Telecommunication in New Zealand: Competition, Contestability and Interconnection

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Abstract

Prior to 1987, telecommunication in New Zealand was provided by a government owned monopoly—a traditional Ministry of Post, Telephone and Telegraph. On 1 April 1987—largely because of a sagging economy—the government corporatized telecommunication, creating Telecom Corporation of New Zealand Ltd. (Telecom). Since 1 April 1989, open competition has been permitted in the telecommunication industry; regulation has been only by general anti-trust law. On 1 September 1990—this time, as part of a campaign to retire a significant portion of New Zealand's national debt—the government sold Telecom to a consortium of companies (from the United States and New Zealand).

This paper examines the state of competition in New Zealand's telecommunication industry. It concludes that, although competition is free by law, the telecommunication market is neither truly competitive nor truly contestable; it is, therefore, unsurprising that Telecom (the dominant provider) continues to use its dominance to hinder competition. The paper deals in some detail with the issue of interconnection between the incumbent and competitive entrants—the abuse of which is one of the major ways that a dominant provider can limit competition without appearing to do so.

1. Introduction

New Zealand is a country composed of two main islands (North Island and South Island) and hundreds of outlying islands, with a combined land area of 268,105 square km; it is in the South-West Pacific, about 1,600 km east of Australia. New Zealand's population, at the end of 1993, was estimated at 3,524,800, with an annual growth rate of 0.7% and a literacy rate of 99%. (The source of these statistics, unless otherwise attributed, is either the 1994 World Factbook¹ or the OECD Economic Surveys.²) New Zealand's 1994 Gross Domestic Product (GDP) was \$US 53 billion, with an average annual decrease of 0.2% over the last five years. (This is misleading: the GDP is currently growing at about 5% per year; it was falling by about that much five years ago.³) New Zealand's average annual wage increase over the past five years has been 5.2%, and it's average annual consumer price index increase over the past five years has been 7.2% (the U.S., by comparison, has figures of 2.8% and 4.4%, respectively). New Zealand's unemployment rate is 9.1%.

The above statistics are ordinary and unremarkable, but New Zealand is unique in the world with respect to its telecommunication industry: it has no industry-specific regulation, and competition is open and unrestricted. Although this situation came about largely as a practical response to exogenous forces, it has been given ideological justification. The purpose of this paper is to examine this justification, and to determine whether the regulatory climate in New Zealand has fulfilled its ideological goals.

The remainder of this paper is organized as follows: First, a section will deal with the recent history of New Zealand, in order to place the regulatory changes of the mid 1980s in an economic and political perspective. Next, a section will deal with the process of

¹United States Central Intelligence Agency. *1994 World Factbook*, available through U.S. National Technical Information Administration (NTIA), Springfield, VA (or U.S. Government book stores).

²Organisation for Economic Co-Operation and Development. *OECD Economic Surveys, 1993-1994, New Zealand.* Paris: OECD, 1994.

³Hall, T & Tait, N. "Bit More Pain for Future Gain: New Zealand's Economic Reforms Are Starting to Bear Fruit." *The Financial Times*, 5 July 1994, p. 22.

corporatization and privatization of the telecommunication provider, and the introduction of competition into the industry. A following section will examine the current state of telecommunication in New Zealand, focusing primarily on the issues of competitive entry and interconnection between the incumbent and competitive entrants. Finally, a concluding section will evaluate the overall success of New Zealand's policy of "light handed" regulation.

2. History and Perspective

The recent economic and political history of New Zealand that is relevant to the current state of an unregulated, openly competitive, telecommunication industry can be divided into three periods. First, there is the period from the end of World War II through the 1950s and 1960s, which was a period of economic expansion and general well being. Next, from the early 1970s through the early 1980s, there was a period of economic decline. Finally, with the election of the Labour Party in 1984, a program of economic reform was begun that has continued to the present day, despite the election of the National Party in 1990. This section will describe each of these periods in turn.

2.1. Economic Prosperity

From the end of World War II through the early 1970s, New Zealand experienced extended economic growth: the GDP grew at an average annual rate of 4% from 1949 through 1973.⁴ In fact,

This prosperity was the all-pervasive fact in New Zealand life for the first two postwar decades; it was the dominant influence on social attitudes and on politics alike.⁵

During this period (during which the "conservative" National Party was in power almost exclusively), New Zealand became a welfare state: there were relatively few poor people and

⁴Dordick, H.S. "New Zealand: Testing the Limits of Nonregulation." In Noam, E., Komatsuzaki, S. & Conn, D.A., eds., *Telecommunications in the Pacific Basin: An Evolutionary Approach*. New York: Oxford University Press, 1994; p. 425.

⁵Sinclair, K. A History of New Zealand. London: Penguin Books. 1984, p. 288. Cited in Dordick, op. cit..

relatively few wealthy people, land ownership was widely distributed, and land was largely owner-occupied. The government provided a wide variety of educational, health, welfare and retirement benefits.⁶

2.2. Economic Decline

In 1972, the Labour Party was elected (for only the second time since 1949) on the basis of a platform that promised to continue moving New Zealand toward the goal of becoming a "social democratic egalitarian nation".⁷ At the time, New Zealanders considered their social welfare programs among their "most treasured possessions, one of the last things they would give up".⁸ However, their welfare state was deteriorating, and they were losing their programs anyway: doctors and nurses were leaving New Zealand for higher pay in the U.S., Australia and Canada, and the pension system was underfunded.⁹

New Zealand's economic expansion ended, and its economy began a steep decline, when world oil prices increased sharply in 1974 and again in 1979, and when the U.K. joined the European Common Market.¹⁰ The increase in world oil prices had a detrimental effect on all oil-importing countries, not just on New Zealand. However, New Zealand's economy was heavily reliant on exports of traditional pastoral products, so the economic decline was exacerbated by the slump in U.S. beef prices, and by the entrance of the U.K. into the European Common Market. (New Zealand, as a former colony and member of the British Commonwealth, had enjoyed favored trading status with the U.K.) And, because New Zealand manufacturing had developed under protectionist import licensing (which was first instituted in 1938), manufacturers were inefficient, they had developed serious quality problems, and

⁶Dordick, op. cit., p. 425.

⁷ Ibid.

⁸Sinclair, op. cit., p. 271.

⁹Dordick, op. cit., pp. 425-426.

¹⁰New Zealand Ministry of Commerce, Communications Division ("Commerce Leaflet 5"). "Telecommunications Reform in New Zealand: 1987-1994." *Telecommunications Information Leaflet No. 5*, 1995, p. 2.

were therefore unable to compete effectively on the open market.¹¹

New Zealand's current account deficit in 1974 was \$NZ1.3 billion—nearly 15% of the GNP; the external debt was \$NZ863 million in 1975 and \$NZ2.447 billion in 1978.¹² So, when the Labour leader died in 1974, the National Party easily won the 1975 elections. The National Party remained in power for nine years, despite their inability to reduce trade deficits, inflation or unemployment, and despite their lack of a coherent economic plan. But, in 1984 the Labour Party was re-elected; they began the era of economic reform that continues today.

2.3. Economic Reform

In New Zealand, the Treasury provides briefing papers on the state of the economy for a newly elected government. In the briefing papers of 1984, New Zealand was compared, for the years 1974 through 1983, with the average member of the Organisation for Economic Co-Operation and Development (OECD, to which New Zealand belongs), and found wanting. The briefing papers claimed that New Zealand's average annual growth rate was lower than the OECD average, and that it's average annual inflation rate was higher than the OECD average. In addition, unemployment had dramatically increased (from about 1% to about 11%), and government debt—both domestic and foreign—had risen sharply, with a concomitant rise in debt servicing costs.¹³ In addition, the briefing papers continued, past governments had used specific controls rather than general policies to "fix" New Zealand's economic problems—with the result that they had fixed nothing at all.

Among the ineffective controls the government had used, the briefing papers explicitly included "unwarranted monopolies in the communications sector" and "underpricing of state-

¹¹Dordick, op. cit, pp. 426-427.

¹²*Ibid*, p. 426.

¹³McCabe, P.G. "New Zealand: The Unique Experiment in Deregulation." In Noam, E., Komatsuzaki, S. & Conn, D.A., eds., *Telecommunications in the Pacific Basin: An Evolutionary Approach*. New York: Oxford University Press, 1994; p. 398.

supplied goods and services." The Treasury pointed out that the state-owned enterprises accounted for more than 12% of the GDP, and consumed more than 20% of the gross investment.¹⁴ The Treasury identified three factors that were at least partly responsible for the poor performance of the state-owned enterprises:

- (1) The lack of clear, non-conflicting objectives for the enterprises;
- (2) An operating environment that included both special government assistance and government restraint of competition;
- (3) Performance monitoring arrangements that led to incentives that were not necessarily in society's—or the government's—best interest;¹⁵

The Treasury's briefing indicated that it was essential to improve the efficiency of the state-owned enterprises; they made several suggestions to that end: First, they recommended the separation of policy and regulatory functions from the state-owned enterprises. Second, they suggested that explicit subsidies, targeted for specific social objectives, are preferable to the (then current) system of general underpricing of all goods and services. Finally, they suggested that efficiency would be improved if the government used standard, commercial, accountability and management methods.¹⁶

In early 1985, the Finance Minister tried to formulate a unified approach to the stateowned enterprises, but did not get cabinet approval for the undertaking. However, in late 1985, after a forecast of an increased budget deficit for the 1987 fiscal year, the government conducted a comprehensive review of government expenditures. As part of the review, the Associate Finance Minister decided that the Post Office was not "customer driven," and the government decided to commission two reviews of the Post Office: one of its banking activities, and the other of its postal and telecommunication services. The report on

¹⁴Ibid.

¹⁵Ibid.

¹⁶*Ibid*, p. 399.

telecommunication was conducted by a business man (Roy Mason) and an accountant (Michael Morris), and became known as the Mason-Morris Report.

3. The Corporatization and Privatization of Telecommunication

The Mason-Morris Report was presented to the government in February, 1986, and was published in April, 1986. It recommended that the Post Office be divided into three separate business units—Telecommunication, Postal Services, and Banking—by April, 1987. Each division, the report argued, should be completely independent, with its own chief executive officer. Each division was to be responsible for its own day-to-day operations, and so would be able to respond quickly to changing market conditions. In addition, Mason and Morris distinguished between network services and enhanced services. They recommended that the latter be deregulated, but that basic telephony remain a monopoly service, provided by the corporatized Telecom Corporation of New Zealand ("Telecom"). They further suggested that prices should be related to costs and market conditions, that cross subsidies should be progressively eliminated (except for averaging of costs for urban and rural residential users), and that monopoly services should have regulatory price supervision.¹⁷

The government substantially accepted the Mason-Morris report; they announced, in May, 1986, that the Post Office would be restructured and separated into three independent, government-owned, "companies." In July, 1987, the Telecommunications Act 1987 was passed, mandating the division of the Post Office as Mason-Morris recommended. The Act transferred regulatory services (such as spectrum management) to the Radio Regulatory Service, which was moved from the Post Office to the Department of Trade and Industry. The Act also maintained the prohibitions against competition in network services.¹⁸ Telecom was also subject to the State-Owned Enterprises Act 1986, which requires that state-owned

¹⁷*Ibid*, pp. 399-400; Commerce Leaflet 5, *op. cit*, p. 3.

¹⁸Dordick, op. cit., p. 433.

enterprises be run to be as profitable and efficient as comparable private businesses. In addition, the Act requires that subsidies be made explicit: If the government wishes for Telecom to provide a service that it would not otherwise provide, the government must pay the cost of providing that service.

3.1. The Corporatization of Telecom

On 1 April 1987, Telecom Corporation of New Zealand Ltd. came into existence. Telecom had about 25,000 full time employees, and it took over the Post Office's role as the monopoly provider of public switched telephone services. (Telecom has been systematically reducing the number of its employees: there were 15,000 in 1992,¹⁹ there were 12,600 in 1993,²⁰ there were 9,600 in June, 1994,²¹ and Telecom plans to further reduce their work force to 7,500 by 1998.²²) Since the valuation of the Post Office's (former) telecommunication assets had not yet been completed, Telecom operated under a special license from the postmaster general. Telecom's assets were eventually valued at \$NZ3.2 billion, and on 31 March 1988, their ownership was transferred to Telecom.²³ Telecom's Articles of Association include three restrictions designed to maintain the following commitments:

11.4.2.1:

Local free calling will remain a tariff option available to all residential customers;

11.4.2.2:

The Standard Residential Rental for a phone line will not rise faster than movements in the Consumer Price Index unless the profits of Telecom's Regional Operating Companies [see below] are unreasonably impaired;

¹⁹McCabe, op. cit., p. 401.

 ²⁰South China Morning Post, "Shares Soar as Telecom Surprises." February 17, 1993; Business, p. 8.
²¹Commerce Leaflet 5, *op. cit.*, p. 5

Commerce Leaner 5, *op. cn.*, p. 5

²²South China Morning Post, op. cit.

²³McCabe, op. cit., pp. 400-401.

11.4.2.3:

Phone line rentals for residential customers in rural areas will not be higher than in the cities, and the residential service will remain as widely available as it is at present.²⁴

In June, 1988, Telecom announced that it was restructuring itself into several subsidiary companies in order to enable competitors to interconnect, once competition was legally permitted. Telecom was transposed into four regional operating companies to provide local customer services, Telecom Networks and Operations Ltd. to provide network and toll services to the regional companies, Telecom New Zealand International Ltd. to provide international toll services, and several subsidiaries for provision of value added services.²⁵

At about this time (in June, 1987), the government hired a consulting company, Touche Ross Management Consultants, to study Telecom and the desirability of competition in additional telecommunication markets (Mason-Morris had recommended competition only in customer premise equipment and indoor wiring)—in particular, network services. The Touche Ross report found that Telecom's operation was engineering driven rather than market driven, that its efficiency was lower than that of "the best practice of overseas telephone companies," and that its management was outdated and inadequate. In addition, Touche Ross found cross subsidies between access (local) and toll (long distance) charges, and between access charges for different customers. They claimed that increased efficiency and reduced cross subsidies could halve toll charges—and double access charges. Finally, Touche Ross claimed that competition in network services was possible and sustainable; any losses of economies of scale and scope would be more than compensated for by increases in Telecom's efficiency that would result from competitive pressure. The government accepted the Touche

²⁴New Zealand Ministry of Commerce, Communications Division ("Commerce Leaflet 1"). "New Zealand Regulatory Environment for Telecommunications." *Telecommunications Information Leaflet No.* 1, 1994, p. 6.

²⁵McCabe, op. cit., p. 402.

Ross report and published it, and announced, in December, 1987, that competition would be permitted in network services, early in 1989.²⁶

3.2. The Privatization of Telecom

In 1987, the government claimed that corporatization was *not* a step toward privatization—its purpose was to attain gains in efficiency and financial performance. And, although economic ministers believed that privatization would result in further increases in efficiency, theirs was not a popular position. However, New Zealand's deficit was growing—debt service accounted for 20% of government expenditures in 1987. In December, 1987, the government announced a plan to retire one-third of the debt (\$NZ14 billion) by 1992; since the Labour government was unwilling to cut social services, it became obvious that major state-owned enterprises (such as Telecom) would have to be sold to reach that goal.²⁷

In March, 1990, Parliament exempted Telecom from the State-Owned Enterprises Act, which legalized its sale. In May, 1990, the Telecommunications Disclosure Regulations, which mandated that Telecom disclose certain information—in order to enable future competition—were passed, and they took effect in July, 1990. The sale of Telecom was announced in February, 1990, with the following ground rules:

- The government was offering 100% of Telecom for sale, but would consider offers for only part of the corporation;
- (2) A maximum of 49.9% of the corporation could be bought by an overseas purchaser, but the government would permit 100% temporary ownership, with a reduction to under 50% during the subsequent three years;
- (3) A minimum of \$500 million worth of shares must be made available, by public offering, on the New Zealand stock market;

²⁶Commerce Leaflet 5, op. cit., p. 4.

²⁷McCabe, *op. cit.*, pp. 403-404.

(4) The government maintained a "Kiwi" (golden) share in Telecom, with special voting rights, to enforce the limitation on foreign ownership, and to ensure that Telecom honored its residential service commitments.²⁸

The announcement of sale resulted in nineteen expressions of interest; bids were invited, and the list was reduced to five during the due diligence phase. In June, 1990, the successful bidder was announced: a consortium of Ameritech and Bell Atlantic bid \$NZ 4.25 billion (about \$NZ 1.82 per share), for 100% of Telecom, effective 1 September 1990. Ameritech and Bell Atlantic immediately sold 5% to each of two New Zealand companies (Fay, Richwhite and Company Ltd, and Freightways Holdings Ltd) from whom they had received advice during Telecom's sale.²⁹

It was understood that Ameritech and Bell Atlantic would reduce their 90% ownership to 49.9% (or less) within three years. In 1991, they sold about 30% of Telecom's shares on the stock market, for \$NZ 2.00 per share (approximately 10% more than they paid in 1990),³⁰ and in March, 1993, (shortly after the deadline for reduction to under 50% overseas ownership had been extended to September, 1994), Bell Atlantic sold an additional 4% of Telecom for \$NZ 2.72 per share (about 36% more than the shares they sold in 1991, and nearly 50% more than their original purchase price in 1990).³¹ In November, 1994, Telecom's stock was trading at \$5.65 per share.³²

3.3. Competition in New Zealand's Telecommunication Market

In November, 1990, Clear Communications Ltd. was created, as a result of the merger of two consortia. One consortium consisted of MCI Communications, Todd Corporation (a

²⁸Commerce Leaflet 1, op. cit., p. 5.

²⁹McCabe, op. cit., pp. 404-406.

³⁰*Ibid*, p. 406.

³¹Corrigan, T. "Bell Atlantic Cuts Stake in Telecom NZ," *The Financial Times*, 12 March 1993, p. 29.

³²Louisson, S. "Fast Growing Telecom NZ Signals New Expansion." *Reuters World Service*, 3 November 1994.

New Zealand investment firm) and New Zealand Rail; the other consortium consisting of Television New Zealand and Bell Canada Enterprises.³³ Clear was formed to use New Zealand Rail's fiber optic cables, in exchange for the use of which New Zealand Rail maintained an option to buy shares in Clear.³⁴ Clear began service in April, 1991; by August, Clear had 10,000 customers (of a total of 1.5 million telephone subscribers);³⁵ by April, 1992, Clear had about 40,000 customers, and about 9% of the domestic toll market,³⁶ and in 1994 Clear had about 20% of the toll market.³⁷

BellSouth New Zealand, a subsidiary of BellSouth International, has provided digital cellular (GSM) telephone service since July, 1993, in competition with Telecom's existing cellular service.³⁸

Sprint signed an interconnection agreement with Telecom on 28 March 1995. Sprint currently provides international toll service, but is expected to announce additional services in the near future.³⁹ There are additional competitors, including Netway Communications and Optus Communications Pty Ltd, but they are, currently, primarily in the data, value added, and/or business markets, and (once more, currently) do not intend to be general service providers.

³³Market Reports, 17 March 1994, Embassy Wellington.

³⁴Hall, T. "World Telecommunications 30; From Monopoly to Competitor—New Zealand." *The Financial Times*, 7 October 1991, p. XXX.

³⁵Ibid.

³⁶McCabe, *op. cit.*, p. 408.

³⁷Saunders, M. "Telecommunications Regulation in New Zealand." *Telecommunications Policy*, 18(6), 1994, pp. 495-496.

³⁸Galt, D. "Telecommunications Regulatory Structures in New Zealand." Paper presented at *International Telecommunications Society Interconnection Workshop*, 10-12 April 1995, Wellington, N.Z.

³⁹Crook, J. "Competition and Interconnection: Successes and Challenges." Paper presented at *International Telecommunications Society Interconnection Workshop*, 10-12 April 1995, Wellington, N.Z., p. 4.

4. The State of Competition in New Zealand

So, is there competition in New Zealand's telecommunication market? Does competition—or the threat of competition—provide adequate regulation for the industry? This section will discuss two major aspects of competition in New Zealand. First, to what extent does true competition, or at least the threat of true competition, currently exist? Second, if competition does not exist, to what extent is interconnection between the networks of competitive entrants and that of the dominant carrier—which is generally considered essential for the successful competition, at least initially—fairly and reasonably available?

4.1. Competition and the Theory of Contestable Markets

According to classical economic theory, in a free and competitive market, a firm strives to further only its own self-interest, but is "led by an invisible hand" to maximize society's welfare.⁴⁰ According to the theory of market contestability, which was formally proposed in the early 1980s by W.J. Baumol, J.C. Panzar and R.D. Willig,⁴¹ an industry need not be fully competitive (indeed, it may be monopolistic), but if it is contestable (if competitive entry is costless) then the *threat* of competitive entry may induce the industry's player(s) to behave in the economically optimal (welfare maximizing) manner. In particular,

A contestable market is one into which entry is absolutely free, and exit is absolutely costless [emphasis in original]. We use "freedom of entry"... to mean... that the entrant suffers no disadvantage in terms of production technique or perceived product quality relative to the incumbent, and that potential entrants find it appropriate to evaluate the profitability of entry in terms of the incumbent firms' pre-entry prices. In short, it is a requirement of contestability that there be no cost discrimination against entrants. Absolute freedom of exit, to us, is one way to guarantee freedom of entry. By this we mean that any firm can leave without any impediment, and in the process of departure can recoup any costs incurred in the entry process. If all capital is salable or reusable without loss other than that corresponding to normal user cost and depreciation, then any risk of entry is eliminated.⁴²

⁴⁰Smith, A. *An Inquiry into the Nature and Causes of the Wealth of Nations*. New York: The Modern Library. 1937, p. 423.

⁴¹Baumol, W.J., Panzar, J.C. & Willig, R.D. *Contestable Markets and the Theory of Industry Structure.* San Diego: Harcourt Brace Jovanovich, 1982.

⁴²Baumol, W.J., "Contestable Markets: An Uprising in the Theory of Industry Structure." *American Economic Review*, 72(1), 1982, pp. 3-4.

The beauty of a contestable market, according to Baumol, is that

... there are a number of industries which undoubtedly approximate contestability even if they are far from perfectly competitive. In our analysis, perfect contestability, then, serves not primarily as a description of reality, but as a benchmark for desirable industrial organization which is far more flexible and is applicable far more widely than the one that was available to us before.⁴³

Applying this definition to New Zealand, the telecommunication market is contestable if either (1) entry is free; or (2) the cost of entry can be recouped upon exit. It is clear that entry is not free; indeed, BellSouth's Director of Strategic Planning has recently estimated that the cost of entry to the New Zealand telecommunication market is at least \$NZ 250 million.⁴⁴ Whether these costs can be recouped upon exit is more difficult to determine. There are several scenarios in which they could be: for example, if a competitive entrant exits because of insufficient capital, a better capitalized competitor may purchase their physical plant and expect to succeed where the original entrant did not. Alternatively, if a competitive entrant expands the market and then exits because of high labor costs, the incumbent if it has lower labor costs than its (former) competitor—may purchase the competitor's assets and serve the expanded market.

The above hypothetical scenarios, however, have the flavor of grasping at straws. Intuitively, it seems much more likely that a competitor in the telecommunication market will have some significant investment in what the incumbent would consider redundant facilities—such as cable, switches and buildings—which would be of no use to the incumbent, and which, therefore, would not allow the competitor to recoup entrance costs upon exit. In addition, if a competitor were selling physical plant in order to facilitate exit from a market, the sale—a "going out of business sale"—is unlikely to yield one-hundred cents on the dollar to the competitor, even if an incumbent has some use for the facilities. Finally—and perhaps

⁴³*Ibid*, p. 2.

⁴⁴Davies, M. Paper presented at *International Telecommunications Society Symposium on Strategic Alliances* and *Interconnection*, 9-11 January 1995, Boulder, CO.

most important—in order for the market to be truly contestable, the entrant has to know *upon entrance* that there will be no entrance costs that cannot be recouped upon exit. Even if such costs can be recouped 50%, or 75%, of the time, an entrant would not be behaving rationally if he or she were to equate a probability of costless exit of 0.5, or 0.75, with a probability of costless exit of 1.

In conclusion, it does *not* seem that the New Zealand telecommunication market is truly contestable. Therefore, it would not be surprising to note that, until there is a truly competitive market, the free market's invisible hand will perform in a less than ideal manner in regulating the behavior of telecommunication firms in New Zealand.

4.2. Competitive Entry and Interconnection

Telecommunication in New Zealand has no industry-specific regulation; it is governed, as are all other New Zealand industries, by the Commerce Act 1986 (amended in 1990), which includes anti-trust provisions that are intended to foster competition. In particular, Part II (§27) of the Act prohibits collective action with the purpose, effect, or likely effect of restricting, preventing or deterring competitive entry into, or eliminating a competitor from, a market. Part III (§36) is intended to prevent unilateral action by a dominant firm that strengthens its dominant position, unless such action can be justified by public benefit. Part IV (§53) permits the government to impose price controls on specific firms, on the industry in general, or even on particular products and services, if the Minister of Commerce finds that effective competition is limited or does not exist, and if such controls will benefit consumers or suppliers.⁴⁵

When a monopoly telecommunication market is opened to competition, the effectiveness of the competition is critically dependent upon the terms and availability of interconnection

⁴⁵Blanchard, C. "Telecommunications Regulation in New Zealand: How Effective is 'Light-Handed' Regulation?" *Telecommunications Policy*, 18(2), 1994a, pp. 157-158; McCabe, *op. cit.*, pp. 410-411.

between the competitor and the dominant firm. This is because a competitive entrant will rarely have the resources to duplicate wiring to each subscriber's premises (the "local loop"); it is this portion of the telecommunication market that is often considered a natural monopoly. It is clearly in the self-interest of the dominant carrier to retard, restrict, or overcharge for interconnection (thereby limiting competitive pressure), and it is clearly in the self-interest of a competitive entrant to gain immediate, inexpensive interconnection thereby having no network disadvantage compared with the dominant carrier:

The modern precedent and practice in competitive telecommunications interconnection had become established [by AT&T's behavior with respect to MCI's requests for interconnection, in the U.S., in the 1970s], namely: (i) the incumbent monopolist or dominant carrier will invariably act in an exclusionary manner towards the new entrant; (ii) normal commercial negotiations between the parties will break down, requiring intervention by the regulator or legislature.⁴⁶

New Zealand's Commerce Commission, which has responsibility for enforcing the Commerce Act, recognized, at least as early as 1989, that interconnection was essential for effective competition in telecommunication. Nevertheless, Telecom and its potential competitors have a history of difficulty in negotiating interconnection agreements. For example, New Zealand Rail, which owned fiber optic cables and wished to provide toll service, began interconnection negotiations with Telecom in April, 1989; the negotiations resulted in a definitive agreement (with Clear, which had absorbed New Zealand Rail's telecommunication interests) only in March, 1991.⁴⁷ This agreement was negotiated by the two parties alone, with no government assistance or intervention. However, interconnection between Clear and Telecom is not yet settled: when Clear decided to provide local service in central business districts, it began a new set of interconnection negotiations with Telecom. These negotiations have not yet been concluded to the mutual satisfaction of the two parties, despite court actions that have progressed all the way to the Judicial Committee of the Privy Council in London (New

⁴⁶Walker, D. & Solomon, J. "The Interconnection Imperative: *E pluribus unum*." *Telecommunications Policy*, 17(4), 1993, p. 260.

⁴⁷McCabe, op. cit., pp. 407-408.

Zealand's "Supreme Court").48

BellSouth has also had difficulty reaching an interconnection agreement with Telecom. BellSouth acquired a cellular telephony spectrum band in 1990, and was still having difficulty negotiating an interconnection agreement with Telecom in 1992. Eventually, Telecom agreed to "expedite" the negotiations in return for another spectrum band for its existing cellular service.⁴⁹ The Director of Strategic Planning at BellSouth recently characterized this series of events as one in which Telecom managed to reach an interconnection agreement at just about the same time that it managed to provide a service that would directly compete with the one for which BellSouth was seeking interconnection.⁵⁰

4.2.1. The Efficient Component-Pricing Rule

As mentioned above, Clear Communications eventually reached an interconnection agreement with Telecom for providing toll (long distance) service, but has been less successful in negotiating an interconnection agreement for providing local service in the central business district market. According to Clear, terms offered by Telecom were neither reasonable (they initially included the imposition of a special dialing code and the refusal to list Clear customers in the white or yellow page directories) nor appropriately priced. Clear sued Telecom in 1992, under the Commerce Act 1986, claiming that Telecom was using its dominant position to restrict competitive entry. During the trial, Telecom obtained expert advice from several U.S. economists, including W. J. Baumol and R. D. Willig.⁵¹ The recommendations of Baumol and Willig included adopting what they called the efficient component-pricing rule (ECPR) for interconnection, which states that "the price of an input should equal

⁴⁸Blanchard, C. "Telecommunications Regulation in New Zealand: The Court of Appeal's Decision in *Clear Communications v Telecom Corporation*," *Telecommunications Policy*, 18(9), 1994b, pp. 725-733.

⁴⁹Blanchard, op. cit. (1994a), p. 159

⁵⁰Davies, op. cit.

⁵¹Blanchard, op. cit. 1994a, p. 160.

its average-incremental cost, including all pertinent incremental opportunity costs."52

Clear objected to the inclusion of "incremental opportunity costs" in its interconnection cost, for the following reason: Opportunity costs refer to profit lost by the incumbent when it sells an input (access to its network, in this case) to a competitor rather to one of its own retail customers. And, Clear contended, in Telecom's case, some of the opportunity costs were, in fact, *monopoly rents*: profit that Telecom received only because of its monopoly position—exactly the position that Clear's entrance into the market was designed to change. So, Clear contended, if Telecom were permitted to charge Clear for its lost monopoly rent, then Clear's prices would necessarily be higher than its efficiency (presumably greater than Telecom's) would otherwise require. Telecom claims, on the other hand, its proposed interconnection price, which is based upon its local service pricing, cannot possibly include monopoly rent, because it obtains negative profit (*i.e.*, it loses money) on its local service—largely because of its universal service ("Kiwi share") obligations.⁵³

The issue of positive or negative profit from local service is a complex one. Whether that profit is positive or negative is, of course, critically dependent upon how costs that are *common* to local and other—for example, long distance—services are assigned to the various services to which they are common. In the United States, for example, the FCC accepted an assignment (by AT&T) of 75% of the non-traffic sensitive common costs (which includes the wire drop to each subscriber's premises, which is probably *the* dominant cost of providing telephone service) to local service, and only 25% to long distance service.⁵⁴ It is unclear what sense such an assignment makes; it would seem more justifiable to assign common costs on the basis of relative minutes of use, for example. (Such a scheme was proposed in the United States in 1980, when it became clear that competition in inter-exchange service would be

⁵²Baumol, W.J. & Sidak, J.G. "The Pricing of Inputs Sold to Competitors." *The Yale Journal on Regulation*, 11(1), 1994, p. 178.

⁵³Crook, op. cit. pp. 19-20.

⁵⁴Walker & Solomon, op. cit. p. 250.

allowed, and before the divestiture of AT&T.)⁵⁵ Nevertheless, Telecom, in claiming negative profit from provision of local exchange service, provides an itemized listing of its revenues from local service, but provides only a single line item called "Operating costs;"⁵⁶ Telecom does not explain how it determines those costs of local service.

The New Zealand High Court, in December, 1992, sided with Telecom by accepting the ECPR for determining interconnection costs. However, Clear appealed this decision, and it was reversed by the New Zealand Court of Appeal, which agreed with Clear's claim concerning opportunity costs:

I cannot accept that the objectives of the Commerce Act are served by a method of pricing that secures the profits of a firm in a dominant position. Further between these parties such an agreement potentially places Telecom in a position to secure from Clear a subsidy for Telecom's toll business needed to overcome the vigorous price competition from Clear in that area. That cannot be right.⁵⁷

As noted above, the matter was appealed to the Judicial Committee of the Privy Council in the United Kingdom. (The Privy Council was the final Court of Appeal for members of the British Empire. New Zealand is one of the few countries that retains the Privy Council in this capacity.⁵⁸) The Privy Council reversed the Court of Appeal and sided with Telecom; they found that the ECPR was an appropriate rule for pricing interconnection.⁵⁹ As a result, Clear Communications has formally requested the government's assistance in negotiating interconnection agreements with Telecom.⁶⁰

In discussing the Court of Appeal's rejection of Telecom's use of the efficient component-

pricing rule on the grounds that it may force Clear to contribute to Telecom's monopoly rents,

⁵⁹Reuters, Limited. "Telecom Says Privy Council Affirms Offer." *Financial Report*, 20 October 1994.

⁶⁰Crook, op. cit., p. 10.

⁵⁵Brock, G.W. *Telecommunication Policy for the Information Age*. Cambridge, MA: Harvard University Press, 1994, pp. 178-179.

⁵⁶Crook, op. cit., p. 15.

⁵⁷Clear Communications Limited v The Telecom Corporation of New Zealand (1993) 5 TCLR 436. Cited in Blanchard, 1994b, op. cit., p. 730.

⁵⁸Patterson, R., Savin, B. and Davies, M. "Light-Handed Regulation of Telecommunications in New Zealand: The New Frontier?" Paper presented at *International Telecommunications Society Interconnection Workshop*, 10-12 April 1995, Wellington, N.Z.

Baumol argues that it is not the ECPR that should be rejected:

The decision of the Court of Appeal of New Zealand illustrates a frequent objection to the efficient component-pricing rule. The complaint is that the rule is a means of ensuring that the landlord can continue receiving any monopoly profits it has been able to earn on the final product. Suppose that, in the absence of the tenant, the landlord has monopoly power in the final-product market and earns a high rate of profit on sales. If, by supplying the input to the tenant, the landlord permits the tenant to take away some of those profitable sales, then the monopoly profit on those foregone final-product sales is indeed an opportunity cost to the landlord. According to the efficient component-pricing rule, the tenant should be required to compensate the landlord for that loss. This ensures the monopoly earnings of the landlord. It also undercuts the tenant's power to introduce effective competition into the final-product market and, thereby, its ability to reduce prices to their competitive levels.

All this is true, but the villain is not the efficient component-pricing rule. The real problem is that the landlord has been permitted to charge monopoly prices for the final product in the first place. Had the ceiling upon final-product prices been based on stand-alone cost, which . . . it should be, the landlord could never have earned a monopoly profit in this regulatory scenario. The error, therefore, is the failure to impose the stand-alone cost ceiling on the final-product price, not the use of the efficient component-pricing rule.⁶¹

It is easy, of course, for a person to claim that someone else's practice, not their theory, is to blame for a particular situation. However, virtually all telecommunication markets in the world either are or have been dominated by monopoly service providers. It is not clearly useful to be told that the ECPR is a good rule for pricing interconnection, but that it can only be used after the (former) monopoly provider's prices have lost all traces of monopoly rent. This has the appearance of a vicious circle:

- Competition is desirable, because it will (among other things) eliminate monopoly rent;
- (2) Interconnection is necessary for competition;
- (3) Interconnection should be priced according to the efficient component-pricing rule;
- (4) Monopoly rent must be eliminated before the ECPR can be applied;

So, we need competition to eliminate monopoly rent, but in order to have competition, we

need the ECPR, which requires that monopoly rent be eliminated!⁶²

⁶¹Baumol & Sidak, op. cit., pp. 196-197.

⁶²In fact, it is possible that competition may come into existence *without* interconnection—at least, without interconnection between dominant and non-dominant players. This possibility will be considered briefly, below.

4.2.2. Problems With the Efficient Component-Pricing Rule

Using the efficient component-pricing rule as a solution to the problem of interconnection is not straightforward. First of all, as Baumol and Sidak (perhaps somewhat blithely) note, monopoly rent must be eliminated from the dominant firm's prices. This is non-trivial, even if competition is *not* the only means of eliminating monopoly rent: often, neither regulators nor the firms themselves know exactly what the stand-alone costs of each of the various products and services is, so they probably cannot simply look at the firm's books and pick out the marginal cost, or the average incremental cost, of each one. But there are other problems with the ECPR, as well. This section will deal with three such problems, in turn.

4.2.2.1. What Is the Lost Opportunity Cost in an Expanding Market?

The notion that each unit of income (and, presumably, profit) earned by a competitive entrant necessarily means an equivalent unit of income (and profit) subtracted from the incumbent—and, therefore, lost opportunity—is intuitively problematic, and demonstrably false. First, it seems clear that the telecommunication market is expanding. In such a market, an incumbent can retain a progressively smaller share of a progressively larger market and lose (hypothetical) *potential* profit, and no *actual* profit whatsoever. Second, it is reasonable to assume that the entry of competitors into a formerly monopolistic market is likely to (1) increase public awareness of goods and services in that market (via advertising by an entrant who has, presumably, no name recognition); (2) lower prices for some goods and services by the entrant, in order to capture some market share; and (3) induce the incumbent to lower prices in response to competition. All of these occurrences will tend to increase the size of the market; even if all of this increase is allocated to the entrant, it is difficult to argue that the incumbent has incurred any opportunity cost until it can be shown that the incumbent has lost existent revenue. Finally, in the quarter ending in June, 1994, Telecom reduced its prices 11 percent, but increased its number of national calls by 15.1 percent, and of international calls by 17.6 percent.⁶³ Even if Clear's market share during this period rose to 50% (which it did not), it is difficult to see how Telecom can claim that this resulted in any opportunity lost to them.

4.2.2.2. What Is the Incremental Cost of Call Termination?

Neither Clear nor the New Zealand courts have disagreed with the suggestion, included in the ECPR, that the interconnector should pay the dominant firm's incremental coststhose costs incurred by the dominant firm as a result of carrying traffic of the entrant. But, what are the incremental costs of interconnection? Baumol and Sidak develop the ECPR with a railroad example: one railroad (the dominant firm) has tracks running from A to B to C, and another (the entrant) has tracks only from B to C, but wishes to carry freight from A to C, via B. The issue is, then, how should the dominant firm price the use of its tracks from A to B by the entrant. In the case of railroads, it is clear that there is some usage-related cost: trains are heavy; the friction of wheels, and the weight of a passing train, cause wear and tear on the rails. In telecommunication, however, does the passage of electrons through copper (or of photons through fiber) shorten the life of the copper (or fiber)? Now that switches are digital, what wear and tear is caused by switching a call? Is there any incremental cost of the 1001st phone call over the 1000th? It seems blatantly unfair for an incumbent to require a potential entrant to pay for each minute of use (as interexchange carriers in the U.S. currently do to local exchange carriers) when there is no incremental cost for each minute of use. In other words, while it is fair for an entrant to pay to the incumbent the incremental cost of carrying its traffic, it is not obvious that such cost, in the telecommunication market, is non-zero.

⁶³Hall, T. "Telecom NZ Boosts Net Earnings by 17%." The Financial Times, 5 August 1994, p. 19.

4.2.2.3. What is the Nature of the Incumbent's Network Ownership?

Finally, the debate about interconnection costs assumes that the network is somehow properly owned by the incumbent, and so it is proper for the incumbent to pass on to the entrant any costs incurred by the entrant's entry. (Baumol, for example, talks about a landlord and tenant, with the clear presumption that such a relationship legitimately exists.⁶⁴) But, how did the network come to be owned by the incumbent? Clearly, it was bought, at the time of privatization. However, was it bought at a fair price? Or, to rephrase the question, did the incumbent pay for the network what it would have cost the incumbent—or what it would cost a competitor—to build a comparable network? If not, then one could argue that the incumbent's ownership of the network has been subsidized by the government—either directly, in actually building the network, or indirectly, in approving rates that permitted the (monopolistic) incumbent to recoup its construction and deployment costs (and, perhaps, then some) with virtually no risk. In this case, it seems reasonable that a competitive entrant should pay, at most, costs involved with only the *un*subsidized portion of the network.

4.2.3. Alternatives to the Efficient Component Pricing Rule

There is an growing literature on alternatives to the ECPR—a complete treatment of which is beyond the scope of this paper. The remainder of this section will first briefly mention some of the alternatives that have been treated by others. Then, it will propose an alternative that is based upon the idea that capacity rather than use is the dominant aspect of a network's cost. This section will conclude with a brief consideration of a type of proposed alternative to the ECPR which is really only an incomplete solution, at best.

⁶⁴Baumol & Sidak, op. cit., pp. 196-197.

4.2.3.1. Recently Proposed Alternatives to the ECPR

Recently, Laffont and Tirole have proposed a system of "global price caps."⁶⁵ According to this proposal, intermediate goods—such as interconnection—would be considered as final goods to the extent that they would *all* would be placed in a single market basket, subject to price cap regulation.

Alternatively, Noam has proposed what he calls "third party neutral transmission."⁶⁶ According to this principle, networks are free to interconnect or not interconnect, but once one network interconnects with another, the network granting interconnection cannot discriminate among the different customers of the network to which it granted interconnection. This solves the interconnection problem, according to Noam, because it permits arbitrage. In other words, Telecom may refuse to directly interconnect with Clear, but any one of Telecom's customers—each of whom is a potential neutral third party—may choose to "interconnect with" (resell service to) Clear; under third party neutral transmission, Telecom cannot refuse to carry Clear's traffic.

4.2.3.2. Pricing Interconnection According to Desired Network Capacity

It seems clear that the major cost of telecommunication is capacity: when building a network, a firm designs it for a certain capacity—after which the incremental cost of adding calls is very low, until additional capacity must be added. In this case, it seems fair for a competitive entrant to pay for the portion of the incumbent's capacity which the entrant uses or requests. For example, a reasonable argument can be made for sharing the costs of purchasing, installing, and maintaining shared physical plant. These costs are virtually all *fixed* costs—they are not traffic sensitive or usage sensitive, once the capacity exists. So, one way

⁶⁵Laffont, J.-J. and Tirole, J. "Creating Competition Through Interconnection: Theory and Practice." Paper presented at *International Telecommunications Society Interconnection Workshop*, 10-12 April 1995, Wellington, N.Z.

⁶⁶Noam, E. Paper presented at *International Telecommunications Society Symposium on Strategic Alliances* and *Interconnection*, 9-11 January 1995, Boulder, CO.

for an entrant to share costs is by purchasing capacity from the incumbent. This is similar to the manner in which data network traffic will probably be priced in the U.S.; it can be thought of as a competitive entrant essentially leasing lines from the incumbent, but with the addition of a connection to the incumbent's switched network. Alternatively, an incumbent and an entrant could share common costs according to their relative numbers of subscribers, or their relative numbers of Erlangs—with, perhaps, consideration given to relative use during peak and off-peak periods. A major advantage of either of these suggestions, compared with the efficient component-pricing rule, is that they both make it clear that, to the extent that there is an incremental cost of providing calls, it is not the calls and their duration that have an incremental cost, but, rather, the *capacity* to carry those calls—whether they are placed or not.

4.2.3.3. Some Proposed Incomplete Solutions

Recently, Clear Communications has requested that the government become involved in negotiating interconnection, because—Clear claims—neither the courts nor Telecom have provided a mechanism for negotiating a fair interconnection agreement. In addition, Bell-South's Director of Strategic Planning has proposed, in effect, binding arbitration, with a set of strict time and performance guidelines, for interconnection negotiations.⁶⁷ Such proposals are probably predictable (". . . normal commercial negotiations between the parties will break down, requiring intervention by the regulator or legislature."⁶⁸), and they are useful in that they elucidate rules with which reasonable people are likely to agree, once the rules are brought to those people's attention. Unfortunately, however, this type of proposal also largely begs the question. For, even if the government, or a mutually acceptable arbitrator, intervenes, on what principles will an interconnection pricing agreement eventually be reached?

⁶⁷Patterson, Savin & Davies, op. cit., pp. 28-33.

⁶⁸Walker & Solomon, op. cit., p. 260.

This paper has tried to limit itself to a consideration of the principles, rather than the mechanisms, for reaching such agreement.

4.2.4. The Interconnection Dilemma

So long as competitive entrants cannot, or do not, duplicate the incumbent's infrastructure, interconnection is essential for competition. Pricing interconnection, however, is truly a dilemma. For, on the one hand, it is reasonable, and standard business practice, to consider an incumbent that owns its infrastructure to be entitled to a price for interconnection that is equal to its cost of carrying the entrant's traffic plus its lost opportunity for doing so. (This is the efficient component-pricing rule.) On the other hand, however, this means that the incumbent is entitled to treat a competitive entrant exactly as it would treat any other ("retail") customer. And it would be extremely difficult, under these conditions, for a competitive entrant to succeed. For, in order to successfully compete with the incumbent, an entrant must be able to at least offer the same service for the same price (typically, it will have to offer the same service for a lower price, or superior service for the same price). And, if the entrant is paying both the incremental cost and the opportunity cost ("profit") of the incumbent's part of its service, then in order for the entrant to price its total service at or below the incumbent's price, it will have to have costs that are enough below the incumbent's (*i.e.*,, it will have to be sufficiently more efficient than the incumbent) to offset the opportunity cost that it must pay the incumbent—and, of course, pass on to its customers. (A variant of this argument, more formally stated, has been made recently by Albon.⁶⁹)

Even Baumol is, at some level, aware the existence of this dilemma. On the one hand, he has proposed the efficient component-pricing rule:

The efficient pricing principle for product components is not only required by the competitivemarket standard for defensible behavior by an allegedly dominant firm. It is also a necessary

⁶⁹Albon, R. "Interconnection Pricing: An Analysis of the Efficient Component Pricing Rule." *Telecommunications Policy* 18(5), 1994, pp. 414-420.

condition for economic efficiency, and hence for promoting the public interest. That is, product-component prices that do not follow this principle create an incentive for inefficiency whose costs consumers have to pay.⁷⁰

On the other hand, in direct testimony before the New York State Public Service Commis-

sion, Baumol appears to recognize the nearly impossible burden that the ECPR (here called

the "Parity Pricing Rule") places upon competitive entrants:

Q: Would you consider the price of access permitted by the parity pricing rule to be inadequate of generous from the point of view of the provider of access to bottleneck facilities?

A: The price of access under the parity principle is clearly extremely generous to the LEC, because it permits the owner of the facilities, in this case the LEC, to earn from the access user a profit equal to the full profit that the LEC earns on the bundled combination of access and message transport when it sells the final toll-service product to the ultimate customer. In other words, it offers the LEC a profit on access alone, when sold to an IXC equal to the profit the LEC earns on the two services of access and transport together, when it itself supplies final product.

Indeed, the parity principle is so generous to the owners of the bottleneck that in other regulatory arenas it has been opposed vigorously by purchasers of access.⁷¹

The reason for this dilemma is that the state of affairs requiring interconnection pricing—a dominant incumbent, with one or more competitive entrants that cannot duplicate the

incumbent's infrastructure—is the result of a history of *non*-competition. If a country were

starting a telecommunication industry from scratch, with free and open competition, it would

need only to enact legislation mandating interconnection. The pricing of interconnection

would be moot, for no competitor would be dominant, so no competitor would be likely to

think that, in interconnecting with other carriers, it is providing any more service to them

than they are providing to it. So, if we are optimistic, then we can consider that the intercon-

nection pricing dilemma is transient: once the market becomes truly competitive, carriers

will agree that the cost of calculating and collecting an interconnection fee is likely to be more trouble than it is worth (literally).

⁷⁰Baumol & Sidak, op. cit., p. 181.

⁷¹Baumol, W.J. "Direct Testimony of William J. Baumol of Behalf of AT&T." Case 92-C-0665, 1994, p. 19.

Perhaps it is possible to restate the problem: Rather than being a question of "How do a dominant carrier and a competitive entrant fairly price interconnection?" it has become a question of "How does one transform a non-competitive telecommunication industry into a competitive one?" Two obvious answers are either (1) duplicated infrastructure, or (2) jointly owned infrastructure.

- (1) Duplicated infrastructure has the well-known drawback of expense—in fact, its expense is precisely the reason that competitive entrants choose interconnection in the first place. However, in the developed world there are often three infrastructures already: wireline telephony, wireless (cellular) telephony, and cable TV. Although it is not clear that further duplicating either of the wireline infrastructures will be cost-effective, it is likely that technological advances have the ability to significantly reduce the cost of a wireless infrastructure. In the U.K., regulatory policy seems to favor duplicated infrastructure: the government mandated interconnection prices paid by Mercury, for example, rise sharply once its payments to British Telecom exceed 7% of BT's "corresponding aggregate revenues."⁷²
- (2) A jointly owned infrastructure at first seems an even less likely solution than a repetitively duplicated one. But more careful examination suggests that it may not be quite as unlikely as it seems. For, the argument, above, that a competitive entrant may price interconnection by contracting to pay for a certain amount of the incumbent's capacity could be easily extended to a multi-entrant situation, with entrants purchasing rather than leasing capacity.⁷³

⁷²Walker & Solomon, op. cit., p. 267.

⁷³Perhaps it is not overly naive to think that the problem of fairly pricing the purchase of capacity will be more easily resolved than the problem of fairly pricing interconnection....

5. Summary and Conclusions

New Zealand is a relatively small country, in the South Pacific Ocean. In its recent past, New Zealand has been an archetypal welfare state: significant health, education and retirement benefits were provided by the state to all citizens, and there was a relatively flat distribution of income and wealth. Since the 1970s, however, New Zealand has endured a difficult economic climate, and has responded to this challenge with boldness and creativity. The telecommunication industry is only one of the formerly state-owned enterprises that has been privatized and deregulated. In this paper, however, it is telecommunication with which we are concerned, and it is in telecommunication that New Zealand is unique: It is the first, and probably still the only, country in the world with an essentially unregulated telecommunication industry.

The Labour government, when it began the transition from a traditional, state-owned Post, Telephone and Telegraph (PTT) to the present state of open competition, described its activities as a process of "testing the limits of non-regulation."⁷⁴ This test is of great interest not only to free-market economists and other academicians, but also to much of the world. For example, the U.S. Congress is in the midst of its second year of trying to pass legislation permitting free competition in local exchange service—legislation that would pre-empt that of the (numerous) states which currently prohibits such competition. In Europe, current European Union (EU) regulations require that member states eliminate their state-owned monopolies for basic telephony by 1 January 1998.

There are at least two lessons that the U.S. and the EU—and anyone else contemplating opening their telecommunication industry to competition—can learn from the New Zealand experiment. First, telecommunication does not appear to be a contestable market because of its high cost of entry and (probably) high cost of exit—so the threat of competition

⁷⁴Dordick, op. cit., p. 438.

is unlikely to be effective as an invisible hand to induce incumbents to behave competitively. Second, interconnection is a—perhaps *the*—major problem facing the transition to a truly competitive market. On the one hand, an incumbent (Telecom's Corporate Policy Manager) claims that there isn't really a problem:

There is no doubt that quick competitor entry to the market depends on the quality and availability of interconnection. . . . Not surprisingly, our experience was that the most contentious issue throughout [interconnection negotiations] was price. No competitor wants to pay more for interconnection than anyone else and preferably nothing at all. . . .

Interconnection does raise sophisticated technical and economic issues which are undoubtedly difficult to follow and about some of which the players may not feel able to agree. It is unrealistic, however, for disagreement to be taken as proof positive that light-handed regulation does not work. I believe it suggests the reverse. It is just that under the "light-handed" framework there is always the opportunity for public grandstanding.⁷⁵

On the other hand, a competitive entrant (BellSouth's Director of Strategic Planning) claims

that interconnection is not only unsolved, but that its lack of a solution may preclude effec-

tive competition:

New Zealand has . . . [the] world's most liberalized telecommunication marketplace. Unsurprisingly, the central issue in the development of its telecommunication industry has been interconnection, in particular for the local loop. . . .

As a result the technological choices that are made by both incumbents and new entrants take into account the likely actions and responses of other players. This is perhaps best illustrated by the example of interconnection standards, but also determines the broader allocation of resources. Incumbents are powerfully motivated to seek technological options that are backward compatible with obsolete assets in place, and which serve to perpetuate economies of scope and scale. New entrants pursue technological options which lower barriers to entry and provide sources of differentiation that can overcome incumbents' advantages of scope and scale. The need for interconnection means that there is a high degree of interdependency between the technological choices of various players.

The New Zealand experience has highlighted the danger that dominant incumbents can manipulate the economic process in ways that will both cause an immediate loss of welfare but may also, because of path dependence, have untold future consequences. In some cases dominant broad scope incumbents may be able to still Schumpeter's "perennial gale of creative destruction" so that it is little more than the mildest breeze, incapable of blowing anyone's house down, with unfortunate implications for all of us.⁷⁶

In either case, so long as interconnection remains an unsolved problem, technological

progress increases the likelihood that competitors will choose to bypass entirely the

⁷⁵Saunders, *op. cit.*, pp. 495-496.

⁷⁶ Davies, M. Op. cit.

incumbent's local loop—either via increasingly common and increasingly competitive wireless services, or via duplicate (but, presumably, higher bandwidth and higher quality) wireline services. It is unclear, in the long run, whether the cost of duplicating infrastructure will be higher or lower than the cost of less than free competition; it seems clear, in the short run, that interconnection (or, the lack thereof) presents a serious obstacle to true competition.

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