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The Australian Telecommunications  
Environment

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# 12

## Australia

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In a vast but sparsely populated country, Australia's telecommunications system has been driven by the goal of overcoming distance and breaking down isolation. Australia is a continent of 7.7 million km<sup>2</sup> with a population of just over 17 million (mid-1991). However, the population is highly urbanized, with 43 percent in urban Sydney and Melbourne. The prime development focus for telecommunications has long been to provide a nationwide grid, as well as international communication gateways.

In many ways the system is remarkably sophisticated by international standards. The benchmark policy principle—to provide universal service at affordable prices—has resulted in Australia having one of the highest telephone densities in the world, with tariffs reasonably priced by any international comparison and a network well connected to the rest of the world. Australia has also developed and maintained advanced, viable local equipment production.

### 12.1 Bicentennial Communications: 1788–1988

Australia has always shown a propensity to take up new communications technology quickly—from the first telegraph service in the 1850s, through radio telegraph in 1912, radio broadcasting in the 1930s, and television in the 1950s, to facsimile and cellular radio services in the 1980s. The notable exception is television: Australia still had no cable or pay television services in 1992.

Telegraph was operating in Australia within a decade of its inception in the United States. The initial service in 1854 clicked its Morse code messages over the 19 km between Melbourne and Williamstown. Poles with single iron-wire lines linked Sydney, Melbourne, and Adelaide by 1858. A year later the remarkable achievement of linking Melbourne to Tasmania by submarine cable across Bass Strait was completed. Charles Todd undertook to construct a 2,900-km line between Adelaide and Darwin in the 1870s. Using information chronicled by the explorer John Stuart, who had made the first crossing of the continent just eight years earlier, and traversing some of the harshest environment

in the world, Todd completed the project in 1872. Australia does offer a rich history of extraordinary telecommunications pioneers.

Within a year of Bell's 1876 patent, successful telephone trials were conducted over telegraph wires in Australia. Robison Bros in Melbourne installed Australia's first commercial telephone to link their Flinders Street office and their South Melbourne foundry, using the prestigious "1" telephone number they retained until the 1920s. In 1880, just two years after the world's first commercial exchange opened in Connecticut, Australia's opened in Melbourne. The first interstate trunk route was between Melbourne and Sydney in 1907. In their early days both telegraph and telephone services were expensive, distance dependent in pricing, and primarily available only to business organizations.

When the Australian states agreed to a federation in 1900, the Constitution vested responsibilities for postal, telegraphic, and telephonic services with the national government. With federation came formation of the Postmaster-General's Department (PMG), which was granted authority to establish, erect, maintain, and use stations and appliances for the purpose of transmission and receipt of wireless messages. Moyal's classic history of Australian telecommunications (1986) details the early problems of harnessing the disparate postal, telegraph, and telephone services into a central administration.

A Royal Commission in 1908 investigated the management, finance, and organization of PMG, and complaints about the services. Moyal reminds us that many of the vexing issues in Australian communications—dissatisfaction with postal services, network services, cross subsidies for remote areas, and interstate rivalries—are as old as the Commonwealth itself.

Radio stations 2CF and 2BL commenced broadcasting in New South Wales (Sydney) in 1923, and in 1932 the Commonwealth government established the Australian Broadcasting Commission (ABC) along lines similar to the British Broadcasting Corporation (BBC). A two-tier system emerged: There was the publicly funded national ABC, plus private stations and networks for both radio and television. Commercial Channel Nine in Melbourne initiated the first Australian telecast with the 1956 Olympic Games, but national commercial networks did not emerge until a decade later.

In 1960 significant technical changes fashioned modern telephony, including introduction of crossbar exchanges, automatic trunk dialing, and digit numbering. Telex, which became automatic in 1966, was introduced in 1954.

The government approved broadly stated objectives for telephony development that were to set the foundation for long-term national objectives. Known as the Community Telephone Plan for Australia (1960), it directed the postmaster general to progressively improve new connections service, increase the number of automatic telephones, improve distant transmission standards, and enable telephone users to dial any other subscriber within Australia. Governments after World War II were usually a coalition of two conservative parties, the Liberal Party and the Country (now National) Party. The Country Party naturally showed special interest in communications for its rural constituents, and it often held the PMG portfolio.

In 1972 the first Labour government in twenty-three years swept to power

on a theme of "time for change." The election heralded institutional reforms, including significant ones for communications. In keeping with international trends at that time, responsibilities for postal and telecom services were divided between an Australian Postal Commission (Australia Post) and Telecom Australia, which was established as a statutory authority under the Telecommunications Act 1975.

These changes were the outcome of the Vernon Royal Commission in 1974. Vernon recommended separate, government-owned, corporations, each administered by a board of seven commissioners empowered to determine the conditions of service and pay for its own staff. The government maintained the prime policy role, with a minister and a Department of Postal and Telecommunications (DPT).

Responsibility for overseas telecommunications became a politically contentious issue in the mid-1970s. The Overseas Telecommunications Commission (OTC) had been established in 1946 as a commonwealth business enterprise through the merger of the international telecommunications division of Cable & Wireless Ltd. and Amalgamated Wireless Australia Ltd. Though the Vernon Commission showed unanimity on the recommended division between postal and telecommunications institutions, it split on merging OTC into Telecom. Chairman Vernon dissented because he did not believe planning would be optimized by a single authority. The Whitlam Labour government (1972–1975), with strong Telecom trade union support, continued to push for amalgamation, but a hostile senate (the upper house) voted against it. OTC maintained its institutional independence from Telecom until the 1990s.

In 1981 the coalition (Conservative) Fraser government confronted the monopoly issue by establishing the Davidson inquiry with a prime term of reference being "the extent to which the private sector could be more widely involved in the provision of existing or proposed telecommunications services."

The Davidson Report (1982) concluded that Telecom ought to develop a stronger commercial orientation, which could best be achieved by conversion to an incorporated company—Telecom Australia Ltd.—that was still, however, wholly owned by the government. The report, however, did challenge Telecom's extensive monopoly powers. It advocated allowing private operators to maintain terminal equipment and wiring in customers premises, as well as interconnection of private networks to the public switched network, with resell of excess capacity. Davidson, however, was well ahead of his time.

Members of the National (Country) Party heeded the speculative publicity about increased rural phone charges, and the recommendations languished in the political maneuvering leading up to the 1983 general election. The election brought to power a Labour government led by former trade union leader Bob Hawke, which initially assured Telecom's status quo. However, arguments about competition and liberalization were destined to resurface.

Telecom also had to face what it perceived to be a major threat from satellite technology in the 1980s. The catalyst for introduction of a domestic satellite system came from Channel Nine's commercial television network proprietor Kerry Packer. Packer knew such a system offered him both alternative distri-

bution and the prospect of increased audiences, and the potential to break the terrestrial monopoly. His request, albeit progressively modified by government inquiries and objections, essentially became national policy in 1979. At the time of the announcement, the institutional questions concerning terrestrial and satellite control were unresolved. Instead, a "tyranny of distance" speech was delivered to Parliament by the minister of postal and telecommunications, who justified the decision on the grounds that "it is all too easy to overlook, or remain blissfully oblivious to, the plight of those of our fellow countrymen who are seriously disadvantaged by a lack of communications services and communications dependent services."

Governments of different political shades subsequently grappled with conflicting claims from many vested interests associated with the system. They also agonized over finding ways of making the national satellite authority, Aussat, both politically acceptable to Telecom supporters and economically feasible. The Fraser administration (1975–1983) proposed Aussat as a commercial company, with 51 percent public ownership. However, under successive Hawke governments (1983–1991), with their strong union power base, 75 percent of Aussat's shares were held directly by the minister for communications on behalf of the Commonwealth; Telecom took 25 percent. Telecom–Aussat's arranged marriage was widely perceived as being only temporary, because the forces of liberalization will inevitably bring major changes. Indeed, in 1991, competition in network service was introduced (see Sec. 12.8 for an extensive discussion).

## 12.2 Contemporary Issues

Australian telecommunications needs to be set in the context of the national political economy. Australia was labeled "the lucky country" by polemicist Donald Horne in 1964, who warned that Australia (in the mid-1960s) urgently needed to take stock of its institutions and policies and examine its attitudes to politics, business, the arts, the cities, and the country. For Horne, Australia "lived on other peoples ideas" in "a nation more concerned with styles of life than with achievement." According to the rules, he warned, "Australia has not deserved its good fortune."

For an economy heavily dependent on agricultural produce, energy, and raw materials, the downturn in world prices for iron ore and coal in the 1980s meant that Australia's economic luck had run out. In addition, protectionist policies adopted by major agricultural trading countries, especially the European Community and the United States, resulted in loss of some major overseas markets.

Australia's information industries typify the economic, trading, and industrial problems of the nation as a whole. At a time of growing consumption of information goods and services, the import dependence for information components, devices, and software packages is staggering. Senator Button, minister for industry, technology, and commerce crystallized the problem in his "1987

Information Industries Strategy" document. "Presently, Australia has an information industries trade gap in excess of \$4,000 million which is forecast to approach \$10,000 million by the early 1990s. In the absence of strong action to redress fundamental industry weaknesses, trade in information products and services will be the largest contributor to Australia's trade deficit in the next decade." (Throughout the chapter, unless noted otherwise, figures are in Australian dollars.)

A series of policies in the 1980s attempted to address these structural economic problems. Early on, the Hawke administration introduced measures aimed at the general revitalization of industry, including a 150 percent tax concession for R&D, accelerated depreciation of plant and equipment, and venture capital opportunities through the creation of management investment companies. These policy measures were seen as catalysts for change rather than as ongoing industry subsidies, and the government eventually phased them out.

The sense of national economic urgency has occasioned government attempts to foster a more entrepreneurial, outward looking, export-oriented and productive culture. The Department of Industry, Technology, and Commerce has negotiated a series of Partnership for Development agreements with major transnational corporations having Australian subsidiaries. The companies have promised certain levels of R&D and exports. Ericsson, GPT and Northern Telecom are among the participants. The Telecommunications Act was amended to enable Telecom to engage in joint industry ventures; a subsidiary company, Telecom Australia (International), was established in October 1986 to engage in international consultancy and project management. By 1990 it had a staff of 200 and contracts in thirty-two countries—including a widely contested one to manage Saudi Arabia's network. These are all responses to the international trading crisis and indicate an awareness of the urgent need for Australia to find its place in economic globalization.

Debates about privatization and deregulation across the whole spectrum of economic activity gained added impetus in the 1980s. The Fraser government embraced the rhetoric, but not the reality, of Friedman's 1970s monetarism and small government. Thus, at the change of office in 1983, Hawke inherited a record federal government deficit. His administration acted somewhat out of character for a Labour Party, whose members saw their prime role as redistribution of political and economic power to remedy perceived injustices of capitalism. The Australian dollar was floated, the banking system deregulated, with the introduction of foreign banks, and government austerity cut into social welfare programs. Trade deficits have continued and aggregate foreign debt (public and private) stood at around U.S.\$140 billion in 1991. GDP in 1990 was U.S.\$255 billion, growing at just 1.6% adjusted for inflation.

The issue of privatization of government-owned enterprises has been agonizingly divisive for Labour. Public ownership of major enterprises is deeply embedded in the Australian social fabric. Soon after Labour's re-election in July 1987, Hawke floated the prospect of possible selloffs, an action initially widely regarded within the Labour movement as ideological treachery. Gradually, debate centered on whether to privatize particular enterprises and on the

crucial question of how public enterprises could raise the substantial capital required to remain technologically and commercially competitive.

Reelected to a fourth term in March 1990, the Hawke government's major policy thrust became microeconomic reform. Telecommunications became the centerpiece of a review of the efficiency of major industries. The issue of Aussat's debt could no longer be avoided. The range of vested interests and strongly held convictions about change led to a special Labour Party conference in September 1990. There, Labour took the plunge and agreed on a modest privatization program: Commonwealth Bank, Australian Airlines, and Qantas (the domestic and international air carriers, respectively). Kim Beazley, minister for transport and communications, argued for merging Telecom and OTC, and selling Aussat to someone who would then be allowed to compete with the combined publicly owned entity. Paul Keating, then Finance and Deputy Prime Minister, later Prime Minister, favored using a privatized OTC as the basis for a carrier to compete with Telecom. In the end, a duopolistic competition model was introduced; Telecom and OTC were merged into one company called AOTC (see Section 12.8) and Aussat was taken over by Optus, an international consortium.

### 12.3 Institutions and Services

The Australian information industry is a significant sector of the economy, with \$20 billion in annual revenue, which accounts for about 5 percent of GDP. The telecommunications component—about \$12 billion—had been dominated by the three public carriers—Telecom, OTC, and Aussat. Information technology markets are typically dominated by the major computer corporations. There is also significant private sector involvement in customer premises equipment and value added services.

Responsibility for policy rests with the Australian government, specifically with the minister for transport and communications. With the election of the third Hawke government in 1987, the former Department of Transport was amalgamated with Communications. The Department advises the Minister on all matters relating to provision of telecom services and is the primary architect of national policy. It also manages the radio frequency spectrum pursuant to the Radio Communications Act.

For broadcasting, a quasi-judicial statutory agency, the Australian Broadcasting Tribunal, has authority under the Broadcasting and Television Act 1942 over license renewals and investigations, as well as issues relating to standards. Though this body performs many of the functions of its U.S. equivalent, the Federal Communications Commission (FCC), it does not play a significant policy advisory role. Following a spate of takeovers in broadcasting during 1987, the chair of the Tribunal, frustrated by its inability to review rapid ownership changes adequately, described the authority as a "toothless tiger." Its powers and functions are under review by a standing committee of the House of Representatives.

The Department of Transport and Communications (DTC) plays a far more significant role in policy formulation than does the Tribunal. In 1988, for example, DTC had no fewer than nine inquiries or reviews underway concerning major policy issues relating to telecommunications and broadcasting. These include an overall review of the regulatory environment, an inquiry into introduction of cable and pay television services, a review of national public broadcasting policy, an analysis of the prospects of community television, and an overhaul of the Broadcast Act. These are internal, departmental inquiries; there are no established mechanisms to enable broad-based public participation, and the likelihood of fundamental policy changes from this plethora of inquiries is problematic. In many ways the statutory authorities concerned with the provision of services maintain de facto policy authority for the Australian telecommunications environment.

Domestic telecom services had been provided by Telecom, which was responsible for the terrestrial public switched network, and by the domestic satellite carrier Aussat. International services were provided by OTC, which was also a member of Intelsat. Before their merger both Telecom and OTC were public corporations established under acts of Parliament. Aussat was set up as a commercial company, governed by the company's Memorandum of Articles of Association, with responsibilities according to the Satellite Communications Act 1984.

The next three sections describe the major carriers prior to their mergers and the restructuring of the industry announced in 1990 and undertaken in 1991. The now-merged Telecom and OTC continue to offer the same services described later. (Green 1990 is a summary of the situation through early 1990.)

### *12.3.1 Telecom*

Telecom was Australia's most profitable public corporation, the telephone company Australians love to hate. It was by far the largest of the three authorities with \$8.9 billion in 1990–1991 revenues—more than five times OTC's and almost fifty times Aussat's. OTC, however, was relatively more profitable.

The Telecommunications Act 1975 vested authority in Telecom "to plan, establish, maintain, and operate telecommunications services within Australia." No person may construct, maintain, or operate telecommunications installations within Australia unless authorized by Telecom or otherwise permitted to do so by the Telecommunications Act 1975, the Wireless Telegraphy Act 1905, or the Broadcasting and Television Act 1942. No one could attach a line or item of equipment to the public switched network unless authorized by Telecom.

It must be stressed, given the country's size and population distribution, that providing universal services at affordable prices for all Australians has long been the benchmark policy objective. The proportion of households with access to a telephone has increased from 62 percent in 1975 to 90 percent in 1986. Australia ranks eighth in the world in terms of telephones per capita. Cross subsidy arguments for rural Australia were consistently used to defend the monopolistic positions of Telecom and Australia Post.



Plain old telephone service had been at the heart of Telecom's business. However it moved toward being a more broadly based network service provider, recognizing VAS is the biggest growth area. Indeed, Telecom's management since the early 1980s acted with a sense of urgency over the need to diversify its product lines and to organize management structure around selected target customer groups.

Business demand for data transmission has continually outstripped capacity. Requests for two new data transmission services introduced in the 1980s, Digital Data Service (DDS), a leased circuit service, and Austpac, a packet switched service, quickly exceeded expectations. AOTC also offers a national videotex service, called Viatel, which is similar to the UK's Prestel. Since Mobilnet, Telecom's cellular operator, began in March 1987 there has been sustained demand for mobile services.

### 12.3.2 OTC Ltd.

OTC was a corporate body, wholly owned by the Commonwealth of Australia, to which it paid a dividend (\$46 million for 1987-1988). Treasury long regarded OTC as a cash cow, with a resultant reduction of investment funds available to the commission, much to the dismay of its senior management. Though OTC's annual turnover was only a fraction of Telecom's, its profit growth as a percentage of revenue in the 1980s was usually the best of Australia's nine major statutory corporations. Revenue reached \$1.2 billion during fiscal 1988 with a record pretax profit of \$190 million; these reached \$1.7 billion and \$276 million, respectively, in 1991.

International telephone calls were OTC's principal service and revenue earner. Access to over 200 destinations is available; about 93 percent of all calls were dialed direct in 1991. IDD rates have fallen in real terms every year since direct dial was introduced in 1976. Newer business offerings include an ISDN-based service, private network services, and an advanced fax product. OTC was the largest investor in the PacRim fiber network.

The company was also active outside Australia. It developed a surprisingly successful strategy: OTC built satellite facilities to be paid for from operating profits. The first, linked to Intelsat, was in Ho Chi Minh City, Vietnam, in 1987. The U.S.\$700,000 cost was recovered in a year. This led to a larger dish and one in Hanoi and ultimately, in late 1990, to a ten-year contract worth \$250 million to develop Vietnam's international telecommunications infrastructure. Cambodia and Laos have also become customers. (A summary of OTC activities in Southeast Asia is *Communications International*, Oct 1990, p. 10.) Other poor and formerly communist countries approached OTC. In addition, OTC went so far as to form a consortium with Southwestern Bell to bid for New Zealand Telecom.

### 12.3.3 Aussat

Aussat Pty Ltd. was incorporated in the Australian Capital Territory in 1981 for the purpose of establishing, owning, and operating the national satellite

system. It was conceived as a commercial company, unlike statutory corporations Telecom and OTC, and operates under the Satellite Communications Act 1984. The company had a high debt to equity ratio (22:1 in 1991) and consistently lost money—except in 1988–1989. Senior staff publicly argued that regulatory limitations on the types of service it could offer impeded significant private network product development, and thus profitability.

The first two Aussat satellites were launched in 1985 by NASA. A similar, third satellite was launched by Ariane rocket in September 1987. In total, the Australian satellite system has forty-five transponders: each satellite has 15 transponders of  $4 \times 30$  watt and  $11 \times 12$  watt capacity. The first two satellites exhausted their positioning fuel during 1992–1993, making room for a second generation (L-band). Primary services have been the relay, distribution, and assembly of commercial and national television programs, as well as direct to home satellite broadcasting, and a national aviation network. There are about 100 earth stations in remote areas.

#### *12.3.4 Equipment Manufacture and Supply*

Despite the comparatively small size of the market, most of the world's major communications companies operate in Australia. Local subsidiaries of Ericsson and Alcatel–STC dominated the market in the 1980s. The industry is heavily dependent on Telecom, which has a network with leading-edge technologies in digital switching, mobile telephones, packet switching, and ISDN. As the de facto manufacturing policy architect, Telecom's purchasing practice has sought world tenders for infrastructure development, with associated Australian manufacture and support. Thus, because Telecom decided in 1975 to standardize on Ericsson's AXE switch, Alcatel made it under license in Australia. In 1990 Telecom decided to buy Alcatel's System 12 switch as a second switch type.

The communications equipment industry in Australia involves about 200 companies and has annual sales of over \$1.5 billion. It exports about \$250m per year and employs well over 10,000 people. There is about 70 percent real local content in major products. It makes a considerable variety of advanced products, including digital switching technology, submarine fiberoptic systems, PBXs, mobile radio telephones, and transmission equipment.

With this product range and the advantage of a weak Australian dollar, modest export performance, especially at a time of phenomenal international telecommunications growth, has been seriously questioned. Policy analysts have attempted to encourage structural adjustments in CPE manufacture in the hope export spin-offs will occur. Australia, however, faces substantial cost disadvantages as a world manufacturer, and economic "drys" point to the undesirability of dependence on Telecom's local preferential purchasing policy. Some argue that without Telecom support there would be almost no equipment manufacturing in Australia. Export performance has emerged as one of the most serious areas for wholesale policy review.

## 12.4 Subsidies

Telecom always interpreted its primary role as being delivery of nationwide telecommunications services at uniform, affordable prices. Section 6 of the Telecommunications Act 1975 describes the general complexity of demands on the common carrier, in requiring Telecom to "perform its functions in such a manner as will best meet the social, industrial, and commercial needs of the Australian people and make its telecommunications services available throughout Australia for all people who reasonably require those services." Hence, Telecom had long argued it could subsidize mandated but uneconomical services only as a monopoly.

Within certain service categories, uniform pricing is charged irrespective of location. Charges for local calls do not vary according to duration or time of day. In 1988 Telecom floated the prospect of introducing timed local calls, only to receive such a hostile public reception during a disastrous-for-Labour by-election in Adelaide that Prime Minister Hawke personally intervened to instruct Telecom management to immediately drop such plans.

Also, connection charges bear little relationship to substantial differences in the costs to Telecom, particularly for rural versus metropolitan installations. Evidence tendered to a House of Representatives standing committee on expenditures in 1986 claimed installing a typical metropolitan residential phone cost \$1,500, as opposed to an equivalent rural service cost of \$6,000.

The major source for subsidies is the STD network for intermetropolitan trunk calls. Telecom argued that these funds do not come from the government, and asserted "prices are still competitive in long distance traffic compared with other major developed countries." Little data are available about the extent of the cross subsidy. Evidence tendered to the Prices Surveillance Authority in 1984 by Telecom forecast annual long-distance revenues for 1984-1985 of about \$1.5 billion with direct costs of about \$0.45 billion.

The crux of Telecom's charging strategy was to levy on long-distance calls and business users in order to hold down prices for local calls, residential users and rural subscribers. Telecom has long maintained that such redistribution of income is socially desirable and would be threatened by any change that allowed private entrants who only wished to provide services on the highly profitable intercapital city routes. The "cream skimming" argument long carried great weight politically. Also, of course, the central place of the Country (now National) Party in coalition governments from 1949 to 1972, then again from 1975 to 1983, meant support for rural subsidy.

The Davidson Committee, which reported on telecom services to the national government in 1982, highlighted many anomalies in cross subsidy arguments. Davidson argued that uniform pricing had the effect of placing the financial burden for support of socially desirable objectives on selective groups of customers, rather than spreading them over the whole community. His committee challenged Telecom's pricing premise that low telephone rentals were provided for low income families. Davidson argued, that some wealthy families, for instance, enjoyed their membership in the nonbusiness residential group, while

“struggling businesses who provide employment pay discriminatory high telephone rentals.” Similarly, Davidson argued that low-income metropolitan families subsidized wealthy rural subscribers.

Other services internally cross subsidized by Telecom but regarded as desirable public interest functions have included losses associated with directory assistance, public pay phones, and the telegraph. Again, data regarding the extent of these losses are hazy. The only budgeted direct government subsidies apply to specified pension and welfare rental concessions, for which the national government reimburses Telecom annually.

Critics, Davidson included, have asked whether it was the proper task of Telecom management to make their arbitrary judgments about crosssubsidization priorities, or whether these were matters for the political judgment of elected parliamentary representatives. They further ask why cross subsidies are not clearly identified as such, with their amount readily available for public scrutiny.

There have been great variations in estimates of the extent of cross subsidy. Telecom provided estimates each year, and they have been around 6 percent of total revenue. In its presentation to the Hutchinson policy review included a subsidy figure for community service obligations “of the order of \$1 billion” (Telecom 1987, p. 6). There are, of course, great difficulties associated with the methodology of estimating the exact extent of the cross subsidy, involving issues much deeper than mere disputes about accounting conventions. Ergas, in an OECD report, points out,

It is nonetheless extraordinarily difficult, if not impossible, to rigorously determine the extent of cross subsidization inherent in a given structure of telecommunications prices. This is because joint costs, which account for some 40 percent of the total costs of a telecommunications system, are by definition difficult to allocate, and even specification of the type of cost which should be used to evaluate the cross subsidy is intensely disputed.

## 12.5 Private Networks and Interconnection

The essence of Australian policy on common carriage was that Telecom was the exclusive provider of domestic services, except for satellite communications provided by Aussat, and for specifically designated private networks approved by Telecom. Monopoly carriers tend to restrict access by competitive carriers where it is against their interests, and strict policies apply wherever private networks interconnect with the public common carrier. Telecom has felt obliged to move in some way towards a more flexible policy position since the late 1980s, both on private networks and on interconnection, as a result of new and increasing demands for diverse services, as well as organized political pressure.

Private networks are essentially the province of large organizations with geographically dispersed operations, such as banks, oil and mining concerns, retailers, and some state government utilities, such as the State Railway Author-

ity of New South Wales. As well, two states, Queensland and Victoria, established their own telecom authorities, Q-Net and Vistel, to facilitate internal state government communications. Queensland chose to sell Q-Net to a major media group, Bond Corporation, in early 1988. Early 1992 found New South Wales (the most populated state) and Queensland seeking bids for private systems that included telephones, data terminals, mobile radio and video services. Contenders are joint ventures, generally including foreign communications firms.

### *12.5.1 Aussat and Networks*

Aussat held a unique position in Australian private networks. Its prime business is to sell private leased satellite services to large users, notably broadcasting organizations in Australia. It could permit a customer or set of customers constituting a common interest group to operate or share a leased satellite circuit. Before 1991, however, Aussat could not permit customers to interconnect with the public terrestrial network unless the terms and charges are acceptable to Telecom.

What Telecom management feared was that private networks would make progressive inroads into common carrier traffic. Defence of the status quo was also made on grounds of threats to national interest. That is, ran the argument, private network expansionism has the potential both to degrade the technical standards of the network, and to evade justifiable contribution to the subsidies that make possible continued extended network construction and desirable though unprofitable services.

### *12.5.2 Policy*

Telecom had argued that "private networks policy cannot be determined in isolation: It is heavily dependent on the approach taken to common carriage and the location of public network service boundaries" (Telecom 1987a, p. 11). Telecom safeguarded its position by defining specific categories of approved private networks as outlined earlier as well as by other regulatory measures, including those relating to facilities ownership, maintenance, and third party carriage.

Private ownership of private network facilities is normally limited to CPE (i.e., PBXs and terminal equipment). Transmission plant and equipment must be provided by and leased from Telecom unless exempted under Section 94(2) of the Telecommunications Act. Exemptions include transmission restricted to private property, public utilities, and licensed radio transmission. Not only must network attachment equipment meet approved technical standards, but maintenance by Telecom staff was mandatory for interconnected CPE. Only from the late 1980s have PBX manufacturers and vendors been permitted to offer maintenance directly to customers.

It is important to quote the grounds on which Telecom justifies this (Telecom 1987a, p. 2).

1. Telephone subscribers using the trunk network for calls make a contribution to the establishment, development, and operation of a national asset—the public telephone network, through the payment of a social contribution included in STD and other trunk call tariffs. Operators of private networks extending over a trunk distance should pay this share when they wish to interconnect to the public network to gain the benefits of using that network.
2. Local call areas in Australia, particularly the capital city calling zones, are priced on the basis of unit call fees and represent an undervalued resource, bearing in mind their size and scope and the high level of connectivity and other forms of utility involved. The value of connection from outside to local call areas is reflected in STD charges for PSTN users and, in the case of private network operators interconnecting with the network, in interconnect charges.

Telecom argues that “sharing must stop short of full-blooded third party carriage, otherwise the concept of common carriage has no separate meaning” (Telecom 1987a, p. 12). Telecom does not permit any carriage of third party traffic on behalf of any other body.

Many critics, including Newstead, formerly of Telecom’s senior management, believes that the underlying premises of such positions are suspect. He questioned the validity of the interconnection charge of \$2,000 per circuit, based on the concept of mandatory social contribution. The foundation for the charge, he asserted, was simply what the market would bear.

## 12.6 Formulating Policy

From the late 1970s, successive Australian governments have struggled to develop policy responses to the waves of technological change in telecommunications. This has been part of an essentially irrational political process, generally characterized by short-term pragmatic responses and the shelving of decisions in complex areas. A small group of policymakers in Canberra hold the balance of power in the process because the Commonwealth (federal) government holds the constitutional authority for broadcasting and telecommunications. A few politicians—members of the government of the day—together with their advisors and senior bureaucrats, with selective inputs from labor and commercial interests and a few other pressure groups, determine major public policy decisions in this Westminster system. Unlike the United States, the courts have not been a focal point for policy change.

Australian governments have generally lacked an integrated frame of reference grounded in social investigation, strategic planning, and a careful assessment of options. This is true despite the plethora of public inquiries and major reports that dominated the communications field in the 1980s. One group was responsible for the telecommunications Task Force Report, sometimes referred to as the Hutchinson Report, after the head of telecommunications policy for the Department of Transport and Communications.

The Hutchinson review, in accord with the ministerial directive, focused on four strategic policy issues: (1) the nature and extent of monopoly powers needed

for telecommunications carriers; (2) the extent to which private sector involvement should be allowed or encouraged; (3) the extent to which carriers need to be restructured and relieved of government constraints to operate effectively and competitively; and (4) the way in which the industry should be regulated.

The principal submissions were from the major interest groups: the carriers, the Australian Telecommunications Users Group (ATUG), Australian Information Industry Association (AIIA), the Australian Telecom Employees Association (ATEA), Bond Media (a private conglomerate), and the Business Council of Australia.

The players were inevitably caught up in the tide of deregulation. In an industry experiencing exponential growth, pressure for greater market liberalization in the face of an entrenched public common carrier was bound to be politically significant and an ongoing force for change. The major respective positions and pressures for change can be summarized as follows.

Organized select business interests wanted a greater share of the action and growth, and they argued for substantial diminution of Telecom power and a more laissez-faire regime. Arrayed against them were three groups with strong vested interests in the old ways, but aware that the status quo was probably not sustainable. Foremost of the three was, of course, Telecom. Whatever the future regulatory rules were to be, Telecom management intended to maximize its incumbent advantage and thereby maintain its prime market power and position.

Trade union interests—which have considerable political power in Australia, especially in the highly unionized telecommunications industry—wanted to insure that an industrial status quo would be maintained. Also, there are traditional equipment suppliers with a guaranteed market in the PTT under local content regulations; they are keen to see no major structural change. The task of the Hutchinson inquiry was to weave its way through this thicket and produce a workable blueprint for Australian telecommunications.

### *12.6.1 Positioning*

In the lead up to the Hutchinson inquiry, Telecom had signaled its awareness of the need for a new regulatory regime as a response to major structural, technological, and market changes. It was acutely aware that, at a time when the prime minister had canvassed the possibility of the privatization of certain government enterprises (although because of strong opposition he quarantined Telecom), Telecom had to be seen as an efficient and accountable publicly owned enterprise. Managing Director Mel Ward argued that when Telecom was established as a statutory corporation in the aftermath of the 1974 Vernon Inquiry, competition was not an issue. The central issue then was the relationship between Telecom and government, and the government of the day had constructed a series of management controls on a number of aspects of Telecom's operations.

Telecom called for the government to give it a much freer hand in terms of management accountability. Ward called for abolition of restrictions on levels

of capital borrowing and on conditions for the employment of staff, as well as reductions on the terms of external approval needed for real estate, building activity, and purchasing policy:

If Telecom is to be able to respond efficiently, expeditiously and viably in the new and increasingly competitive environment, then this plethora of external management controls must be removed and the enterprise allowed to manage its business and to be accountable to its owners and its shareholders on results. (Ward 1987)

Telecom's submission to the Hutchinson inquiry (Telecom 1987b) asked the government to continue to exercise its primary role in determining overall policy for the industry. For Telecom,

Efficient industry outcomes cannot be achieved without due consideration of national policy objectives. Telecom's existing charter implies clear national policy objectives with respect to the provision of universal, nationwide access to telecommunications services and to equity between metropolitan and nonmetropolitan areas within Australia. (p. 2)

Telecom held that in the framework of restructuring there needed to be a clear separation between national policy, regulation of the industry, and business operations of enterprises in the market.

Telecom agreed with the view that policy administration should be handled by an agency independent of Telecom and other operators. It conceded to the business interests argument that Telecom could not expect to be both a player and an arbitrator. The Telecom submission suggested (pp. 4-5) that the regulator oversee national performance standards, service quality, pricing rules, and community service obligations.

### 12.6.2 *Subsidies*

One of the most contentious issues for the Hutchinson inquiry was the issue of cross subsidy. Telecom contended that a community service obligation (CSO) arose "where a government requires a business enterprise to carry out activities which they would not elect to provide on a commercial basis, or which could only be provided commercially at higher prices." CSOs, according to Telecom, involved universal access, pricing for nonmetropolitan users, and local manufacture. Its estimate of the net cost of CSOs, a term it preferred to cross subsidy, was on the order of \$1 billion per annum.

Telecom derived financial advantage from its public sector exemptions from tax and other trading liabilities, and also from direct government subsidies, such as for pension and other welfare phone rental concessions. Telecom maintained CSOs were in the national interest and asserted that if a more competitive telecommunications model was to emerge, then "all competitors should share, directly or indirectly, the responsibility for underwriting the CSOs."

The incumbent giant called for any significant change on few other issues. The submission claimed it was inappropriate to consider full liberation of CPE supply and maintenance and that provision of value added services was "al-



ready quite openly competitive.” Private network competition should not, according to Telecom, be used to “introduce network competition by stealth,” sharing must stop short of full third party carriage, and the interconnection policy ought to remain untouched. Hence, its public position made few policy concessions, though privately Telecom senior staff conceded major changes were inevitable. Of course, it did not miss an opportunity to seek gain. It cheekily floated a possible takeover of the two other major common carriers, OTC and Aussat. Its carefully constructed submission ended with a plea that Telecom “must retain the ability to diversify its operations in line with industry developments and opportunities.”

### *12.6.3 The Advocates of Change*

The forces of deregulation and liberalization were represented by a well-organized professional lobby, the ATUG. It essentially sought fundamental change involving a major diminution of Telecom’s power and prime market position. Central to ATUG was that the national government had to recapture its policy authority rather than to allow Telecom so much leeway. For ATUG, new policy ought to be formulated around the notion of a two-tier regulatory structure, with Telecom confined to a monopoly of the basic voice network, while all enhanced services ought to be open to competition. The group also advocated removing Telecom’s maintenance monopoly on PBX and interconnected private networks.

ATUG called for an independent regulator, although it failed to fully define the responsibilities of such a body. The principle asserted by ATUG was to the situation where Telecom “calls most of the shots” (Rothwell 1988, p. 4). ATUG’s call was essentially for a procompetitive model not only in the area of CPE and VAS, but also for third party carriage at least by Aussat. How, asked ATUG, could Aussat compete with “one hand tied behind its back, its only competitor sitting on its board and holding a 25-percent stake?” They called for Telecom’s holdings to be sold to the private sector. They added that third party traffic and capacity resale are reasonably possible and should occur. Later, during the 1990 debate, ATUG went further, advocating breaking Telecom into separate companies for basic, mobile, and value-added services.

The AIIA, representing computer corporations interests, also advocated major deregulation. It appealed for greater productivity and efficiency, which it considered would be achieved by dismantling the Telecom monopoly. The AIIA’s two central planks were that (1) strategic policy making power should reside with the government and (2) the regulator should be independent (see Moumic 1988).

Taking a very different stance among other business interests were the larger members of the Australian Electrical and Electronic Manufacturers Association (AEEMA) and its partner organization, the Australian Electronics Industry Association (AEIA). Clearly, members and corporate suppliers such as Alcatel-STC, Ericsson, Fujitsu and NEC thrived on a market structure where their primary customer, Telecom, held a monopoly on first-phone installation and

PBX. Such interests could be threatened by a major shift in market power, and the local equipment industry would be threatened by introduction of an open purchase market. (AEEMA and AEIA positions were reported in *The Australian* of March 14, 1988, under "Manufacturers Speak Out on the Role of a Regulator.")

#### 12.6.4 Unions

Labor unions, particularly the Australian Telecommunications Employees Association (ATEA), confronting the tide of business protest against Telecom practices, argued for retention of the existing regulatory order on the grounds it was essentially efficient and equitable. The union's secretary, Musumeci (1988), asserted the drive for a new regulatory regime was merely the outcome of certain players wishing to change the rules so they could make handsome profits. He even claimed the essential outcome of the U.S. and U.K. deregulatory experiments was that costs for the majority had risen while costs may have fallen for a select group of users. Retention of the status quo—particularly Telecom's monopoly on installation of first phones and all PBX maintenance—of course also protected ATEA-member jobs. ATEA advocated a universal tariff to maintain the concept of universal service.

The ATEA's other basic assertions were that change might result in complex and costly legal wrangles, especially since telecommunications markets cannot be neatly segmented into basic monopoly areas and competitive areas, and that deregulation could have adverse effects on trade balances (Musumeci 1988, p. 4). ATEA merged with the Australian Telephone and Phonogram Operators Association in early 1989, giving the combined union some 34,000 members.

Union views count, as ATEA/ATPOA has a strong political position—unlike its counterparts in the United States and United Kingdom—in part because it is a major contributor to the Labour party. ATEA dramatically affected policy in the late 1970s with major dislocations of the national network. It had also been critical in shaping the rules by which Aussat could operate.

### 12.7 Into the 1990s: Reform and Response

A set of complex forces involving new technologies and unprecedented demand for services forced fundamental adjustments to the institutional and regulatory framework of Australian telecommunications. By international standards, however, these changes have been longer in gestation and slower in evolution than in most advanced economies.

It is useful to crystallize the major questions that need to be addressed.

1. What is the most desirable model for ownership and control?
2. How will policy makers overcome the incongruity of seven pieces of legislation in this field, ranging from the Broadcasting and Telecommunications Act 1946, to the Telecommunications Act 1975, to the Australian Broadcasting Corporation Act 1983?

3. How ought the telecommunications environment be liberalized in its regulatory and operational framework?
4. How should responsibilities be allocated within the operational environment, and then properly overseen? Is there a compelling need for a new and independent body to administer the economic, social and technical functions?
5. What are the legitimate social obligations of the various players?

### 12.7.1 A New Framework

How have the Australian government and the players in the industry responded to such vexing issues? In May 1988 Senator Gareth Evans, then the minister for transport and communications, tabled *Australian Telecommunications Services: A New Framework*. Though the document announced considerable policy changes for Australian telecommunications that were easily the most far reaching since Telecom was established as a statutory corporation in 1975, it did not propose radical change. Australia was not about to move toward a privatized, highly deregulated policy model. A shift toward deregulation in gradual steps was essentially advocated. By Australian criteria, the document represented a significant shift of direction. By international standards it was incremental and politically cautious.

The *New Framework* declared a restructuring of the regulatory environment on its first page. This would provide for "continuing authority for the existing carriers to be the sole providers of basic network facilities and services," though there would be "increased scope for competition in the provision of network terminal equipment for connection within customer's premises" and "full scope for competition in the provision and operation of value added services."

Much to its credit, and in response to mounting pressure, the government outlined what it described as "newly articulated objectives" for Australian telecommunications policy. The objectives were to:

1. Ensure universal access to standard telephone services throughout Australia on an "equitable" basis and at "affordable" prices, in recognition of the social importance of these services.
2. Maximize the efficiency of the publicly owned telecommunications enterprises—Telecom, OTC, Aussat—in meeting their objectives, including fulfillment of specific community service obligations and the generation of appropriate returns on investment.
3. Ensure the highest possible levels of accountability and responsiveness to customer and community needs by telecommunications enterprises.
4. Provide the capacity to achieve optimal rates of expansion and modernization of the system, including introduction of new and diverse services.
5. Enable all elements of the domestic industry (manufacturing, services, and information provision) to participate effectively in the rapidly growing Australian and world telecommunications markets.

6. Promote the development of other sectors of the economy through the commercial provision of a full range of modern telecommunications services at the lowest possible prices.

Retention of public ownership of the common carriers had never really been in doubt, and the Hawke government duly declared (p. 3) that the government, "will retain all its rights and obligations as the ultimate owner of Telecom, OTC, and Aussat, and will insure that they operate consistently with the long-term national interest."

The government argued natural monopoly advantages for retaining the status quo in the basic network!

The existing monopoly has permitted pricing structures to embody the internal cross subsidies that have been used to sustain the important general policy of providing universal access to standard telephone services at uniform affordable prices. (p. 4)

Existing monopolies were maintained for public switched data, text, video, and ISDN, as well as for leased circuits and even mobile telephones! So much for the rhetoric of deregulation that surrounded the inquiry.

The government declared that it had "recognized a need to insure that community service obligations are met to standards that are subject to government scrutiny, within cost parameters that are determined by government in a national resource allocation context" (p. 5). In particular,

Telecom will be required to obtain the approval of the Minister for Transport and Communications for its plans to meet its community service obligations, including the associated levels of costs and cross subsidy that will be involved. The approved plans will then be set out explicitly in Telecom's corporate plans. (p. 7)

The spirit was to replace forms of government control with greater accountability by the public carriers. In keeping with new "level playing field" policies, it was stressed that carrier management would be freed to face competition, and that the government would focus on "bottom line performances" for public telecommunications agencies. Chapter 7 was given over entirely to "Freeing the Carriers From Government Restraints." Telecom and OTC lobbying also won on that issue!

The report identified delineation of the boundary between VAS, currently open to competition, and the basic switched voice and other reserved services, which had monopoly protection, as a key regulatory issue. The government decided, "Value added services will be open to full competition. There will be a licensing arrangement administered by an independent regulatory authority to insure that value added services do not intrude on the monopoly services reserved to Telecom and OTC" (p. 7). Telecom, OTC, and Aussat will be required to maintain separate accounting records for their value added services and "their VAS charges will be required to reflect the standard tariffs for associated use of monopoly facilities and services."

As far as the majority of Australian telephone users were concerned, the most urgently needed reform was to get vastly improved service for equipment

installation and maintenance. The Australian media have long delighted in running a constant barrage of attacks on Telecom's alleged incompetence in the installation of basic telephone services and billing. The report argued for a progressive dismantling of established Telecom responsibilities for CPE and for greater competitive opportunities.

Despite strong trade union opposition, the government decided new service arrangements would apply from January 1, 1989, including opening PBX maintenance and allowing competitive supply of standard-feature phones for second and subsequent instruments.

The government went further in June 1989, passing legislation that opened even more areas to competition, including inside wiring, most CPE, and VAS. In addition, a price-cap plan was implemented for most services.

### 12.7.2 *Austel*

These provisions were to be administered by what was probably the most innovative policy announcement of the Evans document and the June 1989 legislation, establishment of a new independent regulatory authority to be called Austel (formally, the Australian Telecommunications Authority). This was proposed as a single specialized telecommunications agency, independent of the carriers, and answerable to government through the minister for transport and communications. In many ways, Austel was seen as the linchpin for implementing the government's blueprint for change. It was to have five major functions.

1. Maintenance of system standards. Statutory responsibility for insuring that quality and safety are protected and that interoperability is maintained throughout the public network.
2. Protection of the monopoly. The authority to administer the provisions defining the boundaries of the carrier's monopoly over specific facilities and services.
3. Protection of competitors. Where competition is permitted, Austel will promote fair and efficient market conduct, including identifying possible breaches of the Trade Practices Act.
4. Protection of consumers. Austel administers price control arrangements and specific universal service provision conditions.
5. Promotion of efficiency. Austel will monitor and report on the efficiency and adequacy of monopoly operations by Telecom, OTC, and Aussat, particularly with respect to Telecom's fulfillment of its community service obligations.

In assessing Austel's role, its first chair, Robin C. Davey, described it as facilitating, noting, "Regulators stop things; we're here to make things happen" (*Telephony*, Feb 26, 1990, p. 37). Austel set developing reciprocal agreements with other countries on equipment standards as a top priority. This will help domestic producers export, as well as promote competitive pricing in the local market.

## 12.8 The Restructuring

On November 8, 1990, the government announced a radical restructuring of telecommunications. After some debate and a number of amendments forced by opposition parties, relevant legislation—seven bills—was passed in May and June 1991. Telecom and OTC were to be merged, becoming Australian and Overseas Telecommunications (AOTC). Aussat, the debt-ridden satellite carrier, was to be sold “at a price determined by tender.”

The new framework can be summarized as:

1. A fixed-network duopoly, licensed to supply a full range of domestic and international services. The two will be AOTC and the newcomer that takes over Aussat (which is to be the foundation of the new service).
2. The duopoly ends June 30, 1997, when full network competition will be permitted.
3. Each duopolist receives a mobile telephone system license; a third mobile operator will be selected by the end of 1992 to begin operations in 1993.
4. Domestic and international telecom services may be resold.
5. There will be full competition in public access to cordless telecommunications, subject only to Austel technical standards and class licensing.
6. A “universal service obligation” exists and is to be shared among the carriers.

Labour does not intend to privatize AOTC. The Liberal and National parties, on the other hand, appear set to move toward a Thatcher-type model involving the sale of substantial public enterprises, including AOTC, should they be elected in a general election.

Although there was some skepticism as to whether the conditions a newcomer would face would attract bids, two major international groups did contend. However, in the end the one led by Hutchinson Telecom withdrew. The government granted a license to Optus Communications to be the second carrier in November 1991. Optus will pay the government \$800 million and invest some \$3.1 billion (U.S.\$2.5 billion) by 1997 to build its network. The payment will be used primarily to retire Aussat’s \$600 million (U.S.\$469) debt and tax liabilities. Beyond continuing Aussat’s services, the new company expected to be in business very quickly—initially reselling cellular service and providing long-distance between Sydney and Melbourne. Its own digital GSM cellular network was to be in place by 1993, and nationwide long-distance was expected by 1996. Optus is owned by an international consortium consisting of a majority shareholding by local Australian investors, as well as BellSouth and Cable & Wireless (see Table 12.1).

Only “line links” are reserved to the duopolists—defined as any means of carrying communications electronically, be it cable, satellite or microwave. Resale of capacity on leased lines and installing switches by resellers is permitted.

**Table 12.1.** Telecommunications Firms in Australia and Their Owners, 1992*The Duopolists*

## Australian &amp; Overseas Telecommunications (AOTC)

Formed by merger of Australia Telecom and the Overseas Telecommunications Commission.  
Government owned.

*Optus Communications Group*

Owned 24.5 percent each by Bell South (United States) and Cable & Wireless plc (United Kingdom), 51 percent by Optus Pty Ltd. Optus Pty Ltd. is 49 percent owned by Mayne Nickless Ltd. (a transportation, health services and securities firm); other owners are Australian Mutual Provident Socy (19.6 percent), AIDC Telecommunications Fund (19.6 percent) and National Mutual Life Assoc of Australasia Ltd (11.8 percent). (One of the conditions of Optus being licensed was that domestic ownership be over 50 percent within five years. Thanks to AIDC, which is controlled by the government, this was true immediately.)

AOTC will be subject to a price cap, and it and Optus will have to provide unlimited local calls to residential users.

In the now open environment, other international players are investing. For example, AAP Information Services, a local national news service, is joint venturing with MCI (of the United States) and Todd Corp (New Zealand) in a business-user oriented virtual private network service patterned after MCI's VNET. OTC and Telecom were both investing outside Australia before their merger, and continue to see themselves as major regional players. Indeed, in a May 1991 speech to the National Press Club in Canberra, then Telecom managing director Mel Ward said "Telecom/OTC could reasonably expect a customer base of 50 million lines in service, most of it overseas, with significant network operations in the region."

In response to many forces demanding change and during the country's deepest recession since the 1930s, the new framework has been offered to the country by the Labour Party, whose founders would have thought it inconceivable their successors would privatize and deregulate. The new paradigm for Australian telecommunications centers around choice and competition.

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