

Chapter 14 Transport and Communication

Key Points

- Darwin's geographic location means it is strategically placed between Asian markets and Australia's south eastern states.
- With the completion of the Alice Springs to Darwin leg of the rail link to Adelaide and the new East Arm Port, Darwin has the infrastructure to be the regional transport and logistics hub.
- Rail is now the dominant transport mode on the north-south freight route. Nonetheless, road and air transport will continue to service 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.
- Improvements in communications technology and coverage are expected to increase the scope and quality of public and private service provision, particularly in remote areas.

Transport a Significant Industry

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 Australia and the rest of the world. In terms of geography Darwin is also well placed to develop as a regional transport and logistics hub, linking southern Australia and northern markets with the land bridge and modern port infrastructure.

The transport and storage and communication sectors represented 7.5 per cent of the Northern Territory's GSP in 2003-04 compared to 7.0 per cent nationally (see Table 14.1). Transport and communications have strong direct and indirect links to all sectors of the Territory economy and are 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 (2003-04)

	Transport and storage	Communication	Total
New South Wales	4.3	2.7	7.0
Victoria	4.0	2.9	7.0
Queensland	5.3	2.4	7.7
South Australia	4.2	2.2	6.4
Western Australia	4.6	2.1	6.7
Tasmania	4.7	2.3	7.0
Northern Territory	4.7	2.8	7.5
Australian Capital Territory	2.6	2.1	4.7
Australia	4.4	2.6	7.0

Source: ABS Cat. No. 5220.0

Strong Growth 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 4200 in 1991 to 5200 in 2001, a compound annual growth rate of 2.2 per cent and similar to total employment growth.

Information and communications technology (ICT) contributes to the economy through the production of 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, and in 2003-04 the industry accounted for 2.8 per cent of Gross State Product compared to 2.2 per cent in 1991-92. 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

The Darwin to Adelaide railway was completed in late 2003, with the first freight train arriving in Darwin on 17 January 2004, and the first Ghan passenger train on 3 February 2004.

In its first year of operation the railway transported nearly 600 000 tonnes of primarily north bound freight exceeding original forecasts of 380 000 tonnes in the first 12 months.

Rail traffic at present is primarily domestic freight for local consumption, and includes: produce, beverages, groceries, cars, machinery, motor parts, horticultural goods, fertiliser, cement, steel, building products and fuels. The railway has also carried over 16 000 tonnes of Australian commodities for export out of Darwin to South East Asia.

Travelling south from Darwin the service runs at about 30 per cent capacity, and mainly carries horticultural and agricultural products and personal effects (furniture) for people moving interstate. The railway has also carried 2500 tonnes of imports from Hong Kong, Malaysia, Indonesia, Singapore, China and Thailand.

Benefits of the Rail Link While the benefits of the railway will be most significant in Darwin where the population and economic activity is most concentrated, it is anticipated that Katherine and Tennant Creek will see flow-on effects as industry development and marketing opportunities are identified and developed. Katherine is likely to expand if cost effective rail services further develop its status as a regional transport centre linking agricultural and pastoral output from the Ord River and Gulf Region to northern and southern markets.

Tennant Creek will benefit as a road-rail interchange for east-west freight traffic. In addition, marginal mining projects may now become commercial due to rail providing cost effective transportation of bulk materials. For example Bootu Creek mine, just north of Tennant Creek, plans to transport manganese ore to Darwin for export during 2005. Further, a three month trial transporting uranium yellowcake from Olympic Dam to Darwin for export is scheduled for 2005. The rail link has also been used for several trial freight shipments, including bananas from Cooktown in Queensland for the Perth market.

The Impact of Rail on Freight Transport

Rail Freight Increasing

The Department of Infrastructure, Planning and Environment (DIPE) is monitoring the impact of the railway on Territory transport and reports that the volume of goods transported by rail is increasing especially in the category of dry goods. Further, it is estimated that rail had captured approximately 70 per cent of the Adelaide to Darwin contestable freight market and just over 50 per cent of Darwin to Adelaide freight. Road has retained or recaptured almost all refrigerated freight and transported much of the mango crop in 2004. Time-sensitive cargoes also continue to be largely transported by road, despite road transit times not being significantly faster than rail.

During the first six months of the railway's operation, the number of triple-road trains travelling north from Alice Springs on the Stuart Highway fell by about half. The commencement of rail services has put competitive pressure on north-south road transport services with Adelaide-Darwin road freight rates largely unchanged over 2004 while Brisbane-Darwin rates increased significantly. Some road transport companies have withdrawn from the market while other companies have had to improve service to remain competitive. The greater flexibility of road transport remains a significant component of the freight transport network and freight-forwarder Northline recently announced that it is returning much of its business to road transport.

Railway's Comparative Advantage

For the international market the railway's comparative advantage lies in the speed at which it can transport freight compared to shipping, and in the movement of bulk commodities to Darwin for exporting to Asian markets. Trial shipments of freight from Shanghai through Darwin to Adelaide suggests that with low volumes the land bridge is not currently competitive with shipping on the Shanghai-Adelaide route. These trials are expected to continue over 2005 and, ultimately, securing higher freight volumes will be a crucial factor determining the competitiveness of rail.

The railway investment has been complemented by the development of commercial infrastructure including stage 1 of the 50 hectare business park adjacent to the domestic rail terminal and the development of East Arm Port.

Rail Transport and Tourism

The Ghan

While the railway line was principally built with freight transport in mind, the Ghan passenger service to Darwin has provided a significant boost to the Territory's tourism industry. Since commencing the passenger service in February 2004, the Ghan has carried in excess of 70 000 passengers, and is estimated to have injected around \$28 million into the Territory economy. With strong bookings for 2005, Great Southern Rail, the Ghan's operator, is planning to double its Adelaide to Darwin service to twice-weekly for May through to July.

Sea Transport

Sea transport is generally considered to be 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 the growing support base for offshore oil and gas exploration and production in the Timor Sea. Darwin is also an established port of call for cruise ships, pleasure craft and yachts, which contribute to the Territory's tourism industry.

Table 14.2: Port of Darwin, Exports and Imports by Country (5 year average 2000-04)

Exports by Destination		Imports by Origin	
	% of total tonnes		% of total tonnes
Indonesia	71.6	Singapore	81.7
Philippines	10.7	Japan	11.5
Egypt	4.3	Thailand	2.3
China	3.5	South Korea	1.3
Malaysia	3.1	Saudi Arabia	1.2
Singapore	2.5	Canada	1.1
Other	4.3	Other	0.9
Total	100	Total	100

Source: Darwin Port Corporation

Major exports through the Port include metal products and livestock while imports are dominated by fuels and cement clinker.

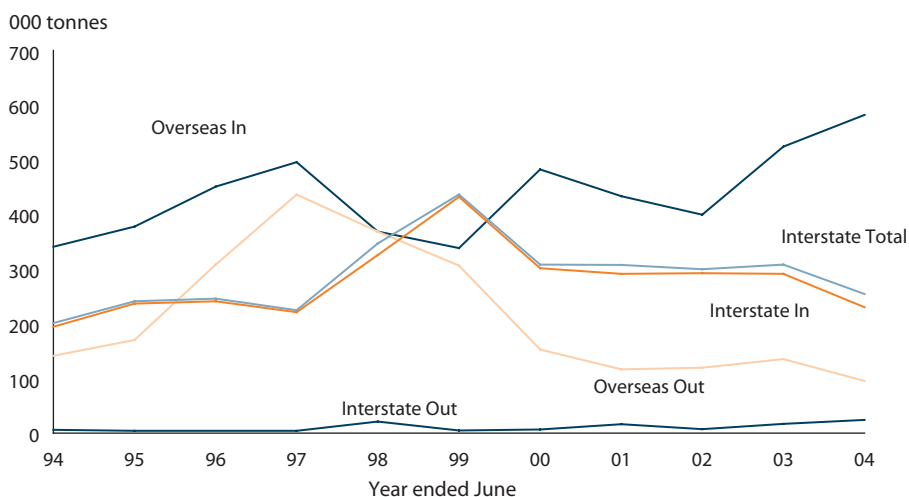
Increased Tonnages

Total tonnes of cargo through the Port of Darwin increased by 3.3 per cent in 2003-04, despite a fall in the number of trading vessels and a sharp fall in the number of visits by livestock vessels. Higher tonnages were associated with imports for the construction of the Wickham Point liquefied natural gas plant and pipeline from the Timor Sea. There were increased calls associated with both the petroleum and gas industries and liquid bulk/petroleum tankers.

The predominant import through Darwin in 2003-04 was petroleum products which accounted for 68 per cent of import tonnages. Imports of cement and cement clinker fell in 2003-04 with the completion of the railway line while the increase in the metal products imports reflects demand for pre-fabricated modules for the LNG construction project.

The stronger Australian dollar and good local beef prices over 2003-04 saw a fall in livestock exports through Darwin from 218 345 head in 2002-03, to 132 469 in 2003-04. Livestock typically accounts for 25 per cent of the trade through the Darwin Port.

Chart 14.1: Trade through East Arm Port, by Direction



Source: Darwin Port Corporation

Recently completed port facilities at East Arm, include a wharf extension, a bulk liquids berth, intermodal facilities, a container wharf and installation of oil transfer pipelines and equipment. Modern infrastructure will support the cost effectiveness of the land bridge concept, and assist in Darwin developing as a multimodal regional transport hub consolidating trade links to other parts of Australia and the world. Importers and exporters that currently use southern ports, now have an alternative transport route, supported by the Darwin Business Park facilities adjacent to the rail terminal.

Swire Shipping commenced a fortnightly Darwin to Singapore shuttle service in 2003 aiming to capitalise on emerging regional shipping opportunities and an expected increase in cargo associated with 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, and there has been increased emphasis on maintaining all-year road access to avoid disruption during the monsoon season.

Historical Reliance on Road Freight

Until recently, the Territory had relied on road to transport most of its domestic freight 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 also facilitated expanded road freight activity. Although the completion of the north-south rail link has resulted in reduced 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 2004 the Territory road network consisted of more than 35 000 kilometres of road. Of this, it is estimated that around 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.

AusLink

All three levels of government are responsible for developing and maintaining road networks in the Northern Territory. AusLink is an Australian Government initiative designed to improve planning, decision-making and funding for national land transport infrastructure. Under AusLink, the National Highway System and Roads of National Importance, replaced with a broader and more strategic network of transport corridors including Australia's key rail links. The AusLink National Network will form the basis of the Australian Government's investment in land transport. In addition, this program will focus on local and regional transport priorities located off the National Network, and will be complemented by the National Black Spot programme. The AusLink National Network in the Territory includes the Stuart, Victoria and Barkly Highways, the Adelaide to Darwin railway and the Tiger Brennan Drive/Berrimah Road-Darwin East Arm Port Access.

In 2004-05, expenditure on national highways under the AusLink program is estimated at \$13.7 million and includes major works on the Victoria and Stuart Highways, and bridge works on the Stuart Highway. Expenditure for Territory roads for 2004-05 is estimated at \$22.9 million with a focus on improving tourist roads including the commencement of sealing of the Mereenie and Litchfield Loop Roads. Additional programs for 2004-05 included the upgrading of strategic beef roads, and a bridge strengthening program on the Carpentaria Highway.

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 160 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 increased by around 20 per cent in the year to February 2005. Domestic seat capacity to and from the Territory fluctuates with seasonal demand, though over the past 18 months a number of seasonal and non-seasonal factors have influenced the sharp increase in seating capacity. Firstly, a milder wet season over 2004-05 has allowed for a longer than usual tourist season and secondly, the increased demand from the fly-in fly-out workers at major projects in Darwin and Gove.

Regional Airnorth ceased flights operating between Darwin, Katherine, Tennant Creek and Alice Springs in early 2005. The Tennant Creek to Alice Springs route is now serviced by Aboriginal Air Services. In addition, 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 2004 identified approximately 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.

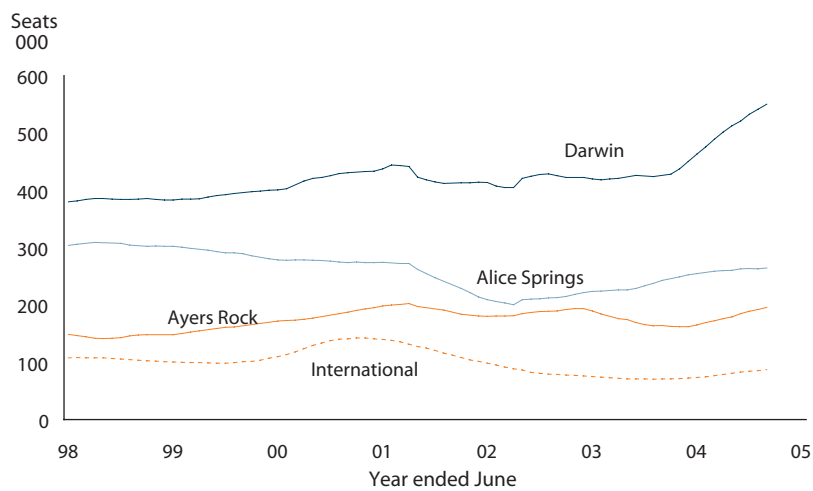
International The international airline market in the Territory is served by Airnorth, Garuda, Qantas and Royal Brunei airlines. These carriers currently operate 20 return flights weekly, providing an estimated 1800 seats in and out of the Territory. Via these services, passengers originating in the 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.

Currently non-perishable international air freight out of Darwin is accommodated on passenger air services. Low volumes of perishable produce sent from the Territory to international destinations, has meant that this produce is typically transported south by road before being airfreighted out of Brisbane or Sydney.

Charter An emerging feature of the international carrier market is the currently small but significant charter flight segment. Two charter flights carrying a total of around 740 passengers into Alice Springs are planned by Japan Airlines in 2005.

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 of these events on international seat capacity into the Territory over the period 2001-04 is illustrated in Chart 14.2. International air services seating capacity is still well below the mid 2001 peak.

Chart 14.2: Territory Air Services
Seating Capacity



Source: Department of Infrastructure, Planning and Environment

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

In its first year of operation the railway has become the main transporter of domestic freight on the north-south route and there have been trials linking the 'landbridge' concept with international traders. While those trials are in their early stages, the cost-effectiveness of the railway in competing with alternative transport modes will determine its success. In the longer term it is expected that Darwin will become increasingly utilised as a regional transport hub, with modern infrastructure and efficient sea, rail and road freight transport services.

Over time, there is also expected 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, which provide additional business opportunities in these centres.

The rail link has also created development opportunities in regional centres. The competitive cost of transporting large volumes of output by rail has contributed to the previously non-commercial manganese resource at Bootu Creek being a viable project. Trials will continue to play an important role in demonstrating rail as a competitive transport mode both regionally and nationally and should provide ongoing entrepreneurial opportunities.

Increased Shipping Services

Increased transport and freight forwarding opportunities are also expected to benefit Territory exporters and importers, by providing sufficient freight for more regular shipping services to the Territory. The additional services will assist those currently having to rely on shipping services provided on an 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. There will still be a demand for direct long-haul express road services to and from the rest of Australia.

Increased Airline Capacity A rebound in international visitor numbers to the Territory on the back of continuing economic growth, a more stable global environment and increased advertising is expected to see international airline capacity increase through 2005-06.

Communications

Large distances between dispersed centres of population mean that the Territory has benefited from the continued advancement of information and communications technology (ICT). In addition, being a younger population, Northern Territorians (particularly in urban areas) have embraced new technology, characterised by the Northern Territory having a high take up rate of mobile phones and internet services.

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. Investment into telecommunications infrastructure in the Territory is estimated at around \$70 million for 2004-05.

Communications remains one of the most dynamic growth sectors of the world economy. Technological developments have reduced the isolation faced by many Territorians, particularly those living in remote localities. Increased access to IT infrastructure has enabled the delivery of a wider range of mainstream services to remote areas. The provision of internet services in remote localities has enabled Territorians to access bank account details, a service the urban population takes for granted.

The low volume of network traffic in the Territory, in combination with limited competition, has meant that there has not been a significant reduction in the unit cost of electronic services delivered to remote regions. Nonetheless, remote areas have benefited from Commonwealth and Territory government initiatives in the telecommunications sector.

Communicating Remotely One of Telstra's guarantees to remote areas under the Universal Service Obligation (USO) is Untimed Local Calls in Extended Zones (ULCEZ). This program provides for local calls to adjacent zones and internet access. Another Commonwealth program aims to make the purchase of satellite services more affordable, in remote areas.

The Australian Government's Networking the Nation (NTN) program is delivering significant benefits to many regional and remote organisations and communities. Three of the larger NTN programs, attracting the majority of the \$25 million provided to the Territory, are to connect two way satellite services, the Electronic Outback Project and the Outback Digital Network (ODN). The ODN programme has expanded Telstra's network from a basic land line phone service to a service which has the capacity to carry internet and mobile phone service and has increased the area covered by Telstra services to include the area from Tiwi Island to Gove.

Various agencies of the Northern Territory Government have been involved in implementing programs to improve the delivery of services to remote Northern Territory communities. The Department of Employment, Education and Training (DEET) has implemented the Learning and Technology in Schools (LATIS) project to provide ICT to every school in the Territory. In addition, laptops have been delivered to each of the Northern Territory Government's 2400 full time teachers. Further, DEET now provides interactive distance learning through two way satellite technology, replacing the two-way radio and providing capacity to extend School of the Air services. The Department of Health and Community Services (DHCS) has acquired about 200 two-way satellite services to serve approximately 70 remote communities. These satellite connections provide internet access and e-mail for remote clinics and staff. The Territory Police also have a policy of providing data connections, wherever possible, to remote police stations.

Mobile Coverage Telecommunications service providers continue to increase mobile coverage and infrastructure in the Territory. The Australian Government has also committed to extending mobile coverage in remote regions of the Territory through several funding programs. The "Towns Over 500" Program has improved services in Borroloola, Lajamanu, Ngukurr, Numbulwar, Oenpelli, Timber Creek, and Yuendumu, while the Mobile Phones on Highways Programme has extended coverage on the Arnhem, Barkly and Stuart Highways.

Further, the communities of Barunga, Beswick, Coinda, Daguragu/Kalkaringi, Daly River, Galiwinku, Gapuwiyak, Maningrida, Milikapiti, Milingimbi, Pirlangimpi, Ali Curung and Waruwi will benefit from improved or new CDMA service through the Regional Mobile Phone Programme. The new coverage is expected to be completed by November 2006.

NT Government and ICT To promote the development of the ICT industry in the Territory, the Government outsources major computer and communications contracts. Computer Sciences Corporation of Australia (CSC) provides computer facilities to Territory Government agencies, with services delivered by teaming with a consortium of national and local partners, including small and medium sized (SME) territory owned computer companies. In 2003-04, CSC employed almost 150 people in the Territory.

Voice, data and internet services to the Territory Government previously provided by a SingTel Optus consortium, will be provided by Telstra from June 2005. The value of the five year contract is \$140 million and will directly employ around 70 people. Telstra also plans to increase its presence in the Northern Territory with its Industry Development Program, creating a further 170 new jobs.

Indications The convergence in the mobile and data/internet products market is proving to be popular, particularly for business customers. This technology provides high-speed/broadband mobile data with speeds from 144kbps to 1.5mbps on the CDMA mobile phone network, allowing for wireless computer mobility across the Territory.

Trends indicate that, across the board, business and residential consumers are increasingly using higher speed data products to access the internet both from the fixed network using products such as ADSL, ISDN as well as broadband Satellite. Figures indicate a growing move away from dial up services using the Public Switched Telephone Network.

This has led to some fixed line substitution, with broadband customers no longer needing second lines for modem use, as ADSL/ISDN use the main line and broadband satellite is independent of the copper access network.

Fixed line substitution is also evident with some customers preferring a mobile service as the preferred voice service. Prepaid mobile services are increasingly popular in remote communities due to improved CDMA mobile base station penetration over the last three years.

Training and Education An important factor for supporting growth in the industry is the ability to innovate and maximise the utilisation of new and emerging technologies. In February 2005, the Department of Communications, Information Technology and the Arts (DCITA) invited applications to deliver the IT Training and Technical Support Program in the Northern Territory. Round one of the program funded projects targeting communities south of Tennant Creek. Round two of the program sought projects that would target communities in very remote areas of the Northern Territory north of Tennant Creek. The initiative is specifically aimed at non-metropolitan communities and does not cover Tennant Creek, Katherine and Darwin.

Television In Darwin, television transmission continues to improve, with the ABC, SBS, Channel Nine and Channel Seven Darwin, all commenced digital broadcasts in 2003. In February 2005, the ABC commencing test digital broadcasts in Katherine. Working towards a future in digital television ABC will install two new transmitters, one in Katherine and Alice Springs, by May 2005. Simultaneous broadcasting of the analogue and digital signals will continue until a full transition to digital television is made in 2008. Info television broadcasts tourist-oriented information in Darwin via the free-to-air and cable networks. 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.

Under the SBS Television Rollout (Television Fund) Katherine will benefit from the \$73.7 million allocated during financial year 2003-04 to finance the extension of the SBS analog television service to 1.2 million Australians residing in 36 regional transmission areas.

In 2003-04 Angurugu, Minjilang, Mataranka, Umbakumba and Yuelamu benefited from the Australian Government's Television Blackspot program. The program replaced obsolete equipment at retransmission sites throughout the Territory. A further 48 sites in the Territory have been identified as 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. The Commercial Radio Blackspots Program is an Australian Government initiative designed to deliver new or improved commercial radio services to regional and remote communities where it has not been commercially viable for licensees to provide coverage. Successful funding applicants for new commercial radio stations during 2004 were: Jabiru Freshstream FM, Adelaide River Grant Broadcasters, and Nhulunbuy Freshstream FM.

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.

Improved Service Delivery 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.