstra phones to enable cheap and easy replacement, encased in a stainless steel shell that protected it from damage.[[68]](#footnote-69) The CAT phone became known as the ‘NED phone’ due to its likeness to Ned Kelly’s armour.[[69]](#footnote-70) During the period within which the home internet trial took place, other Indigenous organizations, including the Indigenous Remote Communications Association and its member groups, were striving to bring their board members into the NBN debate, and building knowledge and alliances within communities.

Government agencies that serve remote communities are not necessarily incentivized to commit to small-scale initiatives, particularly trials where the outcome is unknown (the APN community phones WiFi project being an exception). The history of communications in remote Indigenous Australia reflects this, whereby many innovations have occurred ‘pre-policy’ and in an ad hoc fashion through the efforts of the Indigenous sector, including broadcast infrastructure, screen and radio production, high-frequency (two-way) radio networks, satellite television and videoconferencing. Indigenous-owned organizations, together with local leaders, have carried out these experiments, aided (and in some cases generated) by non-Indigenous workers from the education and media sectors. The enterprises and infrastructures of remote media and communication have thus arisen from two cultural traditions operating together within the one settler state.[[70]](#footnote-71) This is not to say that our presence in the communities was unproblematic – for us or the residents – but only to recognize, as Melinda Hinkson writes, that the sometimes-uneasy coming together of two traditions is the ground upon which the Indigenous communications industry has been built.[[71]](#footnote-72)

### Prior Experience with the Internet

What was the nature of internet access when we began? There were six computers to be found across the three communities when we started, including the one house with an internet connection mentioned at the opening of this chapter. Not all of the computers belonged to those residing in the communities – at least two were on loan or gifted from people outside of the community. In our early conversations with forty-eight of the residents (about 50 per cent of the adult population of the three communities combined), we learnt that over half had used a computer at some point in the past. However, only two-thirds of those who had used a computer had also used the internet, and three-quarters of internet uses were aged 30 or under. Those in the 30-45 age bracket were most likely to have used a computer, but not the internet.

Although none of the communities had mobile coverage, approximately 30 per cent of people we spoke to had purchased mobiles for use in town. Some mobiles had been given to school-aged relatives who were staying in town, so that the children could ring the community payphone when they needed to contact home. A third of mobile owners were aware of, or using, their mobile for internet access – mostly for music downloads and/or chat – which amounted to 10 per cent of everyone we spoke to. One woman had accessed the internet on a mobile phone, but had never accessed the internet from a computer. She was to become one of the most frequent users of the internet.

Approximately one-third of those without a computer said that either they didn’t know how to use it, or had never considered getting one. This last group generally had very little knowledge of what a computer could be used for, and some older people asked us to explain what we meant by the words ‘computer’, ‘laptop’ and ‘internet’ – questions that left us stammering for non-technical descriptions. One man had seen twitter feeds on television programs, and grasped that it enabled people to participate in conversations, but wanted to know how that worked.

As discussed in later chapters, there was significant interest in getting computers, primarily for kids schooling, entertainment, and for some cultural and enterprise activities. However, there were also significant doubts around affordability, the security of the equipment and language barriers.[[72]](#footnote-73) As the few individuals who owned a computer, or had owned one in the past, were conscious of who they allowed to use the computer, these computers were not necessarily available to others. One young man kept his laptop locked away when he was not using it. Having only a small number of computers in a community also created annoyances for owners, mostly from others who wanted ‘to put songs on their mp3 players’. A woman who owned a laptop was protective of it, telling us that ‘people want to use it but I tell them no because they might spoil it’. These conversations suggested that there was not a critical mass of computers in the community for everyone to experience computer use, and those that did exist were coveted possessions. In the following chapter we explore how these dynamics of ownership changed after the computers arrived.

It is important to consider that the residents had been living with inadequate telecommunications, and that this perhaps influenced their attitude to acquiring their own internet services. Out of the three communities, only two homes had active telephone lines, both in the same community (Kwale Kwale), and both in the homes of older people. One of these phones had restrictions on it; they could receive calls but could not make any charged calls, except by using a pre-paid phone card. Both phones were initially installed to enable contact with medical services. Imangara and Mungalawurru both had a single public payphone in an outdoor cabinet. The distance to houses at the other end of the community was up to 400 metres. Three older people in Imangara expressed a desire for a home telephone: ‘[We] would like telephones. The one here breaks a lot. I need a phone to ring family and friends in other places’, an older woman told us. The older residents had limited knowledge of what services they were entitled to, or what was available for purchase. When asked how they would go about getting a telephone, none was able to provide a straightforward answer. One woman said she didn’t have a home phone because she ‘hadn’t been given one’. Others said they would contact the council in the first instance, rather than a telecommunications company. The elders in Imangara said that they would like at least one public phone for each cluster of houses (‘camp’), as it was too far to get to the telephone if someone was calling.

The attitude of waiting for external authorities to provide telephones is unsurprising, given the way in which Australia’s USO has been delivered, whereby consumers are entitled to services but must cover the cabling costs themselves – costs that are beyond households or even whole communities (Chapter 1). Satellite internet, however, was heavily subsidized at the time, including installation costs. That households had not sought out satellite internet, despite this being far more affordable than home telephones, seemed peculiar to us – until we began the process of installing satellite internet ourselves.

### Connecting to the Internet

Infrastructure is relational, in that different actors can have a very different experience of it, whereby one person’s infrastructure is another’s obstacle. Sandvig gives the example of a staircase, which is a means of passage for most, but a barrier for someone in a wheelchair.[[73]](#footnote-74) Moreover, infrastructure is not just the hardware and technicalities, but also the rules, pricing and players that determine who gets to use it. Communications infrastructure is thus tied up in human experience, and evolves through planning, regulation, markets and the networks between them. We began to examine closely who was benefitting from communications infrastructure in remote communities, as well as who was left out. The behavior of the infrastructure providers when we began to install internet services was particularly illuminating.

In early 2011, about a year after our initial meetings with the three communities, installation began. During our initial scoping of the project, we made the decision to provide internet in the most cost-effective way, on the principle that whatever system we installed would be the most affordable for the communities should they choose to continue to keep the internet when the funding ran out.[[74]](#footnote-75) Unfortunately, our low-cost model meant that we were providing limited download capacity and speeds, but we felt that this was better than providing the communities with services that would be expensive for them to maintain at the conclusion of the project. The model we implemented thus involved using as few satellite dishes as possible, with point-to-multipoint point wireless transceiver links to other houses. Each household that chose to have a computer and internet connection made that decision with the full knowledge that they would be actively participating in the study.

We set up the accounts using the Commonwealth government’s now obsolete Australian Broadband Guarantee (ABG) scheme, which provided subsidized internet to households in remote areas (see Chapter 1). CAT acted as facilitator for the households (or, more precisely, the individuals representing them), whose actual names would be on the application and account for the service.

Although the ABG scheme subsidized provision of satellite broadband to remote areas, connecting computers to these services was not straightforward, but involved a long sequence of steps. Customers had to determine via an online map which registered ISPs operated in their area (or call the government department if internet access was not possible – a likely scenario); register their details online; confirm their permanent residency and the permanency of the building itself; contact one or more of the ISPs to obtain and compare service offerings; and forward the signed declaration form and their contract application to apply for the service. For customers in very remote areas, the ISP would then typically apply to the government department for approval for an additional subsidy. Assuming the customer had arranged for a continuous 240-volt power supply, installation could then commence (notwithstanding what could be several changes to the installation schedule due to weather conditions affecting roads). Once the service was installed, normal billing processes would ensue.

This series of actions is reasonably straightforward if the customer is readily contactable by phone, has a good grasp of English and has sufficient knowledge about broadband services to be able to make an informed choice of service plan. However, the process can be particularly trying for remote community residents who do not meet all these criteria, and whose only external communications option is a single payphone. Organizing the connections from the relative convenience and comfort of CAT’s Alice Springs office took co-author Andrew thirty phone calls. CAT was also quoted $1,100 to have an additional power point installed in a shed already serviced with power. It was little wonder that no households had organized satellite internet services.

The computer equipment supplier visited the communities with CAT to get an idea of their layout and the dimensions and conditions of the buildings, in order to design arrangements for the WiFi directional antenna equipment. A separate company from Mt Isa, a sub-contractor to the ISP, installed the internet satellite facilities the following month with CAT’s assistance. Each installation only took several hours; the sub-contractor’s visits to Mungalawarru and Imangara formed only one stop on their three-week timetable, covering about 10,000km and traversing western Queensland, northern South Australia and central and southern Northern Territory. We decided that point-to-multipoint wireless was a more cost-effective choice for connecting the computers to the satellite internet services, because installing cable would also have involved digging trenches between all the houses. Additionally, if a house was rebuilt or added (and housing works did occur at Imangara in the last year of the project), more cabling and trenches would be needed.

In choosing an ISP, we took into account the suitability of the available plans, especially the need for one with a high-speed quota, because there would be several computers sharing the service. The service we chose was also ‘shaped’ to ensure that once the monthly quota was used up, there would be slow-speed residual access to the internet, but no additional charges would accrue.[[75]](#footnote-76) By shaping the services, we avoided a situation where one or more computers might monopolize the internet quota by spreading the overall usage over the full billing month period, preventing the quota being used up prematurely. However, the low download capacity and speeds undoubtedly influenced the use of the computers.

We began the installation process at Kwale Kwale, because it was closest to Alice Springs (where CAT, the partner most involved in this stage, was located), and therefore easier to roadtest the process and any issues that might arise. We chose the large shed near the community’s central core of three houses for the satellite dish and service, because it had mains power, allowed direct connection to two of the four new computers, and had a better (though not ideal) line of sight profile to the other two houses for local WiFi radio connection. Locating the dish in the shed later proved to be a problem, as it required that the community maintain a power supply to the equipment by replenishing pre-paid power cards as needed. Although households were prepared to do this when the dish was co-located with other household appliances, the same commitment did not stretch to a shared space, and the connection would fail due to lack of power.

At Imangara, we had two satellite services installed, so that the level of internet capacity at this larger community would be similar to that available at the two smaller outstations. Originally, two senior residents agreed to be the custodians for these services, so the dishes were to be placed on their respective houses. However, one decided to move to Tennant Creek to support his grandchildren, who were attending school there, and the service intended for his house was moved instead to the Women’s Centre, the other most viable option. This change of arrangements took some time to confirm with the ABG staff, and was only approved a short time before the installers visited the community. The degree of mobility amongst remote-community people and the amount of time this change took to process with the ABG group was early evidence of the difficulties associated with subsidized satellite internet programs in remote communities. Movement between houses, and to and from community, was to become a significant factor that influenced people’s access to the internet. As recounted in Part III, issues with providers persisted when the households moved to the NBN interim satellite service scheme in 2013.

### Computer Choices

The second level of infrastructure concerns involved whether the households might want laptops or desktops, a decision that we believed might be important in terms of residents’ mobility. On an early visit to Imangara, we found a discarded laptop on the back of a trailer, which was missing a keyboard. After observing this, we pointed out to the residents that desktop computers were tougher, the screens and keyboards were larger and easier to use, that desktop computers were also more likely to stay in one place, and that the individual parts (keyboard, monitor, mouse) could be replaced. Laptops, we said, were a good idea if they expected to be moving to and from their community on a regular basis. After weighing up the information we gave them, most community members chose desktop computers rather than laptops. Along with computers, we supplied printers, inks and paper, and accessories such as mice, cables, headsets, speakers, keyboards, power boards and spare monitors. People wanted to be able to print pictures and photos in color from the computers, so we provided gel-based, inkjet color printers, because they were cheaper at an entry level and at cost of printing per sheet, and the ink was less likely than conventional inkjet printers to dry out in extreme desert temperatures .

As we were interested in whether communal facilities were preferable to home computers, we gave the communities the option to have some or all of the computers in public spaces. Initially, people at the communities weren’t sure whether they wanted individual computers in their houses, or whether to share terminals. At Imangara, some senior women felt the equipment would be safer in the only community building available, the Women’s Centre. But by our next trip, most households preferred to have their own computer. We put two more computers in the Women’s Centre, in any case, for any residents who didn’t have computers in their homes, and for use by the couple running the Women’s Centre. The use of these computers is discussed further in the next chapter in relation to ownership and sharing.

At Mungalawarru, residents came up with a mix of computers in four houses, and two in what was known as the ‘CDEP Shed’—a building used for the government’s Aboriginal work-for-the-dole scheme. People at Mungalawarru were highly mobile, often shifting between their community, Tennant Creek and other locations, and placing a couple of terminals in a shed seemed like a good option, because more transitorycommunity members could use them. Two residents at Kwale Kwale chose to have a home computer**,** but a senior couple was unsure about whether they wanted one at home. Ultimately, the senior woman decided that the shed was the best place, and we placed two of the four computers there for them and their family members to use.

In total, we initially installed twenty computers: four at Kwale Kwale, five at Mungalawurru and eleven at Imangara. Although only a few computers ended up in public spaces such as sheds, as discussed in the next chapter, tensions emerged around who got to use the communal computers, who owned them or whether they were up for grabs. The movement of the computers, and people’s claims over them, revealed to us dynamics of Western and traditional notions of ownership that were sometimes at odds (see Chapter 3 and Appendix 2).

The residents were concerned about protecting the equipment when they were away from the house, or when they didn’t want kids using it. Residents at Kwale Kwale first raised the idea ofhaving lockable computer and printer covers. CAT designed a computer cover with vents around the top to allow heat generated by the equipment to disperse, as well as a hasp that could be secured with a padlock. The Kwale Kwale residents approved the cover, and it became the model for use in the three communities. Tables with a robust metal frame were also provided with each computer, and some of the residents and kids at a couple of the communities helped paint the tables and covers.

When we first discussed with the residents the option of having a computer, some told us they had no room for one. Some residents asked us to build an extra room on their house for the computer, a suggestion we politely refused. However, the issue of space did not turn out to be a major problem for most households. We found the rooms in the larger houses were sparse, possibly reflecting the fact that occupancy varied often, and that individuals did not necessarily lay claim to particular bedrooms.[[76]](#footnote-77) In most cases, the residents opted to place the computer table in the most spacious room – the main living room at the front of the house. A handful of residents decided to put the computer table in a bedroom.

We documented movements of computers between houses in order to understand the implications for home internet. If satellite internet was organized at the household level, with a dish attached to the roof of the dwelling, moving houses would have implications for individuals accessing that internet connection. We developed the hypothesis that community-wide broadband infrastructure – such as a shared WiFi network that could be received at any dwelling – would be necessary, due to such intra-community relocation. As mentioned, by the end of the project, a number of households had chosen individual subscriptions over such an arrangement, with those households having at least some family members who could be considered permanent occupants.

### Detractors and the Fate of the Infrastructure

When the project commenced, detractors said that the computers would never last given the harsh environment, distance from repair outlets, overcrowded spaces, and even dogs. Cultural factors to do with communal sharing, mobility and ownership were also raised as likely obstacles to home computing, meaning the computers would be given away or taken out of the homes permanently. A station owner told us it was a ‘hare-brained idea’ that would give community members another reason ‘to sit at home and do nothing’. Essentially, the fact that very few households had purchased computers and entered into internet subscriptions of their own accord was seen as proof that home internet was, at best, not the preferred means of access, and at worst, either inappropriate or unviable.

The detractors were wrong, in that despite equipment failure, loss or damage, an average of seventeen of the twenty computers installed by early August 2011 were still operational by the end of the first year. By the end of the project (twenty-five months since installation), two computers had been lost or taken out of the community. For comparison, a study of computers in offices conducted by an American commercial research company revealed that three and a half computers would typically fail in a twenty-five-month period (see Table 3 in Appendix 2 and Crouch 2014 for a full account).[[77]](#footnote-78)

Computer accessories, such as headsets, mice, keyboards, cover padlocks and power boards did not fare as well, being comparatively vulnerable to damage and removal. After the first few months of the project, computer tables were rarely locked and items often disappeared, especially power boards and external speakers, which could be used with other household equipment. Not surprisingly, printers were the equipment to break down most frequently, in some cases irreparably so, with an estimated service lifetime of about two years in these communities. The build-up of dust and grit inside printers, often caused by residents leaving the cover off the paper feed, was a particular source of malfunction. We took one broken printer back to Alice Springs to determine whether it could be rescued, only to find a perfectly formed mouse nest made of shredded paper nestled inside. By contrast, the network equipment (satellite dish, modem, network switch, local area wireless transceiver equipment, roof-mounted antenna and cabling) did not experience any hardware failures; any network failures related to issues with the injector or cabling within households.

Community members asked for technical support for a variety of matters, such as equipment failures, corrupted applications, and password issues. In one email, Andrew was told that one of the printers ‘needs pink, red, blue, green, yellow, orange cartridges’. Only a few instances involved problems that prevented the resident from using the computer entirely. Sometimes another computer was available that they could use until repairs took place. Printer problems were relatively frequent, particularly later in the project, although some of these, such as paper feed pick-up issues, usually required working surfaces to be cleaned rather than needing tools, spare parts or software skills to be resolved. Residents often did not attempt to fix these minor mechanical issues themselves, possibly because they knew they could wait for the next support visit to resolve the problem.

We concluded that the difficulties with organizing installation were a far greater barrier to home internet than the maintenance and replacement of equipment. Although replacements and repairs were needed, the frequency of these events did not necessarily warrant a supervised or publicly-maintained model of ICT access (such as a shared computer room). We now turn to what happened once the computers arrived, and how particular events impacted on computer use and ownership, including travel, moving house and death. We also discuss who used the computers the most, and what they were used for.

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68. See A. Crouch, ‘The Community Phone Project: An Overview’, DKCRC Working Paper 46, Alice Springs: Desert Knowledge CRC, 2009. [↑](#footnote-ref-69)
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70. See P. Batty, *Governing Cultural Difference: The Incorporation of the Aboriginal Subject into the Mechanisms of Government with Reference to the Development of Aboriginal Radio and Television in Central Australia,* Adelaide: University of South Australia, 2003.

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71. Hinkson, ‘What's in a Dedication? On Being a Warlpiri DJ’, p. 110. [↑](#footnote-ref-72)
72. Rennie et al., ‘At Home on the Outstation: Barriers to Home Internet in Remote Indigenous Communities’. [↑](#footnote-ref-73)
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74. Funding from the Aboriginals Benefit Account. [↑](#footnote-ref-75)
75. Essentially, all the computers on each service in the communities shared 17GB per month at full speed (up to 4MBps), split between morning (12GB) and afternoon/evening (5GB), after which the speed dropped to a much slower speed, comparable to dial-up (64Kbps). [↑](#footnote-ref-76)
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