



NEW ZEALAND INSTITUTE FOR THE STUDY  
OF COMPETITION AND REGULATION INC.

## Strategic Interaction Under Asymmetric Regulation: the 'Kiwi Share' in New Zealand telecommunications

July 2008

Bronwyn Howell

New Zealand Institute for the Study of Competition and Regulation Inc. and  
Victoria Management School, Victoria University of Wellington, PO Box 600,  
Wellington, New Zealand. Email [bronwyn.howell@vuw.ac.nz](mailto:bronwyn.howell@vuw.ac.nz)

To be presented at the International Telecommunications Society European Region  
Conference, LUISS Guido Carli University, Rome, Italy, September 17-20, 2008

***Acknowledgement:** The author wishes to acknowledge the helpful comments of Glenn Boyle, Roderick Deane, Lewis Evans, Antony Srzich and Bryce Wilkinson. The views expressed in this paper solely reflect those of the author, and do not necessarily represent those of the institutions with which she is affiliated or their constituent members. Any errors or omissions remain the responsibility of the author.*

## **Abstract**

Regulation binds incumbent firms to a different set of obligations from their entrant-competitors, thereby creating an asymmetric set of options from which the firms may select the strategies under which they will interact. Whilst most regulatory obligations are specified in law, some take the form of contractual agreements. New Zealand's 'Kiwi Share' obligations bind the incumbent to a set of retail tariff structures and levels that have both restricted the incumbent's choices and opened up a range of new strategic opportunities for its rivals that have had a significant effect upon the development of the New Zealand industry. This paper examines the specific consequences of the asymmetric tariff obligations and ensuing strategic interaction amongst sector participants on sector development – namely the effect of universal service retail prices and the allocation of the ensuing costs on the sector's ongoing regulatory agenda; the role of a 'free local calling' obligation on the evolution of New Zealand's broadband market; and the consequent application of further asymmetric legislative obligations on the incumbent to address apparent 'problems' for which the asymmetric tariffs and rivals' strategic choices provide more credible explanations than the incumbent's exertion of its dominant position.

*All business sagacity reduces itself in the last analysis to a judicious use of sabotage.*

– Thorstein Veblen

In the application of competition law and industry-specific regulation, it is well-recognised that the obligations upon dominant firms typically differ from those imposed on firms which do not have significant market power. For example, Part 4 of New Zealand's Commerce Act 1986 prescribes the potential for Ministerial controls to be imposed on goods and services which "are, or will be, supplied or acquired in a market in which competition is limited or is likely to be lessened" (S52(a)). Likewise, the Telecommunications Act 2001 under which industry-specific regulation is administered, contains a complete section (Part 2A) detailing the mandatory operational separation of a specific, named firm – the incumbent network operator Telecom New Zealand.

It is also well-recognised that asymmetric legislative and regulatory obligations affect the strategic actions of the firms concerned. For example, Hausman (2002) attributes the different patterns of competitive interaction observed in the broadband markets in Korea and the United States to differences in the symmetry of regulation. Whereas asymmetric application of access regulation on cable and telephony providers in the United States is attributed with distorting investment patterns and thereby depressing the broadband uptake rate by consumers, in Korea where no regulatory distinction exists, both investment and broadband uptake are higher and the market is assessed as more competitive. In a similar vein, Evans & Quigley (2000) suggest that a non-dominant firm entered into a contract with a dominant firm under terms that appeared under certain circumstances to render it at a competitive disadvantage. However, under the terms of competition law prevailing in the jurisdiction concerned, the non-dominant firm had recourse to litigation in the event that the disadvantageous circumstances materialised, but the dominant firm did not. Hence, the non-dominant firm's strategy differed from what it would have been had the legislative provisions been symmetric.

By extension to Evans & Quigley (2000), in addition to those imposed by competition law and regulation, the contracts that the respective firms enter into may also impose asymmetric obligations affecting subsequent strategic choices made by the firms concerned. Howell (2008) identifies that a contractual deed entered into by the New Zealand Government and the newly-privatised incumbent telecommunications provider Telecom New Zealand Limited (hereinafter 'Telecom'), known as the 'Kiwi Share', imposed additional obligations upon Telecom over and above those required under either the Commerce Act or the

Telecommunications Act regulatory provisions<sup>1</sup> and to which no other firm was bound. The 'Kiwi Share' bound Telecom to three explicit obligations: that the price of residential telephone rentals would not rise faster than the Consumer Price Index (CPI) unless profits were unreasonably impaired (the 'price cap' obligation); that rural residential line rental prices would not exceed urban residential line rentals (the 'universal service' obligation); and that residential customers would continue to be offered a tariff with no charges for local calls (the 'free local calling' obligation)<sup>2</sup> (Boles de Boer & Evans, 1996).

As the 'Kiwi Share' obligations applied only to one firm in a market where the development of competition was an explicit *a priori* expectation, it would be expected that both Telecom and its competitors, customers, regulators and other stakeholders would take the asymmetric obligations into account when selecting the strategies upon which they would interact with each other. Applying Williamson's (2000) Economics of Institutions framework (Figure 1), as extended by Koppenjan & Groenwegen (2005), these strategies would be expected to draw upon interactions at and between each of four institutional levels at which economic activity occurs (Figure 1): the informal institutions, customs, norms and traditions of society (level 1); the formal institutional environment defined by polity, judiciary and bureaucracy (level 2); governance, defined as the play of the 'game' between firms and individuals (level 3); and the resource allocation level (level 4). As such, the strategic activity observed would be unique to the combination of institutions and interactions characterising the New Zealand environment.

Drawing upon Melody (2002), a contract with asymmetric obligations applying in the telecommunications sector forms part of the interaction occurring in a wide sector embracing (at Williamson's levels 2 and 3) technologies, markets and policies (Figure 2). The contract in this sense forms part of a bundle of asymmetric 'regulatory obligations' deriving from all legislative and contractual origins that bind one firm differently from its competitors. The asymmetric obligations will therefore affect the choice of firm strategies not just in respect of their interactions with each other, but also their interactions with markets (consumers), policy-makers and the technologies that they choose to adopt.

Whilst some have contended that New Zealand's 'light-handed' regime prevailing between 1990 and 2001 relied upon competition law alone to govern sector interactions (e.g. Spiller & Cardilli, 1997), the 'Kiwi Share' contractual obligations imposed significant additional constraints upon Telecom, equivalent to industry-specific regulatory restraints, that its

---

<sup>1</sup> Although the obligations for funding the 'Kiwi Share' obligations were subsequently incorporated into the Telecommunications Act, where they were renamed the Telecommunications service Obligation ('TSO'), the contractual obligations with respect to Telecom's pricing obligations remain in place.

<sup>2</sup> Changes to prices (outside these guidelines) or any of the other terms, required the approval of the Minister of Communications.

competitors did not face. Moreover, Telecom, as the dominant firm, was subject to substantially more scrutiny than its competitors, in that all of its customers, competitors and former political masters and taxpayer stakeholders had a vested interest in its actions. Whilst its competitors were concerned solely with interacting in a newly-liberalised market, Telecom was confronting the dual and simultaneous challenges of privatisation and market liberalisation. Its strategic choices, therefore, were restricted by more than just the legal and contractual environment. The history of market interactions, and particularly the level 1 institutions, cultures, norms and values developed over time will also have a bearing upon how the interaction of strategies plays out.

Starting from these theoretical underpinnings, this paper examines the effect of the asymmetric 'Kiwi Share' obligations upon strategic interaction between all of Telecom, its competitors, customers and policy-makers in the New Zealand telecommunications sector during the period 1990 to 2008. Section 1 traces the origins of the 'Kiwi Share' provisions and places them in their institutional context in the sector. Section 2 discusses how, when competition emerged, strategic interaction arising from differing expectations about the allocation of 'Kiwi Share' costs between Telecom and its competitors influenced the subsequent direction of regulatory policy and legislation. In Section 3, the asymmetric effect of the 'free local calling' obligation upon Telecom in the face of both competition and dynamic technological change with the emergence of the internet is discussed. Section 4 then considers the ongoing strategic interaction arising between the firms and government specifically as a consequence of the historic asymmetric application of the obligations. Section 5 concludes with a discussion of the broader implications of asymmetric contractual obligations that emerge from the New Zealand case study.

## **1. *The 'Kiwi Share' Obligations***

Whilst the three obligations comprising the 'Kiwi Share' were formalised in the deed between the New Zealand government and Telecom on September 12, 1990 (Howell, 2007:15), the individual elements had been long-established artefacts of the New Zealand telecommunications sector. Effectively, the principles embodied in the deed were informal institutions (level 1) historically enacted through government (level 2) control and provision (level 3) since 1880 of all New Zealand telecommunications services. The conflation of politics, state asset ownership and government service provision between 1880 and 1990 resulted in all technological and market decisions being subjugated to political activities (Howell & Sangekar, 2008). For example, Howell (2007) documents the political petitioning

processes that rural residents had to undertake in order to become connected to the network<sup>3</sup>. Political priorities, not commercial imperatives, determined budget sizes, technological choices, prices and the geographical location and order in which investments occurred.

The consequence was a sector inured to the exertion of both market (levels 3 and 4) and political (level 2) power by a provider backed with the force of formal rule-making (level 2). The sole participant recourse for redress for any consequences of the inappropriate exertion of those powers was via political mediation (Howell & Sangekar, 2008). When Telecom was privatised, although the government retained the power to create the legislative framework under which the firm operated (level 2), most of the obligations and expectations historically undertaken under government ownership were transferred to Telecom, either formally via contracts, or informally via level 1 cultures, expectations and norms. For example, a popular public expectation prevailed that the newly-privatised firm would continue to exert its monopoly powers in the same manner as its former government owner had, despite the constraints imposed by contract and under the Commerce Act, and despite impending competition altering the effect of market disciplines on the firm.

However, it is also probable that, in the public mind, many of the informal expectations of government (for example, the power to exercise redistributive social agendas via telecommunications service pricing and provision) had not transferred upon sale. As these expectations were backed by the formal power of government to make level 2 laws, then inevitably tensions would emerge regarding the appropriate use of these powers to achieve social objectives via a privately-owned firm over which government control could be exercised only by legislative force. The use of powers also had to take into account the 'received wisdom' via the level 1 cultures and norms that the government continued to hold an obligation to safeguard social inclusion by ensuring telecommunications connectivity for rural residents did not become unaffordable (TCF, 2008:4). The 'Kiwi Share' obligations represent the New Zealand government's first attempt at balancing the multiple responsibilities and expectations at levels 1 and 2 using contractual instruments more usually associated with level 3 as it moved from being combined legislator, owner, controller, regulator and custodian of the public good in a monopoly environment to becoming regulator, legislator and public good custodian in an increasingly competitive and increasingly technologically complex telecommunications market.

---

<sup>3</sup> At their own expense, even though the Post Office appropriated the assets paid for by residents under the petition system.

## **1.1 The ‘Universal Service’ Obligation**

The ‘universal service’ obligation had its origins in 1856, when the fledgling New Zealand colonial government, as one of its first independent actions, regulated postal tariffs to a single, uniform national rate. When the government assumed regulatory responsibility for telegraph services in 1864, universal ‘postalised’ telegraph tariffs were imposed. The justification given was that, as for postal services, such tariffs served a social policy objective to “establish a system commensurate with the rapid increase of the population nationwide ... and to encourage and facilitate settlement of the interior” (Wilson, 1994:22) in addition to rationalising a plethora of individual, provincially-based tariffs.

By 1880, when the government assumed, via the Electric Telegraph Act, the monopoly for ownership and provision of all telephony services in New Zealand, it was already the owner of all telegraph services as a consequence of the dissolution of provincial government in 1876. Universal telephony tariffs were imposed from the very outset, and courtesy of the ‘Kiwi Share’, remain today despite New Zealand’s current population being around 80% urban (OECD, 2007). Any change to this traditional pricing pattern has been considered politically ‘too difficult’ to bring about<sup>4</sup>, although a recent review by the Telecommunications Carriers’ Forum (TCF) has recommended that the government revisit the possibility of funding the obligation from general taxation rather than as a charge on the industry, and making the obligation contestable, rather than binding Telecom alone (TCF, 2008).

## **2.2 The ‘Free Local Calling’ Obligation**

The ‘free local calling’ obligation arose in 1880, when the incumbent Superintendent of Telegraphs, upon assuming responsibilities for telephone services, eschewed charging for calls between subscribers connected to the same exchange as he deemed the practice “too complex and onerous for exchange staff who would have to log the calls” (Wilson, 1994:66). When the issue was addressed four years later by the Postmaster General, any change in the pricing policy was deemed to be too “politically unpopular” to undertake (*ibid*). When technological change led to exchanges covering larger areas, the ‘free local calling’ zones expanded commensurately.

Following World War Two, ‘free local calling’ zones became a matter for political determination, independent of exchange or technological restrictions. Burgeoning use of long-distance telephony offered opportunities to politicians seeking political support to trade

---

<sup>4</sup> Personal communication with an opposition Member of Parliament with responsibility for telecommunications policy.

off politically-determined long-distance charges against 'free' local calling benefits, particularly in marginal electorates (Wilson, 1994:151-3). Consequently, New Zealand now exhibits some of the OECD's largest local calling zones (NZIER, 2005).

Once again, the embeddedness of 'free local calling' in New Zealand's institutional framework resulted in its inclusion in the 'Kiwi Share' obligations, as it was deemed too politically difficult to do otherwise. In the 2008 TCF review of the 'Kiwi Share' obligations, the economic and social implications of free local calling were excluded from the terms of reference for the review, as the government had directed that such services must continue to be provided (TCF, 2008:25).

### **1.3 The 'Price Cap' Obligation**

The 'price cap' obligation draws on New Zealand's long history of political price-setting. From the inception of telephony services in 1880 until the passing of the Telecommunications Act in 1987, the legislative right to determine charges lay with the Postmaster General (politician), and was subject to Parliamentary scrutiny. Whilst commercial considerations could inform the decision, ultimately charges were determined as a matter of politics. When telecommunications service provision was separated from the other Post Office services as a State-Owned Enterprise (SOE) in 1987, the direct nexus to political price-setting was severed. However, as SOEs were still bound by a government agency agreement, broad political oversight of and accountability for price-setting remained.

When Telecom was privatised in 1990, the 'price cap' obligation was invoked as a pragmatic move to satisfy largely political concerns that the Commerce Act alone might be insufficient to constrain a private owner with market power from setting excessive prices in a newly-privatised and newly-competitive market where it was uncertain what information would be available to adequately assess market performance. In effect, the 'price cap' protected consumers from the risk of expropriation via prices to any greater extent than that which they might have been exposed under government ownership (at least in respect of the residential line rental charge).

That the Minister of Communications (political successor to the Postmaster General) *could* approve price rises above the cap in the event of sufficient compelling evidence being provided offered some protection to Telecom's owners from exposure to a legitimate risk of costs rising above 1990 levels (presuming the Minister would take into account the public benefit of Telecom continuing to be financially viable when making such a decision). That



Ministerial approval *must be obtained* for tariff increases above the cap or any other change to the 'Kiwi Share' contractual obligations preserved the long tradition of political input into price-setting, at least in respect of determining the tariff structure and upper price bound. The requirement also ensured an ongoing need for ministerial monitoring of the sector (initially via the Ministry of Commerce (MoC), subsequently the Ministry of Economic Development (MED)). Ministerial approval to alter 'Kiwi Share' terms has been sought only once, in 1999 when Telecom applied for a variation to the 'free local calling' obligation in respect of dial-up internet calls in excess of ten hours per month. The Minister approved the charge.

The 'price cap' obligation also signalled important information about the margins the government believed were incorporated into Telecom's prices at the time of sale. As the government had provided all telephony services up to 1990, and had been operating the telephony segment as a stand-alone entity separate from other Post Office operations since 1987, it had access to all information available about the relationship between Telecom's prices and costs. This information could logically be assumed to have been incorporated into the decision-making at the time of sale.

If the government believed that the line rental prices in place on September 12 1990 incorporated profits in excess of those required to cover 'Kiwi Share' 'universal service' and 'free local calling' costs (which were embedded in existing product cost and price structures), then it begs the question of why the 'price cap' obligation established a  $cpi-x$  incentive with  $x=0$ . If it had been known that profits were being garnered, then it would appear irresponsible for the government to set  $x$  at 0. Rather, the rational action would have been to set  $x$  at a small positive value, thereby 'ratcheting' allowable prices down over time and eliminating supra-normal profits (Milgrom & Roberts, 1992:232-6). That this was not done could be interpreted as a signal that the government believed the prices did not incorporate any supra-normal returns, meaning a 'price cap' was required only to prevent opportunistic price-setting above this historically 'fair' level<sup>5</sup>. The price paid for the firm and accepted by the government would have reflected these assumptions.

---

<sup>5</sup> It is noted that these assumptions rely upon a static technological environment, and that there were undoubtedly productive inefficiencies within the firm that remained to be competed away. However, given that the firm was sold in a fully deregulated environment, and privatization would undoubtedly eliminate some of these inefficiencies, the price at which the firm changed ownership would have reflected some middle ground between each party's assessment of the value of potential savings. Any margins remaining for Telecom's shareholders once the productive efficiency gains were realized would be expected to be competed away when entry occurred.

## **2. The ‘Kiwi Share’ and Competitive Entry**

Competitive interaction is underpinned by the participants’ actions, derived from strategic thinking – “the art of outdoing an adversary, knowing that the adversary is trying to do the same to you” (Dixit & Nalebuff, 1991:ix). The knowledge that another party is constrained in its choices by different obligations necessarily affects the range of strategies available to a party in selecting the one that will, in its assessment, leave it best off after the interaction has occurred. It would be expected that Telecom’s competitors would utilise the knowledge that the ‘universal service’ obligation distorts competitive interaction in order to appropriate as much of the gain possible from competitive entry. Indeed, competitors’ failure to take advantage of the asymmetry for their own purposes would be a deviation from expected behaviour warranting further investigation and explanation.

### **2.1 Strategic Responses to Asymmetrical Universal Service Obligations**

Farrell (1996) highlights the incongruity of the asymmetric allocation of universal service obligations on the prices of only one firm in a competitive market. High prices (i.e. above cost) in urban markets in order to subsidise low prices (below cost) in rural markets induce inefficient selective infrastructure-based entry only in the low cost urban markets by competitors with costs that may be higher than those of the incumbent. Even if only matching the entrant’s prices as consumers switch to the entrant, the incumbent loses revenues from which the unprofitable (high-cost) services were subsidised. If the incumbent is also subsidising line rentals from calling revenues, even entry into calling markets (e.g. long distance) may impede the ability of the incumbent to subsidise the unprofitable services and remain financially viable. Such distortions can be overcome only by levying a tax on the entrant, equivalent to the amount the incumbent used to extract from customers now served by the entrant, in order to continue subsidising the unprofitable services at the requisite level.

When an incumbent faces asymmetric universal service pricing obligations, an entrant seeking to maximise its own profits would logically seek to avoid any price or tax liability for universal service obligations, thereby forcing the incumbent to bear all of the costs uncompensated. If a tax can be avoided, the entrant can selectively enter only the most profitable (incumbent’s capped prices above cost) areas, and undercut the incumbent’s prices.

If the incumbent did not face a ‘universal service’ obligation, it would respond to selective entry by competing on price, down to the higher of its own or the entrant’s costs. With a ‘universal service’ obligation, however, the incumbent is restricted in its ability to compete on price. If the incumbent cannot lower its prices, the entrant can charge approximately the same

price as the incumbent, without fear of invoking price competition. As customers are induced to switch from the incumbent, profits previously earned by the incumbent and used to offset connections charged below cost are now extracted by the entrant as ‘free profits’ (although if there is more than one entrant, they may compete amongst themselves on price, thereby lowering prices to the competitive level).

The incumbent must respond by raising its prices to all of its remaining consumers to cover the entry-induced losses incurred in fulfilling the universal service obligation. If the entrant follows the incumbent and raises its prices too, it makes even higher ‘free’ profits’. If it does not follow, the incumbent loses all low-cost market consumers to the entrant, and must exit the low-cost market. All incumbent costs must then be recovered from the high-cost market, where it faces no competition. Prices in the high-cost market rise to at least their actual cost. A division arises between competitive entrants serving the low-cost market and the incumbent serving the high-cost market, each charging prices determined by their own costs, and removing any vestige of a ‘universal service’ price across the two markets. Moreover, if the entrants’ technology is more costly than the incumbent’s (e.g. they cannot capitalise upon economies of scale), then not only are universal service prices eliminated, but total welfare is lower, as the total cost of provision is higher than if the incumbent served all consumers.

From a public policy perspective, therefore, asymmetric levying of a ‘universal service’ obligation on the incumbent and preventing the incumbent from sharing the costs of meeting the obligation with its entrant-competitors actually induces the exact circumstances that the universal service obligation has been imposed to circumvent. It is therefore implausible to assume that the government, given its overriding objective of increasing competition in the market, could have intended the ‘Kiwi Share’ costs to be borne by Telecom alone. If there was any question of prices exceeding costs, then the simplest solution was a ratchet on Telecom’s fixed line rental prices in the ‘price cap’. If there was an intention to selectively extract Telecom’s accumulated profits for consumer and taxpayer purposes as a consequence of any other policy, then this should have been explicitly and separately levied. That neither of these was undertaken is consistent with government expecting Telecom to incorporate ‘Kiwi Share’ costs in the prices to both consumers and its competitors<sup>6</sup>.

---

<sup>6</sup> It cannot be discounted that the Government was so poorly informed that it had no conception of these ramifications. However, accepting this premise requires the additional assumption that the government’s policy advisers were largely ignorant of the economic fundamentals of both regulation and competitive market operation. Given that the government’s overriding policy objective since 1984 had been the economic reform of the New Zealand economy (Evans, Grimes, Wilkinson & Teece, 1996), there is little apparent justification for accepting this hypothesis.

## **2.2 Contesting in Court: Clear v Telecom, 1991-94**

When Telecom faced competitive entry in the local calling market from Clear Communications<sup>7</sup> (hereinafter Clear) in 1991, the firm used the Efficient Component Pricing Rule (ECPR) to set interconnection prices (Blanchard, 1995). The benefit of ECPR when the social obligations are imposed asymmetrically on only one firm is that it enables the firm bearing the obligation alone to factor the cost of the obligation into its interconnection price to its rivals (Economides & White, 1995). Clear, however, contended that Telecom alone should bear the 'Kiwi Share' costs, and alleged that any charge levied by Telecom above its service delivery cost (i.e. excluding any component to recover 'Kiwi Share' costs) constituted an exertion of market power and was therefore illegal under Section 36 of the Commerce Act.

From a strategic perspective, Telecom's action in using ECPR is rational. Clear's assertion that it should not bear any of costs of the social obligations assumes a political distributive intention clearly inconsistent with the government's 'universal service' objectives. It is also inconsistent with the ambit of the Commerce Act, which concerns itself with the long-term welfare of consumers (a dynamic function of total welfare) and not the distribution of producer surplus amongst producers. Neither was it signalled anywhere in the agreement between Telecom and the government that there was any intention to tax Telecom any differently than any other market participant. These observations draw into question Clear's strategic logic in using litigation to contest the point, except perhaps to test the Court's interpretation, in the absence of any other New Zealand precedents, of the Commerce Act Section 36 provisions regarding expectations about the behaviour of dominant firms trading in markets governed by competition law.

The New Zealand High Court ruled in 1992<sup>8</sup> that Telecom's use of ECPR prices did not constitute a breach of Section 36. As Section 36 prevents monopoly pricing only when used with the intent of restricting, preventing or eliminating competition in a market, the Court deemed that monopoly pricing to recover 'Kiwi Share' costs does not if itself constitute restriction, prevention or elimination of competition. However, when Clear contested the decision, the Court of Appeal<sup>9</sup> found in 1993 that Telecom could not lawfully charge an interconnection price that included a component of monopoly rent (i.e. cost-based prices, excluding the Kiwi Share costs, must be charged). The consistency of the Court of Appeal decision with the contention that Telecom alone must bear the 'Kiwi Share' costs, and the deleterious effect that the decision would have upon efficient entry in the market and the

---

<sup>7</sup> Clear was subsequently merged into TelstraSaturn, a company formed by the purchase by Telstra of Satrun communications, to form TalstraClear. (Howell, 2007:17).

<sup>8</sup> Clear Communications v Telecom Corporation (1993) 5 TCLR 166 (HC) 25, 27, 35, 103

<sup>9</sup> Clear Communications v Telecom Corporation (1993) 5 TCLR413 (CA) 25

ultimate ability to deliver upon the universal service social objective, caused some dismay in both economic and policy circles (Blanchard, 1995). That the decision also appeared contrary to the signals of government intentions in the ‘Kiwi Share’ obligations themselves gave rise to comments from some quarters of the Court of Appeal’s apparent judicial activism in coming to the conclusion that it did.

Telecom then appealed to the final arbiter, the Judicial Committee of the Privy Council of Great Britain<sup>10</sup>. The case was heard in 1994. The Privy Council decision argued that Clear’s Section 36 case rested upon showing that Telecom had used its dominant position for the purpose of preventing, deterring or excluding competitive conduct. As Telecom had set its prices for Clear on the basis of opportunity cost, it was deemed to be behaving exactly as would any firm in a competitive market, so the appeal was upheld. Further, it was held that the application of the ECPR would put Clear in a position to compete out over time any monopoly profits obtained by Telecom, and that, if they were not competed out, the Government had the ability to introduce price controls under Part IV of the Commerce Act. Moreover, the Privy Council found that Clear had not demonstrated that Telecom’s prices included monopoly rent, above that necessary to meet the social obligations of the ‘Kiwi Share’ (Blanchard, 1995).

### **2.3 Recourse to Political Strategising**

Whilst from a legal and commercial perspective, the Privy Council resolution gave clarity and ultimately resulted in a significant number of new entrants participating in the market on the basis of ECPR-based interconnection contracts (Howell, 2007:26-7), considerable residual resentment remained, both amongst Telecom’s competitors and some parts of the (voting) public. Having failed to outmanoeuvre Telecom either in the market or via the courts, a group of competitors, led by Clear and the Telecommunications Users’ Association of New Zealand (TUANZ)<sup>11</sup>, began lobbying politicians for the introduction of industry-specific regulation where interconnection prices would be set by a regulator rather than relying solely upon negotiation between the firms concerned. Telecom countered by lobbying for the retention of the existing arrangements.

In the short-term, the contestors’ efforts were not rewarded. In an inquiry in 1995, The Treasury and Ministry of Commerce found no reason arising from the 1991-94 court cases to

---

<sup>10</sup> Telecom Corporation v Clear Communications [1994] 5 NZBLC 103, 552 (PC); [1995] 1 NZLR 385 (PC) passim

<sup>11</sup> Despite the implications of its title, TUANZ is an association comprised principally of Telecom’s wholesale (i.e. competitor) customers and Internet Service Providers (ISPs). It has no mandate to represent Telecom’s retail customers.

change either the Commerce Act or the 'Kiwi Share' arrangements. The Minister endorsed the inquiry's recommendations (MoC/Treasury, 1995). In the long run, however, a sympathetic ear was found in the Parliamentary opposition (predominantly members of the social democratic Labour Party), many of whom had opposed both the privatisation of Telecom and its initial sale to a consortium of American<sup>12</sup> firms (although the consortium sold 724.5 million shares (a majority) into the market on 19 July 1991, as agreed in the terms of sale). As part of its manifesto for the 1999 election, the Labour Party promised a new inquiry into New Zealand's telecommunications regulatory framework. Support from the opposition naturally invoked political and regulatory uncertainty, due to the inability of a government to bind its successors to maintain any specific policies or laws (Howell, 2008).

A Labour-led coalition formed the government after the 1999 election and moved rapidly in 2000 to instigate a formal inquiry. Given the nature of its political origins, the 2000 Inquiry was instructed in its terms of reference to address (amongst other issues): "alternative means of establishing interconnection terms and conditions; pricing principles and other terms and conditions (such as service quality standards) for current and future forms of interconnection; processes applying to interconnection negotiations, including dispute resolution and enforcement mechanisms; local loop unbundling; resale of telecommunications services; information disclosure;"<sup>13</sup> and the Kiwi share obligations.

The Inquiry reported back on September 27 2000<sup>14</sup>, with the finding that, as Telecom's prices still contained elements above cost, an industry-specific regulator with the power to regulate prices using TSLRIC (cost-based) methodology for a range of Telecom-provided non-internet services should be installed, and that Telecom alone should bear all of the costs of the 'Kiwi Share' until such time as it could satisfy the Minister that it should be allowed to increase its charges. Telecom's internet-based retail services were spared from TSLRIC pricing, instead to be offered as wholesaled products to competitors at retail minus a regulator-determined discount, and full local loop unbundling was not recommended (Howell, 2007:38)<sup>15</sup>. The inquiry also recommended that local loop unbundling should not proceed, as there was evidence of competition already emerging in the broadband market.

---

<sup>12</sup> The Opposition at the time was comprised largely of members of the previous government, which had severed the ANZUS strategic military alliance with the United States on the basis of its inconsistency with New Zealand's anti-nuclear policy.

<sup>13</sup> [http://www.med.govt.nz/templates/Page\\_16432.aspx#tor](http://www.med.govt.nz/templates/Page_16432.aspx#tor)

<sup>14</sup> [http://www.med.govt.nz/templates/MultipageDocumentTOC\\_16484.aspx](http://www.med.govt.nz/templates/MultipageDocumentTOC_16484.aspx)

<sup>15</sup> These recommendations were made despite an absence of any compelling evidence that the New Zealand industry had performed any worse than the regimes imposing the types of regulation recommended, and in particular in the presence of clear evidence that by dint of the 'price cap', real residential telephone prices had fallen by a greater margin in New Zealand than the OECD average (Howell, 2008)

## **2.4 Resumption of Industry-Specific Regulation**

The Labour-led government accepted most of the recommendations, establishing in the Telecommunications Act 2001 the office of the Telecommunications Commissioner with the powers to regulate prices for designated services and to advise on other services which should become subject to regulation. However, due to their clear incompatibility with universal service objectives, the ‘Kiwi Share’ recommendations were rejected. Instead, whilst still requiring Telecom to maintain its existing contractual obligations in respect of its retail pricing and service quality levels, the Act created a new obligation, the ‘Telecommunications Service Obligation’ (TSO), whereby the Commissioner would, on an annual basis, allocate the costs of Telecom meeting its social obligations across all firms participating in the market.

The price regulations removed any question of Telecom charging competitors prices above (TSLRIC-based) cost, but the TSO obligations in effect ‘tax’ entrants in respect of the ‘free profits’ made from arbitraging upon costs that Telecom had to bear but that entrants did not, and transferred revenues to Telecom to restore its financial position to what it would have been had entry not occurred in the low-cost areas. The incidence of the TSO tax thus substantially reduces the risk of inefficient entry in low-cost markets by firms with higher costs than Telecom. However, the TSO has been unpopular with Telecom’s competitors, who have continued to engage in political lobbying on the basis that they should not be taxed to compensate Telecom’s losses, especially when they provide services in the same areas using alternative technologies (e.g. mobile and wireless) and could service rural consumers more cost-effectively with these technologies<sup>16</sup>.

Political pressure resulted in a further review by the TCF in 2008. The government’s response to the recommendations that the costs be met from general taxation revenue and that firms be allowed to contest for the right to provide services in ‘uneconomic’ areas is yet to be delivered. However, as long as the government has social policy objectives in respect of telecommunications, the question of how to allocate the costs remains. As Farrell (1995) identifies, universal service prices are antithetic to competition and competition is antithetic to universal service principles. The New Zealand example illustrates that as long as the obligation is asymmetrically embodied in the prices charged by only one participant in the market, there will be continual strategic interaction between all participants in all of the market, the courts.

---

<sup>16</sup> <http://www.scoop.co.nz/stories/BU0804/S00241.htm>

### **3. The ‘Kiwi Share’ and Technological Change**

Whilst the ‘universal service’ obligation has led to tensions regarding the allocation of costs, the ‘free local calling’ obligation has introduced further tensions into the New Zealand telecommunications market, which have arguably had a far bigger effect upon firm behaviour and sector outcomes. The effects arise from the interaction of ‘free local calling’ and the consequences of technological change.

#### **3.1 ‘Free Local Calling’, Voice and Internet Usage**

‘Free local calling’ is a special case of a two-part tariff, where a single price is charged to cover both connection to the network and usage of it. Whereas a classic optimal two-part tariff prices each component at cost, ‘free local calling’ requires connection be priced above cost (a call cannot be made unless a connection is purchased), and the surplus used to pay for all costs of usage, which is priced below cost, at zero. The consequence is that fewer connections are sold (as the connection price charged rises relative to an optimal two-part tariff, thereby excluding all users with a combined value of connection and usage who would have purchased at the cost-based prices but not at the flat-rate price), but usage is greater, as all those purchasing a connection now consume all calls or call minutes with a positive benefit, rather than only those where the benefit exceeds the marginal cost, priced as the usage charge (Laffont & Tirole, 2002).

The ‘free local calling’ obligation has had a profound effect upon patterns of telecommunications usage in New Zealand. NZIER (2005) finds that the volume of voice minutes consumed per account in New Zealand is one of the highest in the OECD. Howell & Sangekar (2008) find that the combined volumes of voice minutes and internet usage per account in New Zealand are five times those observed in Finland, where two-part tariffs and cost-based, region-specific (i.e. not universal) line rental prices prevail.

With the emergence of the internet, first accessed via dial-up telephony lines, ‘free local calling’ offered a consumer welfare boon in those markets where the tariff structure prevailed. Not only was a dial-up internet connection ‘gifted’ with an extant voice connection, but dial-up internet access could be consumed up to the point where the marginal benefit of the telephony component was zero, not the marginal price of the call (Howell, 2008a). The four countries with widespread ‘unmetered’ voice telephony pricing’ (i.e. ‘free local calling’) – New Zealand, Australia, Canada and the United States – exhibited some of the earliest and highest rates of connection and usage of dial-up internet access in the OECD, leading to an endorsement of such pricing policies in order to increase internet usage (OECD,



2000). Such endorsement has likely been a significant factor in the commonly-observed practice of offering ‘unmetered’ or ‘flat-rate’ broadband tariffs.

### **3.2 ‘Free Local Calling’ and Interconnection Contract Arbitrage**

Classic interconnection contracts (ICAs) typically require the owner of the network on which a call originates to make a payment to the owner of the network on which the call terminates (Laffont & Tirole, 2002), to compensate for the costs of carrying the call to its destination. Interconnection can be billed by call or by call duration. The most common billing is by call duration. The rate will vary depending upon the relative size of the networks. Such ICA agreements have proved reasonably acceptable to both parties as long as the calls made on each network are of the same length.

However, if the average call origin or duration is asymmetric, the network operators can engage in strategic selection of customers in order to arbitrage upon the gains and losses from interconnection revenues (classic ‘adverse selection’ or ‘cream-skimming’). Networks have an incentive to sign on those customers who, on average, receive longer calls from customers of other networks than they make to customers of other networks (e.g. call centres), as they generate net positive ICA cash flows. Indeed, it is strategically advantageous for a network operator to share some of the anticipated positive net ICA revenues from other networks with these customers as an inducement for them to subscribe in the first place, and to discourage them from signing with a rival by endeavouring to ‘lock them in’ for an extended period of time<sup>17</sup>.

In 1996, Telecom and Clear negotiated a five-year ICA. The agreement required Telecom to pay 2c per minute for all calls originating on the Telecom network and terminating on the Clear network. The Clear payment varied over time, on the assumption that Clear’s network size would increase. Discounts on both sides were offered for off-peak calling. The Telecom-Clear ICA became the prototype upon which Telstra, Saturn, Compass and others subsequently negotiated ICAs with Telecom (Karel, 2003). Whereas call origination and duration was likely approximately symmetric when the ICA was signed, the emergence of the internet dramatically changed calling patterns. Firstly, the traffic generated on the PSTN grew exponentially (Figure 3), induced by ‘free local calling’ as new internet users dialled up to their internet service providers (ISPs). Secondly, as the vast majority of internet users were

---

<sup>17</sup> It is no coincidence that TUANZ has a separate membership division catering solely for operators of call centres, as such customers would be most beneficial to small, new competitors to a large, incumbent network) such as Telecom.

Telecom fixed line customers, the vast majority of this traffic originated on Telecom's network. Thirdly, internet calls were very much longer in duration than average voice calls.

Together, these factors created a classic ICA arbitrage opportunity for Telecom's competitors. As long as they could sign on the majority of ISPs as customers, there would be a net flow of ICA cash from Telecom to its competitors. They moved rapidly to sign on ISPs, offering substantial cash payments as an inducement (Karel, 2003). These payments were further shared by ISPs with their customers, via reduced-cost or even free ISP accounts. The heavier the internet use of an ISP customer, the more valuable they were to Telecom's rivals, so there was intense competition amongst non-Telecom ISPs to sign on the heaviest internet users. Over the period 1996-99, whilst the market share of ISPs signed up to Telecom's rivals grew to slightly over 50% (Enright, 2000), undoubtedly more than 50% of the internet traffic was terminating on rival networks (Howell, 2008). The effect of reduced ISP fees is reflected in Boles de Boer, Enright & Evans' (2000) comparative analysis of the ISP market in Australia and New Zealand. Whilst New Zealand had fewer than one third of the number of ISPs per capita of Australia, the number of ISP accounts per capita was 10% higher and prices on average 30% lower.

The consequences of ICA arbitrage, however, were financially crippling for Telecom. Due to the 'free local calling' obligation, the firm was prevented from generating any additional revenue from residential dial-up internet usage. At the time, the average monthly residential line rental was \$30 per month. The consumption of an average dial-up internet connection customer at peak times was generating an ICA liability of \$36 per month per dial-up internet account. As ICA incentives likely resulted in a skew such that ISPs aligned with networks other than Telecom signed up a majority of the heavy users, the average monthly liability in excess of income per account for Telecom likely substantially exceeded the implied \$6 cash deficit (Howell, 2008a).

Telecom's response to the strategic threat posed by its rivals was two-pronged. The first response was commercial: technological bypass of the dial-up PSTN with a new, unregulated ADSL broadband service. The second response was political: renegotiating the terms of the 'Kiwi Share' to enable recovery of the costs imposed by burgeoning internet use and strategic arbitrage on the ICA by its rivals.

### **3.3 Telecom's Response #1: Strategic Broadband Investment**

The first response was rapid investment in the successor broadband ADSL technology (New Zealand was the third country in the OECD to offer a commercial ADSL service when it went live in January 1999 – Howell, 2003). High speed (2Mbps was the basic offering) ADSL was made available widely (85% of customers by 2002 - *ibid*) and low-priced (one of the cheapest per megabit second in the OECD on 2000 – OECD, 2001) in order to induce rapid substitution by principally the heavy users (especially those of its rivals) from costly, unchargeable dial-up internet access to relatively less costly, chargeable and, importantly, unregulated ADSL. Furthermore, even though the firm faced different costs of installation in different parts of the country, universal nationwide tariffs prevailed (Howell, 2003).

Moreover, in order to induce substitution from dial-up as quickly as possible, Telecom offered ADSL under two-part tariffs. Howell (2008) shows that, as flat-rate tariffs for legacy technologies result in substitution to the frontier occurring at higher individual valuations of connection and usage volumes than under an optimal two-part tariff, earlier substitution could be induced by pricing ADSL connection below cost and subsidising it from either ADSL usage or prices above cost from another product in a bundle.

Under Telecom's offers, ADSL could be purchased only if the consumer also purchased a Telecom dial-up voice telephony account (contemporaneously, other infrastructure providers – notably Saturn – were offering broadband and voice telephony in a pure bundle), although ISP services could continue to be purchased from third parties. A high volume internet user substituting from dial-up to ADSL would be moving all internet usage to the new network (i.e. massively reducing consumption on the PSTN), but under 'free local calling', still paid exactly the same monthly fee for a very much lower volume of usage on the voice network. In a 'bundle' of voice telephony and ADSL, voice telephony payments above cost could subsidise ADSL charged below cost. If the PSTN internet usage was also incurred to an ISP aligned to a network other than Telecom's, then not only were PSTN internet usage costs avoided, but the costly ICA obligation imposed by the consumer's ISP choice was also eliminated. Telecom could thus afford to discount ADSL connection charges below cost to counter its rivals' strategic ICA arbitrage, simply because the counterfactual was a substantial loss in any case. Evidence that Telecom's ADSL connection prices charged were below cost comes from Covec (2004). International benchmarking of TSLRIC prices in similar markets reveals that Telecom's entry-level ADSL price for access with only a minimal usage bundle of 600 Mb/month was lower than prevailing regulated monthly bitstream access prices in most comparable regimes.

However, due to the high value of the ‘connection gift’ from bundling dial-up internet with voice telephony and the comparatively low valuation of the internet usage of most consumers, rapid substitution to ASDL did not occur. Indeed, as heavy internet users faced positive connection and usage prices under the two-part tariffs compared to zero connection and usage under dial-up access using a free ISP account, and most of the usage was low-valued, dial-up usage per account continued to grow exponentially (Figures 3 & 4). Rather, it was the high-valuing, low-using internet consumers who were most likely to substitute (Howell, 2008a). Whilst this reduced some pressure on the PSTN it did not address the fundamental problem of huge cash losses due to asymmetric allocation of the high dial-up internet users and the perverse incentives operating under the ICA and ‘free local calling’ obligations.

### **3.4 Telecom’s Response #2: ‘0867’**

Given the inability to substantially stem the cash flows via technological substitution, by September 1999, Telecom was forced to adopt its second response: petitioning the Minister to alter the prices charged under the “Kiwi Share’ agreement. The proposal was to charge residential consumers 2c per minute (the ICA liability) for calls in excess of 10 hours per month per account made to ISPs not connected to a separate Telecom dial-up internet PSTN network (IPNET).

The response came to be known as ‘0867’ after the calling prefix of IPNET accounts. As well as securing its financial viability, Telecom claimed that ‘0867’ enabled separation of internet traffic from voice traffic, thereby enabling the firm to maintain voice service quality levels as agreed under the ‘Kiwi Share’ terms. That consumers could still use 10 hours per month of internet connection free of charge was offered as a sign of good faith (credible commitment) that Telecom was not acting anti-competitively in order to shut down rival ISPs, as such usage would still incur an ICA liability to Telecom of up to \$12 per month for each consumer dialling a non-IPNET ISP. The Minister, in one of his last acts before being removed from office in the 1999 election, approved the variation to the “Kiwi Share’ agreement<sup>18</sup>.

---

<sup>18</sup> [http://www.med.govt.nz/templates/MultipageDocumentPage\\_4850.aspx](http://www.med.govt.nz/templates/MultipageDocumentPage_4850.aspx)

### **3.5 Competitor and Administrative Strategic Responses to '0867'**

Despite numerous complaints about Telecom's action over '0867' being a potential breach under Section 36 of the Commerce Act, no other firm (either ISPs or network operators) brought any litigation. All, however, petitioned politicians and requested the Commerce Commission to use its powers to bring a case – in effect, 'free-riding' off the Crown to cover the costs of bringing a suit against Telecom. In August 2000, one month before the 2000 Inquiry reported its findings, the Commission laid charges under the Commerce Act. The Commission alleged that "in introducing 0867 Telecom sought to prevent or deter competitive conduct by other telecommunications network operators and Internet service providers" (MED, 2001). However, the High Court found in 2008 that no breach had occurred. It is noted none of the actions alleging that Telecom has exerted its dominant position have been proven in court.

Despite the pending litigation, the original 1996 ICA that had stimulated the strategic exchanges ran its full course of five years. It was replaced first in 2000 by a 'bill and keep' agreement, and in 2002 with regulated contracts specifying a termination rate of 1.13c/minute. The majority of ISPs acquiesced and acquired Telecom '0867' accounts, at least in respect of servicing their heaviest dial-up internet customers. Dial-up internet traffic continued increasing unabated, reaching a peak of 35 hours average consumption per month for each of the 850,000 dial-up internet access accounts in 2003 (Figure 4). Whilst low-priced ISP accounts remained the norm, in the absence of extensive interconnection cash flows, the 'free' ISP model induced by the contractual arbitrage had effectively disappeared by 2001, with minimal effect upon the number of internet accounts per capita (Karel, 2003).

Even though Telecom's ADSL prices were very low by international standards (New Zealand is still amongst the OECD top quartile in registering low ADSL prices (per month and per Mb/s), highest speed offered by an incumbent, and low price per additional MB over prescribed caps – OECD, 2008), substitution from dial-up to broadband continued to be sluggish until 2004. Figure 4 indicates that New Zealand broadband uptake is driven predominantly by substitution from dial-up usage rather than new account purchase. As prices did not change substantially in 2004, the most logical explanation for the increase lies in changes in demand arising from new applications conferring greater consumer benefit from broadband than dial-up. Howell (2008) identifies that increases in usage of New Zealand's most popular web property TradeMe are nearly perfectly correlated with the upswing in broadband connections.

#### **4. The ‘Kiwi Share’, Regulatory Threat and Strategic Gaming**

The preceding two sections have illustrated the role played by the ‘Kiwi Share’ in shaping strategic interaction in both the political (levels 2 and 3) and commercial (levels 3 and 4) institutions of the New Zealand telecommunications sector environment. The ‘free local calling’ obligation played a significant role in contributing towards both New Zealand’s world-leading dial-up internet access and utilisation statistics, and the comparative absence of supply-side impediments to widespread broadband uptake, but depressed actual broadband uptake by distorting the price signals given to internet users of the real costs of their usage.

##### **4.1 The LLU Inquiry and Broadband Uptake Politics**

However, high levels of broadband uptake were a political priority for the Government as part of its Digital Strategy. The Labour-led government elected in 1999 had already shown its propensity to be influenced by political lobbying from Telecom’s competitors in instituting the 2000 inquiry, albeit rejecting its radical TSO recommendations as a consequence of their inconsistency with universal service objectives. As well as the move to industry-specific regulation, the Telecommunications Act 2001 included an obligation (Section 64) for the Commissioner to revisit before the end of 2003 whether Local Loop Unbundling (LLU) should be imposed. A key consideration for the inquiry was the potential effect of LLU on infrastructure investment and broadband uptake levels.

The LLU inquiry, conducted over the course of 2003, provided a platform for Telecom’s competitors to increase their lobbying efforts. A key theme underpinning the submissions made to the Commission by TUANZ and Telecom’s rivals was to implicate Telecom’s position as the dominant firm in the industry (i.e. an absence of actual competition, measured by the market share of entrants) in New Zealand’s sluggish broadband uptake rate. Rivals further asserted that LLU, by increasing the market share of competitors, would redress the situation<sup>19</sup> - the implication being that Telecom, due to its dominance had strategically restricted investment in and supply of broadband and priced it highly via the use of two-part tariffs. By contrast, Telecom’s submissions included theoretical and empirical evidence from the New Zealand and international markets indicating lack of substantiated evidence of a supply side problem in the New Zealand broadband market (i.e. prices were low, availability widespread, entry had occurred using alternative technologies), that the ‘Kiwi Share’ obligations – principally ‘free local calling’ – could satisfactorily explain observed uptake variations, and that even if there was a broadband uptake ‘problem’, there was no substantive

---

<sup>19</sup> <http://www.comcom.govt.nz/IndustryRegulation/Telecommunications/Investigations/LocalLoopUnbundling/submissions.aspx>

evidence that LLU would have any material effect in addressing it<sup>20</sup>. Furthermore, LLU would impede Telecom's plans to invest in a Next Generation IP-based network (the NGN).

#### **4.2 Conditional Agreements and Political Threats of Legislative Action**

After considering all the submissions, and conducting its own investigations (including a cost-benefit analysis), the Commissioner recommended against full LLU: "the overall benefits from unbundling are not sufficiently persuasive to satisfy the Commission that a regulated solution is warranted"<sup>21</sup>. Rather, the Commissioner instead accepted an offer made by Telecom to make available to competitors a regulated ADSL bitstream product that would enable competitor access to a greater range of services, but would avoid competitor sunk costs and distortions to Telecom's incentives to persevere with its investment in the NGN that would occur under LLU. A condition of the Commissioner's acceptance of the offer and his subsequent recommendation that full LLU not be mandated was that Telecom should be obligated to meet targets of 250,000 broadband connections sold by the end of 2005, of which 33.3% would be sold by Telecom's competitors.

To the considerable dismay of Telecom's competitors<sup>22</sup>, the Minister accepted the Commissioner's recommendations. Nonetheless, political lobbying continued, with notable effect as Telecom's market dominance became a key issue in the 2005 election campaign. The Labour Party manifesto stated "this Labour-led government has ended the destructive period of ultra-light handed regulation that stifled competition, growth and consumer choice in ICT markets" and promised to "closely monitor and enforce commitments made by Telecom New Zealand under the local loop unbundling decisions and ensure targets for broadband uptake for the next three years as outlined in the Digital Strategy are met"<sup>23</sup>. Upon re-election, the threat of political action if predetermined levels of competition and broadband uptake did not emerge was reiterated in the Governor General's November 9 speech from the throne outlining the government's legislative programme: "with respect to ICT, my government will be advancing policies to ensure that the telecommunications sector becomes more competitive and that we achieve faster broadband uptake in line with our competitors"<sup>24</sup>.

---

<sup>20</sup> The author acknowledges that her early work in this area was extensively cited by Telecom in submissions presented.

<sup>21</sup> Executive Summary, (v).

<http://www.comcom.govt.nz/IndustryRegulation/Telecommunications/Investigations/LocalLoopUnbundling/ContentFiles/Documents/Finalreportexecutivesummary.PDF>

<sup>22</sup> See, for example, iHug's submission to the Minister on the matter <http://www.med.govt.nz/upload/5898/tcl-rsp-to-comcom-llu-rpt-submission040209.pdf>

<sup>23</sup> [http://www.labour.org.nz/policy/jobs\\_and\\_economy/2005policy/Pol05-Comms/index.html](http://www.labour.org.nz/policy/jobs_and_economy/2005policy/Pol05-Comms/index.html)

<sup>24</sup> <http://www.scoop.co.nz/stories/PA0511/S00104.htm> (Despite successive attempts in June 2007 to retrieve the official version from [http://www.dia.govt.nz/Pubforms.nsf/NZGZT/Speech187Nov05.pdf/\\$file/Speech187Nov05.pdf](http://www.dia.govt.nz/Pubforms.nsf/NZGZT/Speech187Nov05.pdf/$file/Speech187Nov05.pdf), it could not be retrieved.) This source appears to have reproduced the text complete, but this fact cannot be verified.

Whilst the government's acceptance of the cause of low broadband uptake being a consequence of the competitive environment is questionable, and is addressed in other papers (see Howell, 2008; Howell, 2007), the implications for Telecom and its rivals were clear. Telecom was on notice that legislative action would ensue if the targets set by the Commissioner were not met.

### **4.3 Competitors' Strategic Responses**

Whilst Telecom had every incentive to meet the targets, the *ex ante* signalling to competitors of both the nature of Telecom's obligations and the 'notice' that if they were not met legislative action would follow opened up new strategic opportunities for Telecom's competitors. Competitors faced few incentives to work with Telecom to sell bitstream broadband accounts, as doing so would facilitate Telecom in meeting its obligations to the Commissioner. Rather, it was in the competitors' interests to thwart Telecom's ability to meet the targets, as if the government's threat was credible, the likely legislative response would be imposition of full LLU. As securing full LLU was the rivals' overriding objective, Telecom's success would prevent the objective from being realised (in the event of the government taking legislative action even though Telecom met the targets, government integrity and political credibility would suffer, so Telecom's success would likely rule out LLU in the short to medium term horizon). By sacrificing short term market share, longer-term the benefits of gaining regulated access to Telecom's infrastructure were more likely to be secured.

Moreover, even if the political legislation threat did not exist, simple economics predicated against Telecom's rivals actively marketing bitstream broadband accounts to existing dial-up internet customers. As Figure 4 shows, New Zealand broadband purchase almost exclusively occurs as a consequence of existing dial-up internet users substituting to broadband once a threshold of usage is reached. Telecom's rivals had slightly more than 50% of the dial-up internet market in 2003 (Howell, 2003). The most popular Telecom broadband product was the entry level connection and low data cap bundle retailing at \$29.95 per month, resold by competitors under a regulated wholesale agreement based on retail price minus a discount. Howell (2003) indicates that average monthly megabyte consumption was low, even for those consumers buying large usage bundles. As Miravete (2003) suggests consumers are quite adept at picking the most cost-effective two-part tariff for their usage, it was not surprising that most New Zealand broadband consumers purchased the low-cost, entry level products with low data caps (Howell, 2008a).



The national regulated bitstream access price was set at \$27.87 per month for the best available service on the line<sup>25</sup> - that is, of equivalent speed to the service Telecom was offering its own customers. Due to Telecom's 1999 decision to price ADSL under two-part tariffs and (likely) discount connection below cost to induce substitution, given low consumption levels, the margins available to competitors under the bitstream offers were so small that they would likely be worse off by encouraging their existing dial-up customers to substitute. Even with the 'retail-minus' resold products, the margins were likely very small compared to the margins available from continuing to sell dial-up accounts (these were routinely sold at around \$10 per month, and still generated ICA revenues at least in respect of own-network consumers with usage less than 10 hours per month which under the prevailing regulated ICA rates, would generate cash flows from Telecom of up to \$11.30 per month). Thus, they had no incentive to sell broadband accounts to customers other than the small proportion of high-valuing individuals who opted for the more expensive high-volume packages, which generated bigger margins under the resale agreements<sup>26</sup>.

The consequences of both the economic and legislative incentives are evident in Figure 5. When broadband uptake was low (pre 2004, when only very high-valuing individuals were purchasing), Telecom's rivals sold around 37% of accounts under the resale arrangements. However, when demand started burgeoning in 2004 and 2005 (New Zealand exhibited the 4<sup>th</sup>-highest growth rate in connections per capita in the OECD in 2005 and 2006 – OECD, 2007), despite having access to both bitstream and resale products, and over 50% of the addressable market already as dial-up customers, competitors' combined market share plunged, to a low of 19% in Q4 2004, and then stabilised at around 25% across 2005-2007. That is, contrary to theoretical expectations in the regulation literature, as access possibilities increased as a consequence of bitstream regulation being imposed, competition, measured as entrant market share, actually *decreased*. This otherwise aberrant observation is most plausibly explained by Telecom's competitors responding to the dual incentives of low margins as a consequence of historic pricing strategies and strategising to invoke the political threat of stronger legislative action against Telecom.

---

<sup>25</sup><http://www.comcom.govt.nz/IndustryRegulation/Telecommunications/Wholesale/WholesaleDeterminatons/ContentFiles/Documents/Bitstream%20Determination%20Decision%20568.pdf>

<sup>26</sup><http://computerworld.co.nz/news.nsf/fr/C047FEC66E9B47B3CC25723900423E2A>

#### **4.4 Political and Commercial Consequences**

When the Commissioner reported to the Minister on February 2 2006 that, by the end of 2005, Telecom had exceeded the target of connections sold by 11.6%, but only 24.5% of the connections were sold by its competitors<sup>27</sup>, the government acted upon its threat. On May 1, the Cabinet voted to proceed with both full LLU and accounting separation of Telecom (MED, 2006). On April 5, 2007 – some ten months before the first unbundled circuit was handed over to a competitor – the Minister announced that Telecom would be required to proceed to full functional separation of its network, wholesale and retail divisions<sup>28</sup>. It is noted that the first LLU ‘customer’ firm, and the only one so far to announce publicly that it will enter every exchange that Telecom unbundles, is Orcon, a fully-owned ISP subsidiary of the 100% State-owned infrastructure provider Kordia (formerly Broadcasting Communications Limited).

As a consequence of the 2006 LLU legislation, Telecom’s ability to forcibly tie a Telecom-provided and billed fixed line voice calling connection to a Telecom-provided ADSL line sold by either Telecom or any other provider under wholesale, bitstream or LLU arrangements was broken. Competitors can now sell Telecom-provided fixed line voice services as well as ADSL, enabling them to offer similar pure bundles. By actively marketing to fixed line customers to induce switching of the voice account, competitors get access to the revenues derived from the ‘flat rate’ connection and calling bundle. If the customer already has a broadband account, then the rival gets access to the surplus of voice revenues over cost that Telecom previously used to (potentially) subsidise the (below-cost) broadband account. That is, it is only the margins garnered over cost for fixed voice line services are making it profitable for competitors to now engage in the provision of broadband services, either by resale, bolting on equipment into Telecom’s exchanges (LLU) or providing the service over their own infrastructures (e.g. cable, mobile and wireless). These high margins exist solely due to the historic obligation on Telecom to offer flat-rate voice telephony tariffs. That Telecom charged low ADSL prices in the first place, thereby necessitating competitor entry into the fixed line voice market to stimulate competition, is also directly an artefact of the same mandatory tariff policy.

The pattern of strategic interaction evidenced in the market leads to the conclusion that further distortions will occur as a consequence of the adverse selection possibilities that the historic tariff structure has enabled. Competitors will find it financially most profitable to

---

<sup>27</sup> <http://www.comcom.govt.nz/IndustryRegulation/Telecommunications/telecommunicationsactcompletionofb.aspx>

<sup>28</sup> <http://www.med.govt.nz/upload/45925/11.pdf>

target high-volume existing internet users to be their new fixed voice customers. As competitor ISPs have historically served over 50% of dial-up internet customers (all major ISPs are now either structurally integrated or strategically aligned with a competing infrastructure provider), they have information regarding usage patterns of their existing customers. By targeting only those customers with high internet usage to switch to the new bundles, but encouraging the remainder of low-volume users to remain on Telecom fixed line services, both bundling benefits and ICA revenues of competitors are maximised. Telecom will be left with a disproportionately large share of the low-volume internet users and voice consumers with no internet demand at all. With more of the newly 'low-cost' broadband-purchasing voice subscribers leaving to join other providers, taking their 'notional subsidies and discretionary ADSL payments with them, Telecom has little choice but to raise its prices to the remaining high-cost voice-only and dial-up internet-using customers. Such adverse selection is exacerbated by selective competitor entry in low-cost urban areas, making it even more difficult for Telecom to meet its universal service obligations and for the regulator to ascertain how to allocate the annual entrant tax obligations via the TSO.

Perhaps unsurprisingly, given the pre-existing conditions in the New Zealand market, unlike other jurisdictions, competition in the more highly regulated market post 2006 has not been based around competition for broadband customers *per se*. Rather, competition for broadband customers has been couched in competition for fixed line voice customers, but predominantly those with high levels of existing internet usage (indeed, low volume dial-up ISP accounts are being advertised again by some providers). Practically all firms now market bundles of voice and broadband internet access, with broadband internet access alone being charged at a premium of \$10 per month more if not purchased with a fixed line voice account and long-distance calling package. Reminiscent of past years, more extensive free local calling zones than Telecom's are being used by at least one competitor as an inducement for fixed line voice consumers to switch. Interestingly, no competitor is offering a two-part tariff for fixed line voice services.

Ironically, the substantial changes in market share engendered by real competition for fixed line voice customers reignites the debate over the 'universal service' aspects of the 'Kiwi Share'. If margins previously garnered by Telecom in the voice market to offset investment in its infrastructures and to underwrite its own universal service pricing of ADSL services across the country irrespective of the costs of providing those services are now transferred to competitors, Telecom will be unable to continue offering a universal broadband price and still continue to provide equivalent quality services in high cost areas.

## **5 Future Implications**

Asymmetric assignment of the ‘Kiwi Share’ obligations and the strategic responses to them by both Telecom and its competitors has clearly had a significant effect in shaping the New Zealand telecommunications sector as it exists today. Regardless of the nature of the legislative infrastructure prevailing – either competition law-based or industry-specific regulation – the ‘Kiwi Share’ provisions have been the underlying causes of strategic tensions, the outcomes of which have determined both the nature of competitive interaction undertaken and the extent of political intervention observed. The asymmetric nature of the obligations has undoubtedly created many more potential opportunities for strategic interaction, arbitrage and conflict than if they did not exist. The consequence of their presence has been a very different pattern of strategic interaction in New Zealand than has been observed in other countries where more conventional industry-specific regulation, arbitrated by a regulator, has prevailed.

The ‘Kiwi Share’ obligations have been unique to the New Zealand market, and the conflicts that have emerged have also been unique to the circumstances in which they emerged. Nonetheless, when conflicts or enigmas in sector performance have emerged, the response of both the industry participants and policy-makers has been to look ‘downward’ in the institutional hierarchy to find ‘causes’ and hence ‘solutions’ for the enigmas in the level 2, 3 and 4 institutions, rather than ‘upwards’ to the level 1 institutions embodied in the ‘Kiwi Share’. Whilst there has been a complete reversal in New Zealand’s industry regulations, from the OECD’s most liberal competition law-predominant governance in the 1990s, to one of the most radical industry-specific regulatory regimes with mandatory functional separation in the late 2000s, the ‘Kiwi Share’ provisions have remained essentially unchanged.

Despite theoretical and empirical economic evidence of the incompatibility of universal service with competitive outcomes, and a body of literature detailing the effects of tariff structure on technology diffusion, the embeddedness of the ‘Kiwi Share’ provisions in the New Zealand institutional framework appears to have rendered them beyond the scope of consideration as possible explanators of observed strategic interactions and outcome. Yet as this paper shows, they have been pivotal. Although Williamson (2000) observes that such embedded institutions themselves may be long-lived, the asymmetric contracts that embody them as obligations on Telecom alone need not be immutable. Indeed, the extent to which the ‘universal service’ obligation has been made a charge on the industry as a whole via the TSO reflects the ability to bring about changes.

A question remains, however, about the sanctity of the ‘free local calling’ obligation. Its economic implications for the sector have arguably been greater than those of ‘universal service’, yet it has been specifically excluded from consideration in the lasted review of services. Its sanctity has likely contributed to the proclivity to seek institutional solutions at lower levels to the problems it has engendered. That the institutional solutions adopted so far have failed to adequately address the ‘problems’ and have led to the emergence of even more complex problems that are even less likely to be addressed by the solutions adopted is unsurprising.

Whilst it might be hoped that the ‘free local calling’ obligation will be eventually resolved by the replacement of traditional PSTN services with internet-based voice telephony services, its spectre remains in the form of mandatory ‘flat rate’ broadband tariffs. Aside from the difficulties of mandating flat-rate tariffs for one application on a multi-application platform, the New Zealand experience suggests that extensive mandatory and voluntary adoption of flat-rate tariffs poses challenges for the strategies of both firms and regulators as traffic volumes become more asymmetric between networks (e.g. with extensive use of video streaming as a substitute for broadcast television). The New Zealand lesson is embedding ‘flat rate’ broadband tariffs into broadband market cultures may be both distorting and costly, and potentially even more dangerously, overlooked as an underlying cause of ‘problems’ that emerge, simply because of common acceptance of their sanctity. In the New Zealand case, the extent of the distortions was exacerbated by the regulatory imposition of tariff structures that prevented market-based adjustments. The hope is that, in more competitive broadband markets, the temptations to impose asymmetric retail tariff obligations are less pressing.

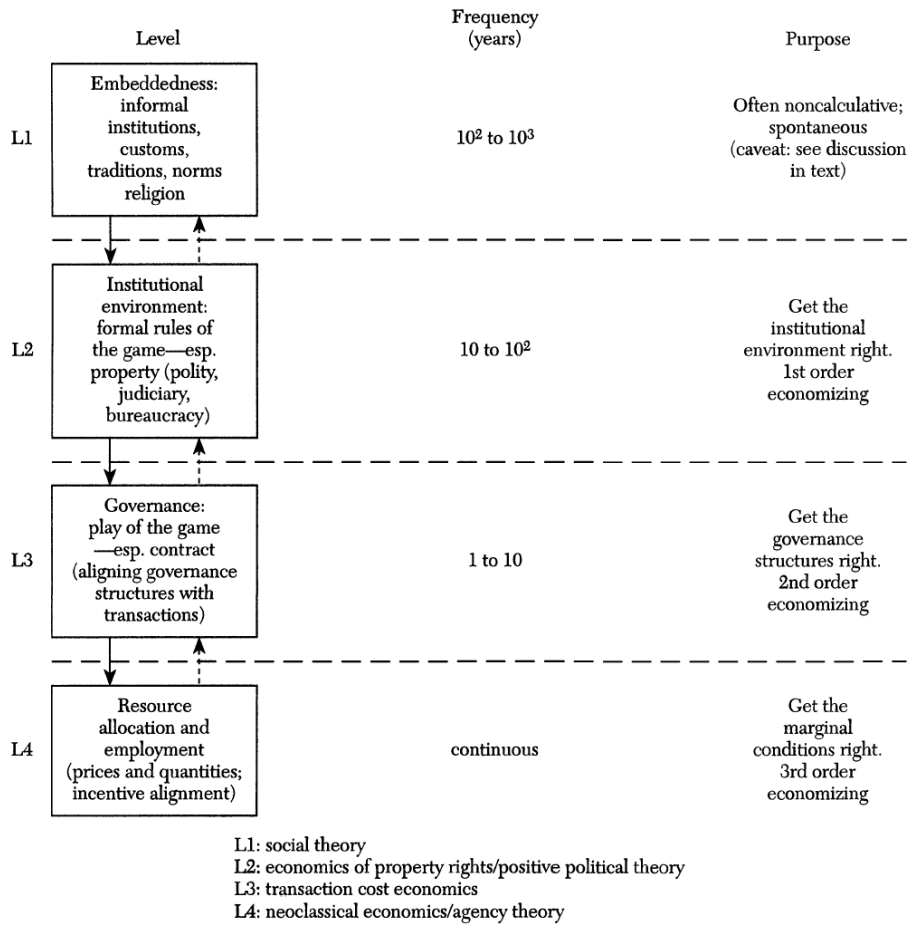
In sum, therefore, the New Zealand case study serves to further reinforce that asymmetric obligations on an incumbent, be they embodied in legislation, regulation or contract, do not create a ‘level playing field’ on which competition can play out. Whilst they may exclude the incumbent from adopting some strategic options that might otherwise be available, they open up the possibility of other strategic options to its entrant-competitors that would not otherwise exist. The ensuing interaction will not necessarily conform to textbook patterns of behaviour or outcomes, and will be contingent upon the emergence of other exogenous factors (e.g. technologies) that affect the balance of powers in the industry. Dynamic competition is an inherently unbalanced game of strategic interaction by parties each striving to gain the upper hand. If asymmetric obligations provide the opportunity, either party will utilise the asymmetry to gain competitive advantage, as has been evidenced in the case of New Zealand’s ‘Kiwi Share’. If legislation, regulation and contract design fail to take account of the strategic possibilities invoked, the outcomes may be very different from those expected.

## References

- Blanchard, C. (1995). Telecommunications regulation in New Zealand: light-handed regulation and the Privy Council's judgement. *Telecommunications Policy* 19(6), 456-75.
- Boles de Boer, D., Enright, C., & Evans, L. (2000). The performance of Internet Service Provider (ISP) markets of Australia and New Zealand. *Info* 2(5), 487-95.
- Boles de Boer, D., & Evans, L. (1996). The Economic Efficiency of Telecommunications in a Deregulated Market: the Case of New Zealand. *Economic Record*, 72(216), 24-39.
- Commerce Commission. (2003). Telecommunications Act 2001 Section 64 review and schedule 3 investigation into unbundling the local loop network and the fixed public data network Final Report. Wellington, New Zealand. Available on <http://www.comcom.govt.nz/IndustryRegulation/Telecommunications/Investigations/LocalLoopUnbundling/ContentFiles/Documents/finalreport.PDF>.
- Covec (2004). Benchmarking Telecom's UPC service. Available on [http://www.comcom.govt.nz/IndustryRegulation/Telecommunications/Investigations/Unbundling-PartialCircuits/ContentFiles/Documents/Final%20Draft%20Report%20\(August%204%202004\)%20-%20UPC%20Benchmarking.pdf](http://www.comcom.govt.nz/IndustryRegulation/Telecommunications/Investigations/Unbundling-PartialCircuits/ContentFiles/Documents/Final%20Draft%20Report%20(August%204%202004)%20-%20UPC%20Benchmarking.pdf).
- Dixit, A., & Nalebuff, B. (1991). *Thinking strategically: the competitive edge in business, politics and everyday life*. New York & London: W. W. Norton & Company.
- Economides, N., & White, L. (1995). Access and interconnection pricing? How efficient is the "efficient component pricing rule"? *Antitrust Bulletin* 40(3), 557-79.
- Enright, C. (2000). Strategic Behaviour of Internet Service Providers in New Zealand and the Performance of this Market. Wellington, New Zealand: New Zealand Institute for the Study of Competition and Regulation. Available on <http://www.iscr.org.nz/navigation/research.html>.
- Evans, L., Grimes, A., Wilkinson, B., & Teece, D. (1996). Economic reforms in New Zealand 1984-1995: the pursuit of efficiency. *Journal of Economic Literature* 34 (December 1996), 1856-1902.
- Evans, L., & Quigley, N. (2000). Contracting, incentives for breach and the impact of competition. *Journal of World Competition* 23(2).
- Farrell, J. (1996). Creating local competition. Available on <http://law.indiana.edu/fclj/pubs/v49/no1/farrell.html>
- Hausman, J. (2002). Asymmetric regulation of related services. In Crandall, R., & Alleman, J. (eds) *Broadband: should we regulate high-speed internet access?* (pp 129-156) Washington, DC: AEI-Brookings Joint Center for Regulatory Studies.
- Howell, B. (2008). From competition to regulation: New Zealand's telecommunications sector performance 1987-2007. Paper presented at the International Telecommunications Society European Regional Conference, Rome, Italy, September 17-20, 2008. Available on [http://www.iscr.org.nz/f439,12724/12724\\_From\\_Competition\\_to\\_Regulationbh230708.pdf](http://www.iscr.org.nz/f439,12724/12724_From_Competition_to_Regulationbh230708.pdf)
- Howell, B. (2008a), The role of price structure in telecommunications technology diffusion. Paper presented at the International Telecommunications Society European Regional Conference, Rome, Italy, September 17-20, 2008. Available on <http://www.iscr.org/nz>.
- Howell, B. (2007). *A Pendulous Progression: New Zealand's Telecommunications Regulation 1987-2007*. Wellington, New Zealand: New Zealand Institute for the Study of Competition and Regulation. Available from <http://www.iscr.org.nz>.
- Howell, B. (2003). Building best practice broadband: bringing infrastructure supply and demand together. Wellington, New Zealand: New Zealand Institute for the Study of Competition and Regulation. Available on <http://www.iscr.org.nz/navigation/research.html>

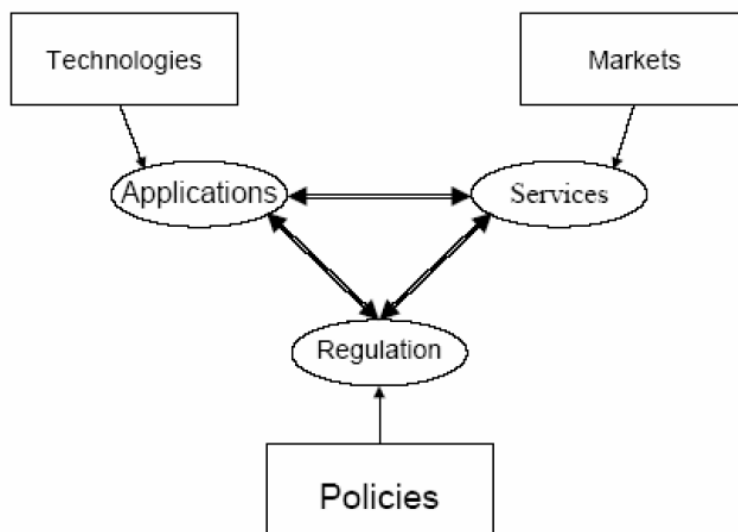
- Howell, B., & Obren, M. (2003). Telecommunications usage in New Zealand 1993-2003. Broadband diffusion: Wellington, New Zealand: New Zealand Institute for the Study of Competition and Regulation. Available on [http://www.iscr.org.nz/f212,4362/4362\\_nz\\_telecommunications\\_usag\\_090703.pdf](http://www.iscr.org.nz/f212,4362/4362_nz_telecommunications_usag_090703.pdf)
- Howell, B., & Sangekar, M. (2008). Telecommunication market evolution in Finland and New Zealand: unbundling the differences. Wellington, New Zealand: New Zealand Institute for the Study of Competition and Regulation. Available on [http://www.iscr.org.nz/f436,12631/12631\\_Market\\_Evolutions\\_BH\\_080708.pdf](http://www.iscr.org.nz/f436,12631/12631_Market_Evolutions_BH_080708.pdf)
- Karel, A. (2003). The development and implications of free ISPs in New Zealand. Wellington, New Zealand: New Zealand Institute for the Study of Competition and Regulation. Available on <http://www.iscr.org.nz/navigation/research.html>.
- Koppenjan, J., & Groenewegen, J., (2005). Institutional design for complex technological systems. *International Journal on Technology, Policy and Management*, 2005, Fall, pp. 11-34.
- Laffont, J.-J., & Tirole, J. (2002). Competition in telecommunication. MIT Press, Cambridge, Massachusetts.
- Melody, W. (2002). Building The Regulatory Foundations for Growth in Network Economies. World Dialogue on Regulation for network Economies Discussion paper #0201.
- Milgrom, P., & Roberts, J. (1992). Economics, organization and management. Englewood Cliffs, New Jersey: Prentice-Hall. Ministry of Commerce & The Treasury. (1995). Regulation of access to vertically-integrated natural monopolies. Wellington, New Zealand: Ministry of Commerce; The Treasury; available on [http://www.med.govt.nz/templates/MultipageDocumentPage\\_4560.aspx](http://www.med.govt.nz/templates/MultipageDocumentPage_4560.aspx)
- Ministry of Commerce & The Treasury. (1995). Regulation of access to vertically-integrated natural monopolies. Wellington, New Zealand: Ministry of Commerce; The Treasury. [http://www.med.govt.nz/templates/MultipageDocumentPage\\_4560.aspx](http://www.med.govt.nz/templates/MultipageDocumentPage_4560.aspx)
- Ministry of Economic Development. (2006). Promoting competition in the market for broadband services. Wellington, New Zealand: Ministry of Economic Development. Available on <http://www.med.govt.nz/upload/36537/promoting-competition.pdf>.
- Miravete, E. (2003). Choosing the wrong calling plan? Ignorance and learning. *American Economic Review* 93(1), 287-310.
- New Zealand Institute of Economic Research. (2005). Telecommunications pricing in New Zealand: a comparison with OECD countries. Wellington, New Zealand: NZIER.
- Organization for Economic Co-Operation and Development (2008). Broadband growth and policies in OECD countries. Paris: OECD. Available on <http://www.oecd.org>.
- Organization for Economic Co-Operation and Development (2007). Communications Outlook 2007. Paris: OECD. Available on <http://www.oecd.org>.
- Organization for Economic Co-Operation and Development. (2001). The development of broadband access in OECD countries. Paper DSTI/ICCP/TISP(2001)2/FINAL. Paris: OECD. Available on <http://www.oecd.org>.
- Organization for Economic Co-Operation and Development. (2000). Local access pricing and e-commerce. Paris: OECD.
- Spiller, P., & Cardilli, C. (1997). The frontier of telecommunications deregulation: small countries leading the pack. *Journal of Economic Perspectives* 11(4), 127-38.
- Telecommunications Carriers' Forum (2008). Report on the Telecommunications Service Obligation for local service. 23 July 2008. Available on <http://www.tcf.org.nz/library/df101bd9-0668-452d-9227-e9e3b319d95d.cmr>
- Williamson, O., (2000). New institutional economics: taking stock, looking ahead. *Journal of Economic Literature* 38: 595-613.
- Wilson, A. (1994). Wire and wireless: a history of telecommunications in New Zealand, 1860-1987. Palmerston North, New Zealand: Dunmore Press.

**Figure 1. Economics of Institutions**



Source: Williamson (2000:597)

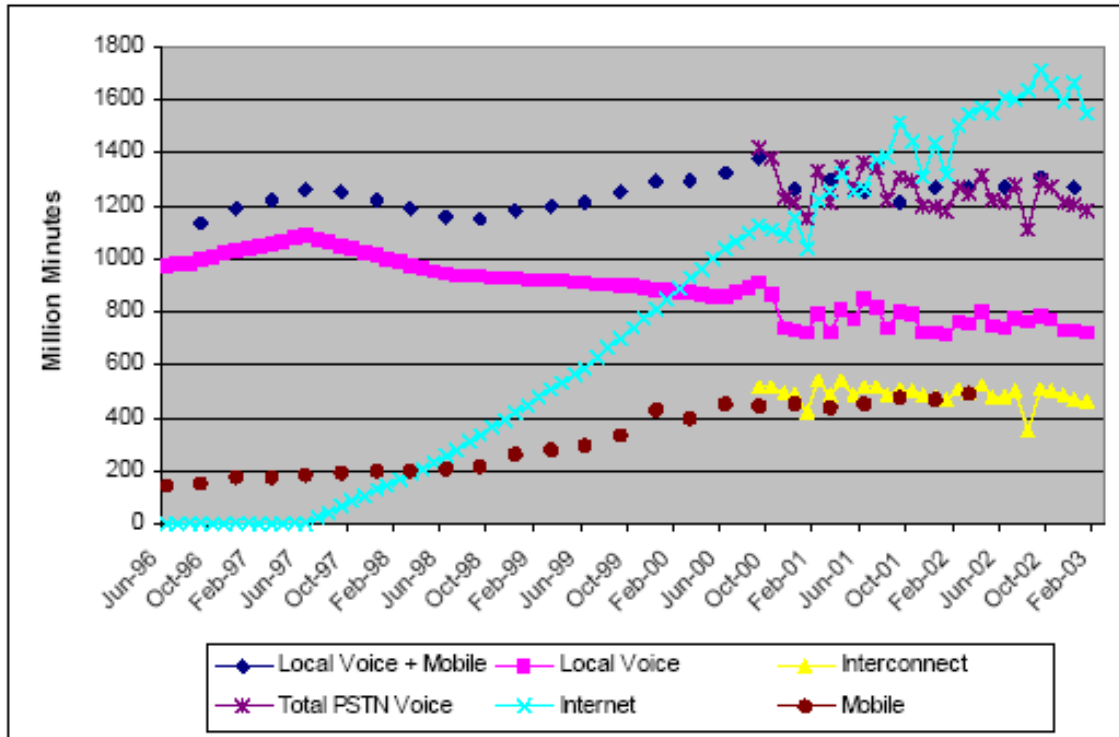
**Figure 2. Telecommunications Sector Interaction**



Source: Melody (2002:9)

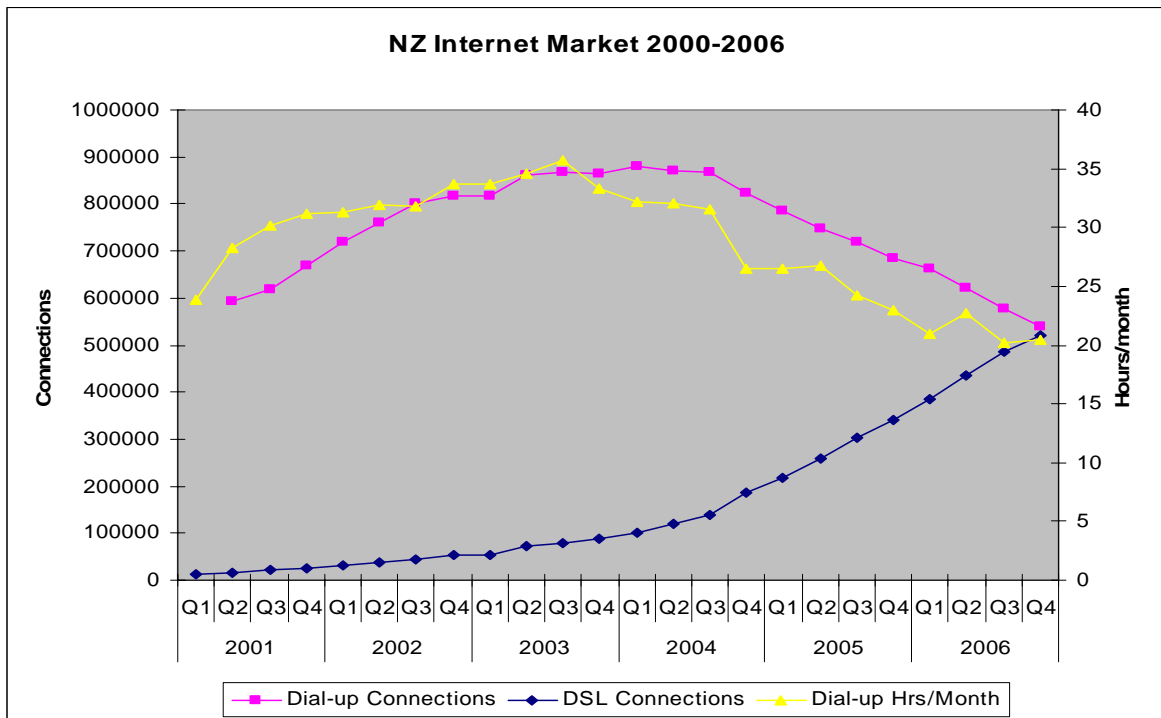


Figure 3. New Zealand Telephony Network Traffic 1996-2003



Source: Howell & Obren (2003:33)

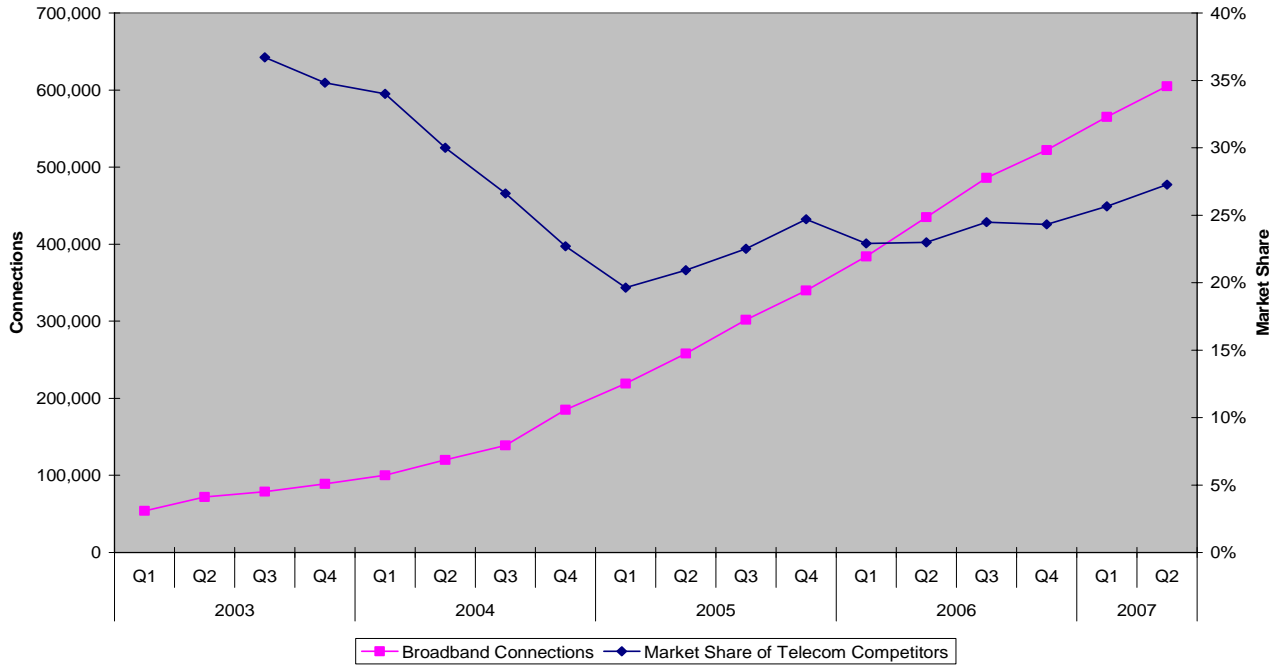
Figure 4



Source data: Statistics New Zealand ISP Surveys and Telecom Management Commentaries

Figure 5

New Zealand ADSL Market 2003-2007



Source data: Telecom Management Commentaries