

Chapter 14 Transport and Communication

Key Points

- Efficient transport and communication services are important to the Territory economy, given distance from national distribution centres and a small, dispersed population.
- In the 10 years to 2002-03, growth in the transport and communication industries was considerably stronger than broader economic growth, reflecting increasing capacity as infrastructure is developed.
- The completion of the Alice Springs to Darwin leg of the rail link to Adelaide together with Darwin’s East Arm Port expansion have established Darwin as a multimodal transport hub providing a ‘landbridge’ linking southern Australian and Asian markets.
- Lower transport costs will see rail become dominant on the north-south freight route. Nonetheless, road and air transport will continue to serve niche freight markets.
- Access to sophisticated information and communications technology and increased coverage has facilitated improved and innovative service provision mechanisms in remote regions.
- In the short to medium term, the major influence on the outlook for the transport sector is value-adding and trade opportunities associated with the new rail link and port.
- Further improvements in communications technology could increase the scope and quality of public and private service provision, particularly in remote areas.

Transport and Communication

The Territory is one-sixth of Australia’s land mass but has only about 1.0 per cent of Australia’s population. Darwin, the Northern Territory’s major population centre, is the most remote capital city in Australia and is closer to many South East Asian cities than Sydney, Melbourne or Brisbane. These characteristics, along with the Territory’s commodity-intensive economy, have necessitated the development of sophisticated and efficient transport and communication links with both Australia and the rest of the world.

Transport Important to the Territory

Although small in terms of output, the transport industry has strong direct and indirect links to all sectors of the Territory economy and is important in servicing the Territory’s widely dispersed population. Efficient and cost-effective transport links are recognised as one of the main drivers of economic growth.

Table 14.1: Transport and Communications Production as Percentage of GSP (2002-03)

	Transport and Storage	Communication Services	Total
New South Wales	4.1	2.6	6.7
Victoria	3.8	3.0	6.8
Queensland	4.9	2.5	7.4
South Australia	4.1	2.2	6.3
Western Australia	4.3	2.1	6.4
Tasmania	4.6	2.3	6.9
Northern Territory	4.3	2.7	7.0
Australian Capital Territory	2.1	2.2	4.3
Australia	4.1	2.6	6.7

Source: NT Treasury, ABS Cat.No. 5220.0

Over the past decade, the Territory's transport and storage sector is estimated to have grown at a faster rate than the overall economy and is a marginally larger part of the economy than nationally (see Table 14.1). In terms of employment, Census results indicate that the transport and storage workforce increased from 4 200 in 1991 to 5 200 in 2001, a compound annual growth rate of 2.2 per cent and similar to total employment growth.

Increased Importance of the ICT Industry

The Information and Communications Technology (ICT) industry is that part of the economy which produces information and communications technology goods and services. It includes businesses involved in telecommunications services, computer services and selected manufacturing and wholesale trade industries. The Territory's ICT industry has increased in relative importance in the past decade. In 2002-03, the industry accounted for 2.7 per cent of Gross State Product compared to 2.2 per cent in 1991-92, with average growth estimated at around 11 per cent per annum over the period.

Communications-related employment growth was below growth in the broader employment market, reflecting the centralisation of many core communications functions and solid productivity growth.

Rail Transport

Construction of the Alice Springs to Darwin leg of the rail link to Adelaide was completed in 2003, with the first train arriving at the Darwin freight terminal adjacent to the East Arm Port on 17 January 2004. The first Ghan passenger train arrived on 3 February 2004. The benefits of the railway will be most significant in Darwin, with its concentration of economic activity and population. Nonetheless, the anticipated development of rail freight facilities in Katherine and Tennant Creek is expected to attract freight from the Ord River and Gulf regions, while Tennant Creek could also benefit as a road-rail interchange for east-west freight traffic.

Benefits of the Rail Link

Reduced Freight Costs

Industries with traditionally high input costs and low-value outputs will benefit from reduced freight costs, including mining, agriculture, construction, manufacturing and wholesale and retail trade. Lower transport costs should also have a positive impact on the cost of consumer goods, and should improve the relative competitiveness of Territory businesses distributing products intrastate, interstate and internationally. This has the potential to generate further economic opportunities and employment in the Territory.

Business Park

To assist in developing rail-related opportunities, the Territory Government is developing a Business Park adjacent to the rail terminal. Stage one includes the development of 21 serviced blocks, eight of which have direct rail frontage. Foundation businesses for the Business Park are mainly in the transport and distribution industries.

Operational Phase

The operational phase of the rail link has already led to a shift between transportation modes on the north south corridor between Alice Springs and Darwin, with the transshipment from rail to road at Alice Springs now reduced to negligible levels. This has resulted in a significant reduction in the number of road trains operating north of Alice Springs. Further, it appears that supply chains will become increasingly north-south oriented as firms take advantage of transport cost savings and aim to minimise double handling of goods.

Nonetheless, direct road freight services will continue to service the Territory and road transport will remain the principal means of distributing freight from the rail link to other Territory towns. It is likely that direct interstate road freight services will continue to meet the transport needs of niche markets where road has an advantage over rail, notably for express delivery and direct regional services.

Trial Freight Shipments

The rail link has also been used for trial freight shipments, including bananas from Cooktown in Queensland being transported to Tennant Creek for loading onto rail for the Perth market. Supply chain analysis trials are also being conducted for the Katherine region, connecting growers in the region with markets in Melbourne and Adelaide. Trial export shipments using the rail link through the East Arm Port for destinations in South East Asia are also underway.

The relocation of the main fuel storage depot to East Arm Port will provide new fuel tank terminals with direct rail access. Both road and rail will then be able to compete for the carriage of bulk fuels to other parts of the Territory. The rail will also increase the efficiency and capacity to move defence equipment for military exercises.

Ghan Passenger Train

The weekly Ghan passenger service between Adelaide and Darwin is expected to carry around 30 000 passengers per year. The 47-hour, 2 969 kilometre journey features off-train touring options at Alice Springs and Katherine.

Sea Transport

Lowest Cost Form of Transport

Sea transport is the lowest cost form of transport, but in most cases is also the slowest. Most of the Territory's mineral exports are transported by sea through the port facilities at Bing Bong near Borroloola, Alyangula on Groote Eylandt and Nhulunbuy in east Arnhem Land. Darwin is the home port to some 150 fishing vessels and is a growing support base for offshore oil and gas exploration and production.

Darwin Port is also an established port of call for cruise ships, pleasure craft and yachts, which contribute to the Territory's tourism industry.

Increase in International Imports

Major tonnage exports and imports through the Port include fuels, live cattle, metal products and cement clinker (see Table 14.2). Trade tonnages through the Port increased by 18 per cent in 2002-03, after declining by 0.9 per cent in 2001-02. As Chart 14.1 shows, there was a solid increase in international imports associated with the import of cement clinker from international rather than domestic manufacturers.

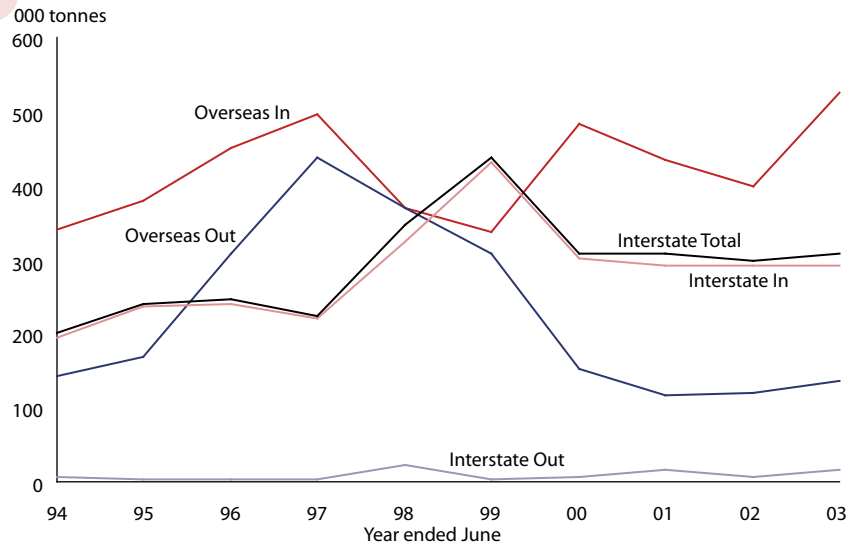
Fuel products accounted for more than 60 per cent of imports through the Port in 2002-03. The high level of trade with Singapore is due to the large volume of fuel imports. Although from a low base, live cattle export tonnages through the Port increased by 23 per cent in 2002-03.

Table 14.2: East Arm Port, Trade by Country, as a Percentage of Total Tonnes 1998-99 to 2002-03

	% of total tonnes
Singapore	62.4
Indonesia	11.3
Japan	9.4
Philippines	5.0
China	3.5
South Korea	1.7
Belgium	1.5
Egypt	1.5
Other	3.7

Source: NT Treasury, Darwin Port Corporation

Chart 14.1: Trade through East Arm Port, by Direction



Source: NT Treasury, Darwin Port Corporation

East Arm Port

Stage two of East Arm Port, the final major piece of infrastructure in Darwin's development as a transportation hub, is scheduled for completion in mid 2004. Stage two development includes a wharf extension and a bulk liquids berth, intermodal facilities for the AustralAsia Railway link, a container wharf and installation of oil transfer pipelines and equipment. The new rail link and port facilities will provide the infrastructure expected to establish Darwin as a multimodal regional transport hub, consolidating trade links to other parts of Australia and the world. Importers and exporters currently using southern ports, now have an alternative transport route. Swire Shipping commenced a fortnightly Darwin to Singapore shuttle service with the capacity to carry 415 containers. The company aims to capitalise on new regional shipping opportunities and an expected increase in cargo from the new rail link.

Road Transport

The Northern Territory is served by three elements of the National Highway Network which provide links to Queensland (Barkly Highway), South Australia (Stuart Highway) and Western Australia (Victoria Highway). The National Highway network forms the backbone of the road network system across the Territory, and provides the only sealed road link between the Territory and the rest of Australia. Historically, the development of road infrastructure occurred in response to defence and primary industry needs. More recently, tourism and freight transportation have become major drivers of new developments, with an increased emphasis on the need to establish all-year road access to avoid disruption during the monsoon season.

National Highways

Continued Reliance on Road Infrastructure

The Territory has relied on road transport for much of its domestic freight for many years due to the absence of a rail link north of Alice Springs and infrequent liner shipping services into Darwin. Upgrades to the National Highway Network have also facilitated expanded road freight activity. Although the completion of the north-south rail link is decreasing road-freight movements, the Territory will continue to rely on road infrastructure and transport for the development of remote and regional communities, and for access to major centres.

In 2003-04, expenditure on national highways is estimated at \$13.6 million for construction and upgrading, and \$15.5 million for repairs and maintenance. Recent improvements include the upgrade of strength-deficient bridges on the Stuart Highway as well as continual pavement rehabilitation on the three major highways, making the roads stronger and smoother.

Other Roads

In 2003, the Territory road network consisted of more than 35 000 kilometres of road. Of this, approximately 21 985 kilometres were Territory Government-managed roads, with 12 per cent classified as National Highways, 19 per cent as arterial roads, 45 per cent as secondary roads to distribute traffic within regions and 24 per cent as local roads. In addition to the Territory Government-managed road network, there are approximately 13 200 kilometres of roads administered by local government bodies, primarily for distributing traffic within local areas.

Road freight transport operations in the Territory include transport of consumer goods from southern suppliers, ore and supplies for mining activities, cattle between pastoral properties and ports, and the intra-Territory movement of fuel and seasonal produce to southern markets.

Road Transport Reforms

Road transport reform has led to freight efficiency gains, particularly for fuels, minerals and other bulk commodities. These reforms include measures such as modified suspension systems, increased mass limits and new high productivity vehicle combinations. Recent reforms implemented in the Territory include adoption of the national motor vehicle standards for in-service vehicles. Significant reforms under development include national compliance and enforcement model legislation, performance based standards for heavy vehicles and heavy vehicle driver fatigue management.

Air Transport

The interstate domestic airline market in the Territory is predominantly served by Qantas and, to a lesser extent, Virgin Blue, Airnorth and Skywest. Between them, these airlines provide approximately 170 scheduled inbound flights to the Territory each week, offering more than 20 000 seats. These services provide daily connections from the Northern Territory to all Australian capital cities and major regional centres.

Interstate

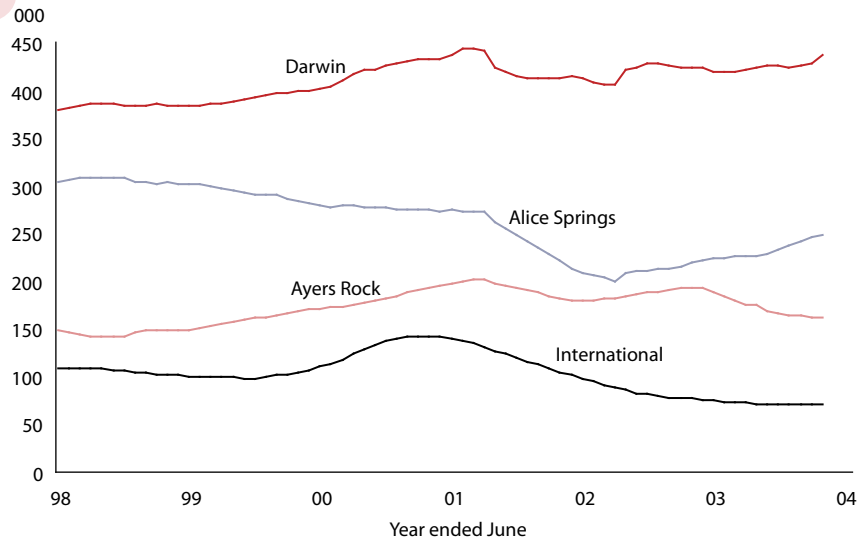
Interstate seat capacity is estimated to have increased by around 5 per cent in 2003-04, reflecting increased demand and competition, and the entry of a small new carrier to the market. Nonetheless, interstate capacity remains almost 5.0 per cent below peak levels of 2000-01. Domestic seat capacity to and from the Territory fluctuates with seasonal demand. During the wet season (October through to April), tourist numbers decrease, notably to the Top End, and airline capacity adjusts to weaker demand.

Regional

Regional airlines provide scheduled services within the Territory, linking remote communities with major centres of Alice Springs, Darwin, Katherine, Nhulunbuy and Tennant Creek. There is also an extensive route network within the Territory operated by smaller carriers, which service regional towns and the fly-in fly-out requirements of the mining industry. A general aviation capability survey in June 2003 identified more than 140 charter aircraft operating in the Northern Territory.

The provision of air services to remote communities in the Territory is particularly important where roads are non-existent, or are regularly impassable during the wet season.

Chart 14.2: Air Services - Seating Capacity (moving annual total)



Source: NT Treasury, Department of Infrastructure, Planning and Environment

Transport and Communication

International

The international airline market is served by Airnorth, Garuda, Qantas and Royal Brunei airlines. These carriers currently operate 20 return flights weekly, providing an estimated 2 980 seats in and out of the Territory. Via these services, passengers originating in the Territory can connect with flights to destinations worldwide. Regular international air charter services to Timika in Irian Jaya/West Papua also operate from the Territory.

Charter

An emerging feature of the international carrier market is the currently small but significant charter flight segment. SilkAir, a subsidiary of Singapore Airlines, provided charter services for international passengers to Darwin in early 2004 to connect with the cruise ship *Europa*. In 2003 charter flights also transferred some 800 Japanese visitors to Central Australia.

Over the past four years, discretionary international air travel has been affected by terrorist attacks, geopolitical uncertainties, the war in Iraq and the Severe Acute Respiratory Syndrome (SARS) outbreak. The impact on international seat capacity into the Territory is clearly illustrated in Chart 14.2. These factors, combined with the collapse of Ansett Airlines in 2001 and the subsequent fallout in interstate airline capacity, severely constrained seat supply. Domestic capacity is largely restored, although international services are still well below the mid 2001 peak.

Transport Outlook

In the short to medium term, the major influence on the outlook for the transport sector is the impact of the new Adelaide to Darwin rail link, in conjunction with improved port facilities and infrastructure in Darwin.

Increased Freight Services

As opportunities associated with the 'landbridge' concept develop (that is, as freight on the Adelaide to Darwin rail link between southern Australia and Asian markets increases), and Darwin is increasingly utilised as a regional transport hub, increased sea, rail and road freight transport services can be expected. Furthermore, there is likely to be some shift in freight from adjacent economic regions in the Kimberley and north-west Queensland to rail via the depots at Katherine and Tennant Creek, providing additional business opportunities in these centres.

Increased Shipping Services

Increased transport and freight forwarding opportunities are also expected to benefit Territory exporters and importers, in particular those dealing in consignments that are regular, but not in quantities that are economically viable for vessels to call in on inducement. Over time, increased shipping services will also generate income for the Darwin Port Corporation, as well as opportunities for local and other businesses.

Even with the north-south rail link, road transport will remain a significant component of the Territory's freight transport network. Road transport will continue to be used for short-haul services and will provide the major means for serving the Territory's widely dispersed population. In addition, there will still be a demand for direct long-haul express road services to and from the rest of Australia.

Increased Airline Capacity

An anticipated rebound in international visitor numbers to the Territory is expected to see international airline capacity increase through 2004-05, and a new market entrant, the low-cost international carrier Australian Airlines commenced a Cairns-Darwin-Singapore service, providing an extra 540 seats into Darwin each week, increasing the number of flights between Singapore and Darwin to five per week in mid 2004. Merpati Airlines will resume flying the Kupang-Darwin route twice weekly in co-operation with Airnorth in mid 2004. Merpati Airlines stopped flying the route in 2000. Further negotiations are underway between local operators together with airline and tourism interests in Malaysia and China, while Cathay Pacific Airlines is undertaking a feasibility study for a Darwin-Hong Kong service.

Communications

Benefits Due to Vast Distances

Large distances between dispersed centres of population mean that the Territory has benefited from the continued advancement of information and communications technology (ICT). Nonetheless, despite significant investment, the gap between the Territory and other jurisdictions in their access to and capability to deliver ICT-based services continues to widen, as does the gap between remote and urban ICT capability.

Despite some recent setbacks, the national communications industry growth has typically outpaced economic growth in the past decade, boosted by strong consumer demand, technological developments and industry deregulation. Communications production increased at an average rate of 12.2 per cent per annum, while national output increased at an average 4.1 per cent per annum over the same period.

Growth Sector

Communications remains one of the most dynamic growth sectors of the world economy. Recent technological developments have reduced the isolation faced by many Territorians, particularly those living in remote localities, and have enabled government to deliver a wider range of mainstream services to remote areas. However, ICT does not eliminate the need for face-to-face contact between service providers and their clients.

Unit Cost Yet to Fall

The low volume of network traffic in the Territory, in combination with limited competition, has meant that there is not yet a significant reduction in the unit cost of electronic services delivered. In some cases, unit costs of ICT delivered services have risen. Nonetheless, remote areas have benefited from government initiatives in the telecommunications sector. The Untimed Local Calls in Extended Zones initiative, provided under the Commonwealth-legislated Universal Service Obligation, means that people in remote areas who call neighbouring areas and nearby towns are able to make untimed calls charged at the local call rate, making telecommunications more affordable in remote areas.

In Remote Areas, Infrastructure Remains Inadequate

For many remote areas terrestrial telecommunications infrastructure remains inadequate, and consequently, satellite services play a major role. A number of subsidies have reduced the cost of connecting to satellite services which increases access to phone and internet services.

Mobile Coverage

Telecommunications service providers continue to increase mobile coverage and infrastructure in the Territory. In the past year, Optus has installed additional repeaters at the Alice Springs Correctional Services Facility, the Nhulunbuy wharf and at Parliament House in Darwin. In addition, mobile base stations were brought into service in the Katherine CBD and Berrimah North.

The Commonwealth Government committed to extending mobile coverage in remote regions of the Territory by funding 23 new or improved mobile base stations to provide Code Division Multiple Access (CDMA) mobile services. CDMA is a spread-spectrum approach for the digital transmission of data/voice over radio frequencies, and with this improved technology, better services are now operating in a range of Territory locations including Borroloola, Timber Creek, Nhulunbuy, Pine Creek and Jabiru. The final eight stations will be operational by the end of 2004. Furthermore, recent infrastructure investment has increased mobile coverage and quality of service in Nhulunbuy, Katherine, Alice Springs, Berrimah and Marrara.

Greater Access

An estimated \$20 million has been allocated to telecommunications projects in the Territory from Commonwealth programs, notably from the Networking the Nation program, which has offered \$10.7 million in funding to provide telecommunications infrastructure to about 25 remote Territory communities.

Mobiles for the Territory, a Territory Government-coordinated program jointly funded by the Commonwealth's Networking the Nation program and Telstra, delivered additional mobile coverage along the Territory's major highways and to ten regional centres. Yulara was the last centre to benefit from the program, with improved service operational from mid 2003.

In 2003, the implementation of the 'NT and NSW Interactive eLearning Initiative' was completed. This project involved the deployment of two-way satellite based communications infrastructure to more than 150 new sites in the Territory.

Telstra owns the vast majority of terrestrial infrastructure in the Territory, mainly because of the installation of this infrastructure and the development of services to date were primarily driven by its Universal Service Obligation. Telstra is upgrading optic fibre technology from Darwin to Western Australia, South Australia and Queensland, making the network significantly faster and providing phone, television and internet capacity equivalent to Sydney and Melbourne. However, while there is substantial fibre optic cable in the Territory, it is generally confined to communities on the Stuart and Barkly highways.

Service Delivery

ICT possesses a capability to improve service delivery of government services in remote and regional areas. Areas where this capability can be utilised include delivery of health services (telehealth, electronic data transfer and hospital management systems) and education through the provision of electronic-based training. Both Commonwealth and Territory governments play a role in providing greater ICT access in regional and remote areas. Their policies and the provision of infrastructure, particularly broadband, are influential in the development of e-education and e-health applications. Limitations on bandwidth, particularly in regional areas, limit the quantity and type of services that can be delivered.

	<p>The Electronic Outback Project (EOP) is a Territory Government coordinated program providing broadband communications into 14 remote communities. The EOP shows that telecommunications improves access to government services such as health, education and training, and also creates new business and employment opportunities. Given the very small size and fragmented nature of the communications market in the Territory, the EOP is now building on recent experience and is moving towards a more economically sustainable model.</p>
Increased Broadband Uptake	<p>At September 2003, the Territory had approximately 18 internet service providers supplying around 35 000 subscribers. ABS data suggest that there is a continuing move toward non-dial-up broadband technologies, with subscriber numbers growing strongly. Between June 2002 and June 2003, there was an increase in the proportion of businesses accessing the internet via Digital Subscriber Line (DSL) broadband and a decrease in dial-up via modem. Commonwealth Government initiatives such as the Higher Broadband Incentive Scheme and the Building Additional Rural Networks program aim to increase the availability of broadband technology by extending the capacity of existing infrastructure in rural and remote community areas.</p> <p>Asymmetric Digital Subscriber Line (ADSL) broadband services are now more widely available in the Territory. Availability is currently limited to within 3.5 cable kilometres of nine telephone exchanges in the Territory. The cost to consumers for this service has fallen significantly, with ADSL modems, service connections and other charges falling.</p>
ICT Industry	<p>In 2002-03, the Department of Corporate and Information Services and the Australian Information Industry Association estimated industry turnover at \$400 million and found that the industry is dominated by small to medium-sized firms focusing on software and services. Because of the small size of the Territory information and communications technology (ICT) market, there is a significant dependency on public sector-based work with a high proportion of the firms in the industry providing ICT goods and services to government. However, growth is starting from a low base and a potential exists for the industry to grow and diversify into different sectors of the Territory economy.</p>
Training and Education	<p>An important factor for supporting growth in the industry is the ability to innovate and maximise the utilisation of new and emerging technologies. Skilled professional personnel, particularly those with science, engineering and technology qualifications, are key to improving the industry's competitive capability. Many participants in the ICT industry import training and education services due to a lack of accredited education and training resources in the Territory. A survey conducted by the Department of Corporate and Information Services and the Australian Information Industry Association indicated that 60 per cent of the industry's training requirements in the Territory were imported.</p>
Television	<p>In Darwin, television transmission continues to improve, as the ABC, SBS, Channel Nine and Channel Seven Darwin all commenced digital broadcasts in 2003. Simultaneous broadcasting of the analogue and digital signals will continue until a full transition to digital television is made in 2008. Info TV broadcasts tourist-oriented information in Darwin via the free-to-air and cable networks.</p> <p>Other major centres of the Territory receive a combination of Imparja, Seven Central, Queensland Satellite Television (Channel Ten), the ABC and SBS. Austar pay television is available via direct cable in Darwin and via wireless cable in Alice Springs, with some satellite coverage extended over other areas in the Territory.</p>

Under the Commonwealth Government's Television Blackspot program, \$1.1 million was provided for replacement of obsolete equipment at retransmission sites throughout the Territory. Furthermore, the Aboriginal and Torres Strait Islander Commission identified 48 sites in the Territory eligible for funding through the Broadcasting for Remote Aboriginal Communities scheme.

Radio

Darwin, Alice Springs and smaller centres in the Territory are serviced by a number of radio stations, including the ABC, commercial and community stations.

Communications Outlook

Telecommunications will continue to be a dynamic industry, and new technologies will continue to change the way consumer and government services are delivered, especially the delivery of education and health services in remote communities. Increased coverage, quality and capacity of communications infrastructure in the Territory will continue to allow access to the latest technologies. Significant benefits to all Territory residents are expected, particularly to remote residents as the cost of providing the 'last mile' connection to networks continues to fall.

A strong relationship exists between the number of employees within a business and the likelihood that the business is using Information and Communications Technology. As Territory employment increases, so does the proportion of Territory businesses making use of ICT services. As such, anticipated solid economic and employment growth in the short to medium term is expected to increase demand for ICT services in the Territory.