ISCR

COMPETITION & REGULATION TIMES

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IN THIS ISSUE

DON'T IGNORE NZ'S e-LEADERSHIP

New Zealand is a world leader in preparedness for electronic commerce, according to recent research from NZISCR.[1]

The study benchmarks usage of three key infrastuctures - electronic banking, Internet and telecommunications - and finds New Zealand among the world leaders in all three. It concludes that, in the absence of other evidence, New Zealand has a sound base for developing world-leading electronic commerce.

New Zealand's e-commerce foundation was laid by the electronic backbone of the banking system - the unique, single, centralised, electronic payments system originally known as Databank. By linking all banks together in a central clearing system while maintaining competition at the retail end, the system was essential to the successful roll-out of the Automatic Teller Machines (ATMs) network, and then the Electronic Funds Transfer at Point of Sale (EFTPOS) system.

Unlike other countries, where rival ATM and EFTPOS systems compete, New Zealand's unified system creates advantages for retailers (who need only one set of hardware for EFTPOS) and consumers (whose cards work in every EFTPOS and ATM machine).

EFTPOS has been so successful that New Zealand leads the world in usage of this technology. There is one EFTPOS terminal per 54 New Zealanders (one per 85 in Australia) and we average 106 transactions per person per year (54 in Australia).

The ubiquity of EFTPOS means that ordinary New Zealanders have already learned to substitute information for cash. We are accustomed to keypads, visual display units, passwords and PINs. We have re-engineered our cash-handling habits, and learned to trust a centralised processing system with our information and our money.

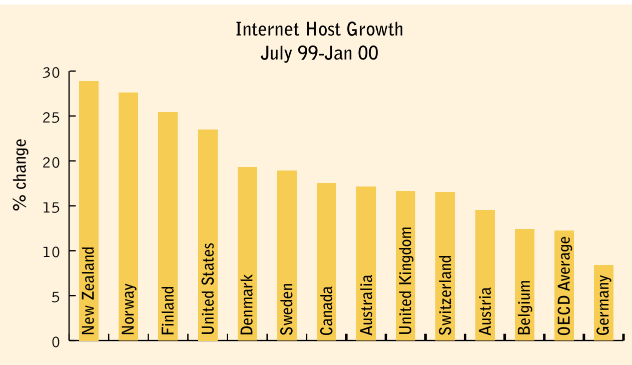
This technological familiarity is evidenced in New Zealanders' use of the Internet. The latest OECD figures have New Zealand at seventh in the world in the number of Internet hosts (computers connected to the Internet) per head of population, but with the fastest growth rate in the OECD. We have a clear lead over Australia (ninth, and growing only 60% as fast as in New Zealand).

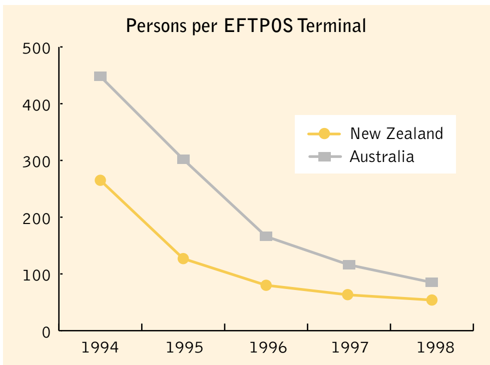
New Zealand also has more domain names ("xxx.xx.nz" identifiers) per head of population than Australia, with annual growth also significantly ahead (88% versus 38%).

New Zealand is fourth in the world in the number of secure servers (required for safe cash and information-based transactions) by population. This is the only figure in which New Zealand trails Australia, which is third. (New Zealand's trading patterns may explain why fewer secure servers are based in New Zealand. We are a net importer, we export large amounts through single-desk sellers, and ours is a volatile fringe currency. New Zealanders may thus be more likely to buy and sell on foreign-based servers.)

The Kiwi Share's provision that protects unmetered local telephone calls has contributed to our uptake of e-commerce infrastructure. OECD research[2] rates unmetered local calling as contributing to high Internet usage in New Zealand, the United States, Canada and Australia. When Internet users do not pay a per-minute charge, there is no barrier to developing "always-on" usage habits. Internet users in these countries have more and longer on-line sessions than those in countries such as the UK and Sweden.

to page 9





RELEVANCE RULES. TRANSLATION TALKS.

GUEST EDITORIAL

What is the place of private and public research? Together!

Too many academics sit on the fringes, churning out work with little practical use (or, at least, not in a useable form) and commenting only with the genius of hindsight.

Likewise, business bemoans the lack of skilled labour and the perceived inconsistency of public policy.

Partnerships between business and academic institutions can provide a way through such problems.

Such partnerships have existed internationally for a long time, yet the lid is only slowly coming off the protected tertiary environment in New Zealand. Many universities still find it awkward to accept targeted funding.

Private funding for academic institutions can go a long way to ensuring that:

- the skills most in demand are being taught
- relevant research is being undertaken
- decisions are based on rigorous, independent analysis.

Done properly, such research can be world-class, not simply pandering to the interests that paid for them.

In my view, the model employed by the Institute for the Study of Competition and Regulation (ISCR) hits the right spot in several ways.

First, the ISCR method strikes a balance between research that is targeted yet untagged.

ISCR analyses competition and regulation in a fashion unrelated to the specific needs or preferences of its paying members. The research remains ISCR's own, and publication in refereed journals is one of the quality benchmarks. Independence and academic rigour are ensured.

Yet if the research deviates too far from issues that its members deem relevant, or if no one can understand the results, then ISCR runs the risk of losing membership.

Second, under the ISCR model, an organisation's annual subscription allows business to put its money where its mouth is. It is less credible to bemoan the lack of expertise in, say, competition law, if a firm is unwilling to fund research and education in that field.

Third, private funding can ensure that "research for research's sake" is not limited by what society is willing to support from general taxation.

Finally, in a small economy with limited human capital, international links are very important. Any specialised field may have only a handful of experts who can deal with a complex issue facing this country. Research through an academic institution increases the chance of these experts turning their attention to New Zealand issues.

That helps ensure that we have access to the world's best. And if the funding is targeted but untagged, that reduces the chance that the experts will be unduly influenced by a particular interest group.

If the work environment for academics is to be improved - and if academics want more say in the way things are run - then "relevance rules" and "translation talks".

By "relevance rules", I mean that, if you want research funds, then the research should be focussed on the areas of most interest in the field. These will generally be the pressing problems facing decision-makers.

There are many examples where academic

ADRIAN ORR

research has simply ignored the main question. I was often frustrated as chief economist of the Reserve Bank of New Zealand when trying to engage constructively with academics in New Zealand. Often, it was simply quicker to commission work in-house, albeit at the cost of lower quality or of losing focus on other issues.

By "translation talks", I mean that even the best research will go unheard if people cannot understand the results. A lot of sensible advice simply goes astray because academic researchers do not deliver their results in a digestible, timely fashion for busy decision-makers. This "missing of the minds" happens every day in government and boardrooms.

This quarterly publication - ISCR's *Competition and Regulation Times* - is an excellent example of how to translate difficult concepts into tractable language.

Partnership between business and public research institutions is a giant leap forward for New Zealand.

When the innovator meets the entrepreneur, rewards are never far away. Let's see more of it.

Adrian Orr is chief economist of WestpacTrust Bank, and chairs ISCR's board of trustees.

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YES, VIRGINIA,
CHRISTMAS REALLY IS A DEAD(WEIGHT) LOSS

Judy Bethwaite delves into her Christmas stocking to see whether Santa's offerings match her expectations, and asks the eternal question: "Who bears the cost when Santa gets it wrong?"

I reckon that Scrooge was extremely fortunate to have help from three spectres to hit on the right gift for the Cratchett family (or, as I would encourage my ECON130 students to put it, to match his utility-of-gift-giving function with the Cratchetts' utility-of-receiving function).

My Auntie Jane, despite decades of practice, still hasn't got this right. She does not realise that the value I place on expensive woollen socks with purple dancing teddy bears on an orange background (like the adorable pair she gave me last year) differs significantly from the price she paid for them plus the effort that went into choosing the gift.

If only Jane could be like my Great Aunt Eileen, who gives me cash. She knows exactly the value of what she is giving me, and so do I. And I can go directly to the china department of Kirkcaldie's at 9am on December 27 without the inconvenience of organising an exchange in the hosiery department first.

So maybe Scrooge was right: Christmas really is a bunch of inefficient humbug. The mismatch between the value expended by the giver and the value obtained by the recipient creates a deadweight loss to society.

If Auntie's socks lie unused forever in my drawer (they will!), then the resources that have been invested in them lie permanently idle. Even if I exchange them for cash, I have to expend additional resources arranging the exchange.

I am not alone. The queues at department-store exchange counters testify to the fact that other lucky recipients are trapped in the same value mismatch. If we add together the total of all of these mismatches, then it can be seen that Christmas generates a huge efficiency loss to society.

Joel Waldfogel[1] was sufficiently concerned about this to estimate what the real economic cost of Christmas might be. He calculated that a deadweight loss of between 10% and 33% of the value of gifts could be expected. (He found that gifts from friends and "significant others" tend to be the most efficient, with non-cash gifts from members of the extended family the least.)

In 1993, with combined Christmas and Hanukkah expenditure in the United States amounting to approximately $US40 billion, his conservative estimate put the deadweight loss of Christmas at between a tenth and a third of the deadweight losses arising from the income-tax system. The thought that Santa might be conspiring with Michael Cullen and my Auntie Jane to wreck the New Zealand economy must knock the joy of Christmas out of even the truest believer.

Fortunately, however, the story is not all bleak. As the Ghost of Christmas Future shows us, the pleasure that givers generate for themselves in picking the ideal gift mitigates to some extent the loss caused by the recipient's failure to value the gift so highly. (Great Aunt Eileen's cash is highly efficient from my point of view, but she gets none of the sadistic pleasure Auntie Jane must derive from selecting the most garish socks in the display.)

And, to be fair, the equation is also balanced out by the additional margin of pleasure derived when a loved one gets the gift-giving just right. (This year, if Great Aunt Eileen gives me the Metallica CD I've always wanted, her attention to my needs will provide greater emotional satisfaction than receiving an envelope with $29.95 inside it.)

So, as I spend hours scouring Wellington for the perfect gift for my daughter, I will cherish every moment, secure in the knowledge that my shopping enjoyment, combined with her pleasure at the perfection of my selection, will push Christmas towards economic equilibrium - whatever Auntie Jane decides to give me this year.

1 Waldfogel, J. "The Deadweight Loss of Christmas". American Economic Review 83 (5). 1993. pp1328-1336.

IN SEARCH OF A HEALTHIER CONSTITUTION

SOMEWHERE BETWEEN THE ELECTORAL COLLEGE AND MMP

GUEST ARTICLE

CHARLES CANGIALOSE[1]

The recent US presidential election failed to establish a winner within the 18-hour time slot that modern media allow for such matters. Many touted this "failure" of the Electoral College system as a potential constitutional crisis.

As an American and a health economist, I pose the seemingly incongruous question, "Are there any lessons for health reform in New Zealand from the recent US Presidential Election?"

Health reform in New Zealand and the recent US elections have two things in common:

- They are both the result of processes that attempt to aggregate individual preferences to arrive at societal decisions.
- In both cases the outcomes may be damaging to their respective countries.

The potential damage of health reform in New Zealand is its frequency and its almost exclusive focus on "reforming" institutional structures.

New Zealand's health sector is undergoing its fourth structural reform within the last 15 years. Like the first three, the current reforms will be expensive, yet little except political ideology suggests that the current "reforms" will deliver improved health services and health outcomes.

The health-care policy literature is beginning to analyse health-care reforms not in terms of improving efficiency within the health sector, but in terms of purely political power contests.[2,3] This approach is, I believe, instructive in the New Zealand case.

Since Arrow published "Social choice and individual values" in 1951[4], it has been known that electoral processes do not satisfy even a very short list of criteria[5] that we might reasonably expect of such processes. Decisions made by representatives imperfectly aggregate the preferences of (and information from) voters, and thus arrive at decisions that do not have broad support. The recurring health reforms in New Zealand and the recent electoral impasse in the US are thus *predictable* products (or by-products) of the systems that produced them.

The Electoral College in the US was developed to overcome the huge information barriers in the 1780s, when it might take three to six months for information to disperse throughout the thirteen original states. For this reason, the Electoral College is a proxy voting scheme under which each state elects "electors" to choose the President at a convention (the Electoral College). Modern information transfer has made the Electoral College a relic, but the inertia of US constitutional government is such that it has withstood many attempts at reform.

The frequency of health care reform in New Zealand is a product of New Zealand's own unique constitutional arrangements: a unicameral structure, triennial elections and (since 1996) mixed member proportional representation (MMP). It also results from the information problems that are inherent in all health systems: the outcomes from intervention - whether at the personal or societal level - are difficult to observe and measure, and may not be evident for many years after the intervention occurs.

I will deal with the constitutional part first. Under MMP, no one political party in New Zealand has been able to achieve an absolute majority at the polls. Voters have elected a Parliament, and then parties have engaged in political trades in order to form a Government.

The US Electoral College decisively elects a President from only two choices, with the policy platform of one candidate prevailing. But in New Zealand, Government policies that result from political horse-trading may not be consistent with *any* of the policy platforms that were offered to the electorate. This is akin to the Electoral College constructing a President that is, say, one-third Republican and two-thirds Democrat. Importantly, the political trading results in information about voter preferences being diluted at each political trade.[6]

Additionally, in New Zealand, the dominance of the Cabinet over Parliament and the unicameral system (with no upper House such as the US Senate or the British House of Lords) allow party political agendas to override popular preferences unchecked for the Government's term of office.

MMP has revealed how easily disproportionate weight can be given to the policies of minor parties. Under the 1996 coalition agreement, New Zealand First (17% electoral support) secured significant parts of its health policy in negotiations with the National Party (44% support). This included a significant restructuring resulting in the creation of a single Health Funding Authority, charged with setting priorities for health spending.

Political power has proven to be short-lived under MMP. Minor parties have thus been anxious to make their mark on the political landscape.

The effects of the latter are particularly evident in the health sector, and this is where the information problem inherent in health becomes relevant: it is inherently impossible for any Government to show that its policies have improved health outcomes within a three-year term, but a Government can make its mark by "reforming" health institutions within this timeframe.

The health system thus bears the inevitable by-product of New Zealand's constitutional environment: unchecked structural reform becomes an inevitable consequence of changes in the balance of power in Parliament.

So where is the lesson for New Zealand health reform in all of this? Somewhere between the inertia of the US system (which maintains an anachronistic Electoral College) and the New Zealand system (which encourages recurring reform before the results of past reforms can be known) lies a middle path.

As a veteran of one New Zealand election, I believe that New Zealanders, like Americans, are concerned about the people who are unable to access publicly funded health care services, where rationing is inevitable. Health economists call this issue "prioritisation" - that is, *who*'s in or out (patients), and *what*'s in or out (health and disability services). These trade-offs have to be made regardless of the institutional structures that are supposed to resolve them. What's more continual restructuring cannot address these vexing prioritisation questions. Indeed, continual restructuring might be used as a convenient way of avoiding the tough decisions of who's out and what's out.

I believe that creating a single, stable institution to set health priorities provides a potential middle path. Such an institution would be distanced from, but not immune to, the Government-forming process. Its mandate would be to make prioritisation decisions within a framework that can elicit information from New Zealanders about their preferences.

We Americans may be stuck with the imperfections of the Electoral College. New Zealanders have the option of a better way to incorporate society's preferences into decisions about priorities in health, without being trapped into frequent cycles of institutional reform.

1 Charles Cangialose is Director of the Health Services Research Centre, a joint venture of Victoria University and the Wellington School of Medicine. He was previously the Chief Economist at the Health Funding Authority.

2 Geva-May, I; and A Maslove. "What prompts health care policy change? On political power contests and reform of health care systems (the case of Canada and Israel)". The Journal of Health Politics, Policy and Law 25:717-41. 2000.

3 Bethwaite J, Howell B, Cangialose C. (2000). A discussion paper upon which some of this article is based is available at www.iscr.org.nz under "work in process".

4 Arrow, Kenneth J. "Social choice and individual values." 1951. New York: Wiley.

5 Specifically, these four criteria are:

a. Alternatives that make someone better off without making anyone else worse off will be preferred.

b. Non-dictatorship (the preferences of no single agent dominate the choice of alternative).

c. Unrestricted domain (the order of preferences is operative over all relevant choices and transitive).

d. Independence (the preference ordering should not be affected by the existence of an alternative outside of the choice set).

6 That is, the dilution of information that is characteristic at each step of a principal-agent chain. Brynjolfsson, E. (1994). "Information assets, technology and organisation". Management Science 40(12). 1645-1662.

HAS CORPORATISATION MADE OUR PUBLIC HOSPITALS SICK?

Bronwyn Howell[1] asks why the corporate model, successfully used to run private nonprofit hospitals in New Zealand, has failed to significantly improve the performance of our public hospitals.

BRONWYN HOWELL

The answer to that dilemma appears to lie with inadequate understanding of the governance requirements of nonprofit organisations. In particular, the corporate public hospital structure failed to balance adequately the interests of the patients ("beneficial owners") who use the hospitals and the taxpayers ("legal owners") who bear the costs and risks.[2]

The issue is topical, because the health sector is being reformed once again. Changes to public hospitals are giving them the ability to both purchase and provide services, and reforming their Boards to include more local responsibility for deciding how health funds are spent.

However, reforms undertaken without a clear understanding of the nature of interactions between hospital stakeholders, and the specific governance requirements of public and private nonprofit organisations, may merely perpetuate past problems.

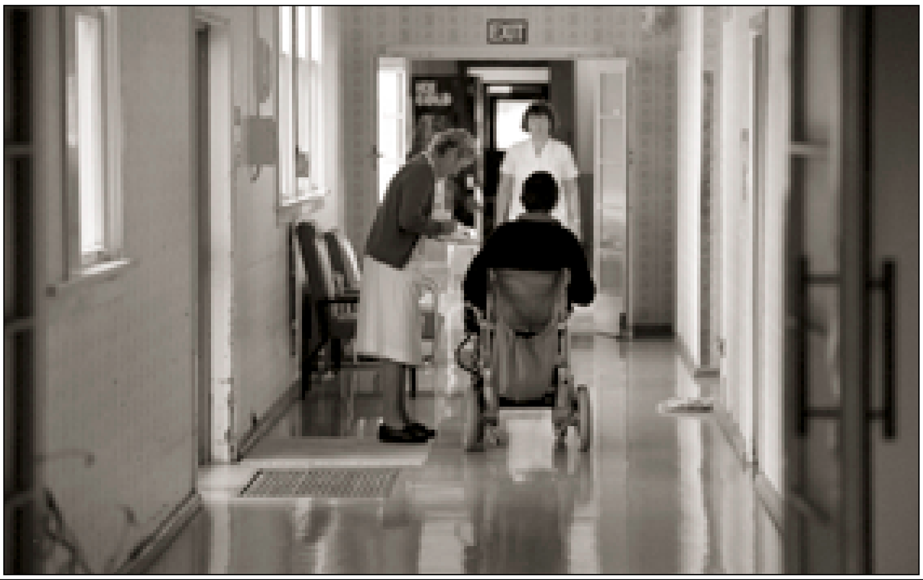
There is little doubt that the efficiency gains of public hospitals have been disappointing since the reforms of the early 1990s. As the Government's corporate watchdog, the Crown Company Monitoring Advisory Unit, identified as early as 1996, the changes "... have yet to yield the original expectations. By a range of measures (e.g. average length of stay, personnel costs, bed numbers) the pace of performance seems, if anything, to have weakened since the advent of the reforms".

The public hospital companies as a whole finally broke even financially for the first time only in the most recent financial year.[3]

Many causes have been advanced for this state of affairs. The theories include:

- The profit motive and commercial structures are inappropriate for public hospitals.
- The separation of purchaser and provider functions creates added transaction costs without enough benefit.
- Commercial managers didn't understand the complexities of the health sector.
- The reforms didn't do enough to control the power of doctors.

to page 6



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Each of these explanations may have some validity, but they nonetheless do not explain why the same corporate model has been successful in non-government nonprofit hospitals in New Zealand and overseas, but failed when applied in our public hospitals.

Let it first be said that there are sound economic reasons why hospitals might be best run as nonprofit organisations.

In health, consumers benefit when the power of a strong stakeholder (such as doctors) is balanced by strong ownership rights vested in another stakeholder group (such as Trust ownership).

Consumers of health care suffer severe "information asymmetry" because they know so much less than doctors. Even conscious patients with normal faculties are in a poor position to determine what kind of service they need, how much they need, and to bargain over how much to pay for it. Patients can be severely disadvantaged if the strong stakeholder can exploit the information asymmetry for pecuniary gain.

Patients thus have strong incentives to own the hospital. Yet patients as a group are too diverse, and their benefit too uncertain, for them truly to control the process of owning a hospital.

This is where the concept of the nonprofit organisation comes in. It creates "virtual owners", where managers of the firm hold it in trust for their beneficiary customers.

The nonprofit firm enables the beneficiary-owner to balance the power of a strong stakeholder who could otherwise act opportunistically. As has been said, "the nonprofit firm abandons any benefits of full ownership in favour of stricter fiduciary constraints on managers"[4]. These "fiduciary constraints" simply describe the relationship between beneficiary and trustee, where the latter works in good faith for the benefit of the former.

In New Zealand, two forms of nonprofit hospitals have developed:

- About 95 percent of hospital services are provided in the state-owned public hospitals.
- Most of the remaining five percent are private, nonprofit enterprises owned by churches, charities, trusts or mutual organisations.

"IN SOME CASES DOCTORS - THE VERY STAKEHOLDERS WHOSE POWER THE NONPROFIT STRUCTURE IS DESIGNED TO BALANCE - ARE PERCEIVED TO HAVE INCREASED THEIR ALREADY ADVANTAGEOUS POSITIONS."

It is noteworthy that corporatised public hospitals in New Zealand do not mirror the fiduciary relationships of the private nonprofit hospitals. It is not surprising that patients feel their interests have not been protected.

In the private model, trustees manage the hospital within strictly defined fiduciary duties. These preserve the rights of patients and minimise the scope for exploitation by any individual. The trustees are accountable via published statements and a generally public election process. Some such organisations have formal memberships who can exercise oversight more directly.

New Zealand public hospital accountabilities are less clear. The hospital board is appointed by and is solely accountable to the shareholding Minister as agent of the taxpayer "legal owners". However, the politicians' accountability for hospital performance is diluted amongst all other political ownerships. Furthermore, the appointed board and non-clinical management structure does not enable direct representation from patients or their advocates as "beneficial owners" of the hospitals, as is possible in the private nonprofit model.

Private nonprofit hospitals typically also have two additional stakeholder classes that are not present in the public sector in New Zealand: paying customers and donors. They exert additional performance discipline on the board and management. If fees are too high or service poor, patients can take their money to another private nonprofit hospital. Donors can equally withdraw their support if they do not like the way their support is being applied. These constraints bind the managers and trustees in pursuit of beneficiaries' interests.

New Zealand's public hospitals have had no such constraints. The "customer" is the Health Funding Authority - another nonprofit, publicly owned body with no direct monitoring or enforcement by the pivotal stakeholder, the patient-beneficiary.

Another difference is that, generally speaking, the private nonprofit hospitals are masters of their own destiny. They can raise their own capital without having to plead with a Parliament which may decide to build a school or police station instead. They can move freely into and out of particular markets, choosing the quantity and quality of care that they will deliver. This decision will be based upon a combination of the desires of the beneficial owners and customers (patients) and those of the legal owner, rather than the dictates of a third-party purchaser.

Another crucial difference is that the private nonprofit hospitals are separate trading organisations. They survive only if they meet their financial and social objectives. They can and do go broke, and then they cease to exist.

This financial imperative helps align the interests of all stakeholders, no matter how diverse their interests may otherwise be. Trustees, staff, donors and patient-beneficiaries all have an interest in ensuring financial viability because they all lose if it is not achieved.

No such discipline exists in New Zealand's public hospitals. A soft budget constraint applies, at least in part because of the perception that taxpayers have deep pockets and that Governments lose their resolve in the face of potential political embarassment. (If you doubt that, consider how many poorly performing New Zealand hospitals were allowed to close their doors and call in the receivers over the last 10 years.)

All of this highlights a wide gap in the discipline of public hospital management, with three significant impacts.

First, the two ownership issues - beneficial and legal - tend to be resolved in isolation, without the checks and balances of the other. Issues become a two-player game - management versus staff, for example - with the interests of the beneficiaries at best secondary.

Second, the cost of hospital ownership has risen. In part this is a result of the purchaser-provider split. Information critical to decisions and monitoring, which a private nonprofit organisation would produce in order to meet its fiduciary responsibilities, are instead produced separately by the providers and purchasers. This is more expensive and also compromises the quality of the information.

Third, doctors have moved to fill the void where patient-beneficiary representation used to be. They are the patient-advocates closest to management and the Board, but act with neither the discipline of a defined accountability process nor the constraints of fiduciary duties. It is not surprising that in some cases doctors - the very stakeholders whose power the nonprofit structure is designed to balance - are perceived to have increased their already-advantaged positions.

This diagnosis does not suggest the need for radical reconstruction. The lack of performance so far is not a structural failing of the model, and does not justify replicating the ways of the past. Properly applied, the corporate model can achieve operational efficiency gains, public accountability and patient satisfaction in our public hospitals just as it does in private ones.

> "THE NONPROFIT MODEL CAN BE SUCCESSFUL IN HOSPITALS. IN NEW ZEALAND'S PUBLIC HOSPITALS, TO DATE, IT HAS NOT BEEN PROPERLY APPLIED."

The key is that boards must be made more accountable to patient-beneficiaries, not just to the legal owner. Two pointers:

- Some form of locally elected membership on boards is desirable - but the elected members must not be tokens. As in the private sector and the State-Owned Enterprises, hospital boards must have the freedom to make decisions and be held accountable for their mistakes directly by the constituents affected, otherwise the patient-beneficiaries have no power.
- Patient power can also be improved by letting them voice their preferences by exiting and taking their government funding elsewhere. Without this, the link between financial viability and health purchasing and provision activities is lost.

The nonprofit model can be successful in hospitals. In New Zealand's public hospitals, to date it has not been properly applied.

The proposed DHB structures currently being implemented go some way towards addressing the requirements of local public accountability. However, the proposed structures still fail to give patients the ability to apply financial disciplines on publicly appointed boards by any mechanism other than through the political process.

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1 The author is a PhD student in the School of Economics and Finance at Victoria University of Wellington, and Principal Researcher at the New Zealand Institute for the Study of Competition and Regulation.

2 A fuller version of this article is available on the ISCR website at www.iscr.org.nz

3 Department of Statistics, Public Health Financial Statistics June 2000 quarter.

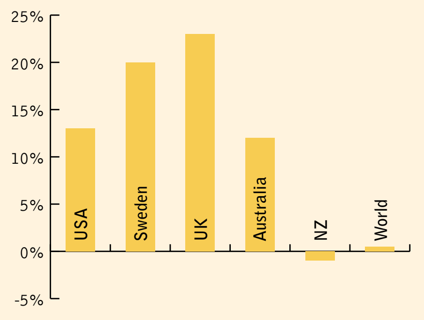
4 Hansmann, H. 1996. "The Ownership of Enterprise." Cambridge, Mass: Harvard University Press.

UNIQUE NEW ZEALAND
NEEDS UNIQUE COMPETITION LAWS

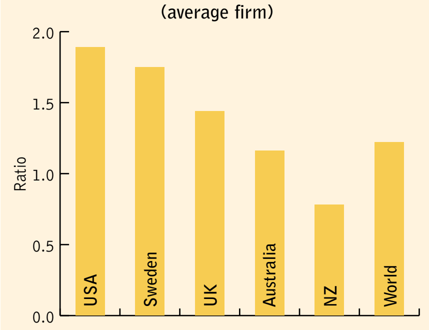
New Zealand's small size may be a significant and inherent "barrier to entry" with implications for the way we regulate firms, writes Prof Lewis Evans, Executive Director of ISCR.[1]

Selected Characteristics	UK	USA	Sweden	Australia	NZ
Population	58m	263m	8.8m	18m	3.8m
Land Area (sq km)	243,000	9.6M	450,000	7.7M	271,000
GDP(USD PPP)	1324	9190	203	463	69.2
GDP/Head	22.8	34.9	32.1	25.7	18.2
Firms: S&P database (1998)	1396	2561	188	331	60
Firms: ANZ database					400

Economic profit per unit of capital
(average firm)



Revenue/capital
(average firm)



It is generally accepted that countries' characteristics vary substantially, and that these differences should be taken into account when designing regulations and competition law thresholds.

Particularly important are *inherent* characteristics - such as population and geographic isolation - that are not influenced by competition law and regulation.

A study of a number of databases[2] comparing New Zealand's market structure and firm performance with the rest of the world (and especially with Australia, Sweden, the UK and the USA) showed that in New Zealand:

- markets have very few firms of reasonable size and therefore are relatively concentrated
- firms are tiny on a world scale
- firms are less profitable than in the four countries mentioned above, but profitability is on a par with companies worldwide
- firms use relatively more capital per unit of revenue across most industries
- firms have a relatively high operating profit per unit of revenue, especially compared with the four countries above
- firms have relatively high total costs per unit of revenue
- small firms have even higher costs per unit of revenue than large firms.

The figures tell a coherent story of a country for whom the size of its economy is a significant barrier to entry.

The data suggest that New Zealand industries lack economies of scale, especially compared with Australia, Sweden, the UK and the USA.

New Zealand firms need higher operating profit per unit of revenue in order to cover the cost of the capital, since sales are low relative to capital. This capital intensity may be surprising, but is plausibly explained by the fact that most industries require some base level of capital and the New Zealand economy is simply not big enough - in the absence of exports - to garner scale economies of any sort.

The small size of the New Zealand economy is indicated by the fact that there are 47 corporations worldwide with sales greater than New Zealand's GDP, and one with value added greater than New Zealand's GDP.

Dan Alger and Joanne Leung[3] have shown that, on the basis of population density alone, New Zealand's telecommunications costs per household would be higher than in the USA, UK and Australia, but less than in Sweden. Population density makes a big difference to costs — for example, if it were the only difference, the UK's telecommunications costs would be about 30% lower than New Zealand.

These results are characteristic of network industries, and imply that New Zealand's utilities sector will typically have firms with high capital relative to their output, high operating margins per unit of revenue (to produce a return high enough to meet high capital costs) and diseconomies of scale even if the optimal industry structure is in place. Indeed, this seems to be true for most, if not all, New Zealand industry sectors.

The effect of capital intensity on value added by firms and industry is amplified by New Zealand's relatively high cost of capital.

"Diseconomies of scale" apply where industry costs are high because the level of output is low. Diseconomies may arise because the capital required to service customers is large enough to service more customers. This is consistent with the New Zealand data. It may be that the

New Zealand market is so small that competing firms are either over-capitalised or have installed processes that are less efficient than they would be if servicing a larger market.

These findings must be viewed as tentative, but they have implications for effective regulation and competition law in New Zealand. To force firms in New Zealand to be small by New Zealand standards - say, by having low thresholds for mergers - is likely to raise costs for New Zealand consumers or make it difficult for New Zealand firms to compete with imports.

Furthermore, New Zealand industries will have to perform exceedingly well to meet the benchmarks set in other countries, especially the four countries singled out.

It may also be that joint-venture arrangements that capture economies of scale at one level of the industry while permitting members to compete at other levels are particularly advantageous for New Zealand. (An example is the Databank system, covered elsewhere in this issue.)

The e-commerce revolution may act to New Zealand's advantage if it results in a reduction in optimal size of firms, and if scale economies lie in communication networks.

These are simply suggestions at this stage, but it is important to better understand New Zealand's relatively unique structure and position in the world, in order to aid the design of competition, regulatory, economic and social policies.

1 This article is based on a presentation by Prof Evans and Terence Arnold QC at the recent ISCR Conference, "The Commerce Act at the Turn of the Century". An ISCR research paper on this subject from Prof Evans and David Boles de Boer is forthcoming (2001).

2 Particularly, but not exclusively, Standard & Poor's Compustat and the ANZ database of 400 New Zealand firms.

3 Alger, Dan; and Joanne Leung (1999). "The relative costs of local telephony across five countries". Available at www.iscr.org.nz under "research".

e-leadership from page 1

This, in turn, encourages a very competitive Internet Service Provider industry. New Zealand is a leader here as well, with more Internet users per head than Australia, lower prices than Australia over all ranges of access time[3], and lower prices than the United States over some ranges and types of services (such as lower-end ADSL and cable modems). This has also encouraged the development of content-based providers in New Zealand (the Dunedin digital-imaging cluster, for example, and internationally recognised website design firms such as Web Media).

The statistics show that New Zealand is not just poised to take advantage of electronic commerce; it is already among the elite in the field. Underpinning this is world-leading infrastructure, supported by ready acceptance by users.

The foundation has been laid. The question is whether New Zealanders can take the next step and utilise these advantages for real commercial gain.

1 Boles de Boer, David; Lewis Evans and Bronwyn Howell. "The State of e-New Zealand." Prepared as background material for the Ministry of Economic Development's recent e-Commerce Summit, and available on the NZISCR website at www.iscr.org.nz under "research".

2 Local Access Pricing and E-Commerce at www.oecd.org

3 Boles de Boer, David; Christina Enright and Lewis Evans. "The Performance of Internet Service Provider Markets of Australia and New Zealand." Available on the NZISCR website at www.iscr.org.nz under "research".

THE STATE OF OUR
STATE-OWNED ENTERPRISES

It is difficult to make simple generalisations about the performance of State-Owned Enterprises, a recent ISCR study[1] has found.

"The SOE model created probably the best environment in the last century for state-owned businesses to operate efficiently," says co-author Prof Lewis Evans, executive director of ISCR, "yet the most striking thing about our study is the wide range of performance by the SOEs. The companies had different starting points, and they were affected differently by changes to markets and regulatory conditions during the period we studied," he says.

The five SOEs studied were Airways Corporation of New Zealand Ltd, Landcorp Farming Ltd, Television New Zealand Ltd, Vehicle Testing New Zealand Ltd and New Zealand Post Ltd.

Key points from the study are:

- One of the SOEs produced steady productivity gains that are very good by any standard. Another showed good productivity gains through most of the period, but its productivity fell with a change in market conditions towards the end of the period. Two of the SOEs did not produce good productivity growth.
- There is some evidence that the threat of competition induced productivity gains, but this was not universal. The transition to a competitive market led to costs that reduced measured productivity.

Television New Zealand Ltd

Television New Zealand is the only SOE in the study that was in a competitive environment for all of its business over the whole period. It showed steady, but not spectacular, gains in productivity.

Airways Corporation of New Zealand Ltd

Airways Corporation showed strong productivity gains through the whole period. It faced the least competition of the SOEs in the study. Its productivity gains were shared between shareholding taxpayers and Airways' customers: profitability improved, and real prices fell through a policy of price restraint.

New Zealand Post Ltd

For most of the period, New Zealand Post Ltd had fairly strong gains in productivity, but it flattened off in 1996. This performance may have been affected by investments in improved customer service that were not reflected in New Zealand Post's measured output for the productivity calculation.

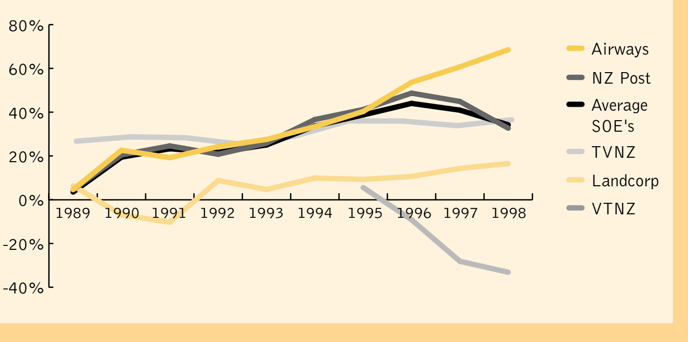
Vehicle Testing New Zealand Ltd

Vehicle Testing New Zealand lost productivity throughout the 1995 to 1998 period, although it remained profitable by increasing its revenue. It was the only SOE in the study to raise its prices. Presumably, more stringent regulatory

Productivity

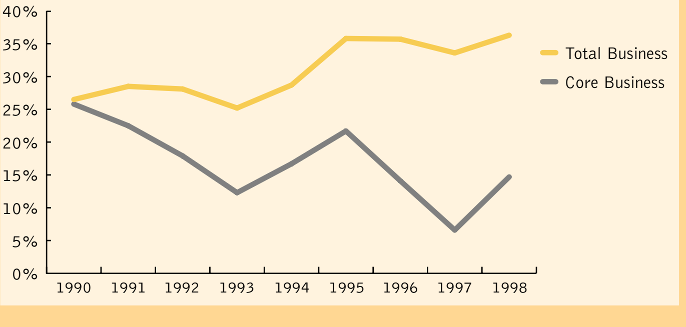
	Cumulative Productivity	Average Productivity	Period of Analysis
Airways Corporation	+65.7%	+6.6%	1988 - 1998
Landcorp Farming	+16.0%	+1.4%	1988 - 1998
TVNZ	+36.3%	+3.5%	1989 - 1998
Vehicle Testing	-33.1%	-6.6%	1994 - 1998
New Zealand Post	+32.3%	+3.23%	1988 - 1998
Tranz Rail	+68.0%	+7.0%	1989 - 1998
Telecom NZ	+63.0%	+9.0%	1987 - 1993

Cumulative Productivity Growth



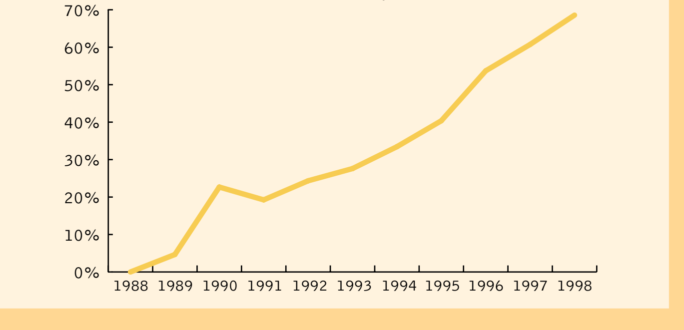
Television New Zealand

Cumulative Productivity Growth



Airways Corporation of New Zealand Ltd

Cumulative Productivity Growth



requirements enforced during the period also affected its performance. The company has since been sold.

Landcorp Farming Ltd

Landcorp Farming Ltd diversified into meat processing, but ceased this activity by the end of the study. This change created record-keeping problems, making it impossible to assess the productivity of the business overall, and difficult to reliably assess productivity for the farming operation as opposed to the off-farm activities. The performance of the farming operation performance appeared to be quite flat.

All SOEs in the study attempted some form of diversification over the period. Those at the cutting edge of changing information technology, such as New Zealand Post Ltd and Airways Corporation, have systematically sought to maintain or advance their business in this way. Two SOEs (Landcorp Farming and Vehicle Testing NZ) were not successful at diversification, but developments in TVNZ's subsidiary Broadcast Communications Ltd were impressive over the period and materially contributed to TVNZ's solid performance.

The study contrasted this group of SOEs with Telecom and Tranz Rail, two former SOEs that had been sold. None of the five SOEs studied achieved the productivity gains of these two counterparts. Over the period 1989 to 1998, the five SOEs averaged productivity growth of 3.4% per annum. Tranz Rail's was 7.5% per annum over the same time frame, and Telecom's was 9.5% in the 1987 to 1993 period. (Of all the companies under discussion, Telecom was in the industry with the greatest scope to gain from technology improvements.)

> "NONE OF THE FIVE SOEs ACHIEVED THE PRODUCTIVITY GAINS OF TELECOM AND TRANZ RAIL, TWO FORMER SOEs THAT HAD BEEN SOLD."

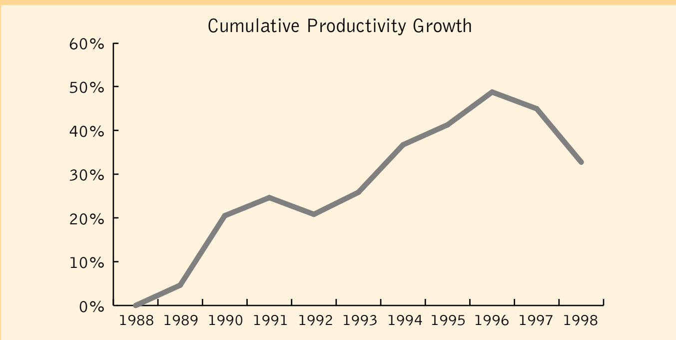
"Because each of the SOEs faced unique challenges and opportunities, only limited cross-company comparisons can be made," Prof Evans says. In order to draw general conclusions and to make valid comparisons of performance, ISCR sees value in further study of factors such as:

- the different regulatory regimes applying to these SOEs, and the different degrees of change in those regimes
- the market conditions each SOE faces, and their market strategies
- relationships between the managers, Boards and their owners (shareholding Ministers)
- information disclosure
- the different rates at which new technology affects the relevant industries.

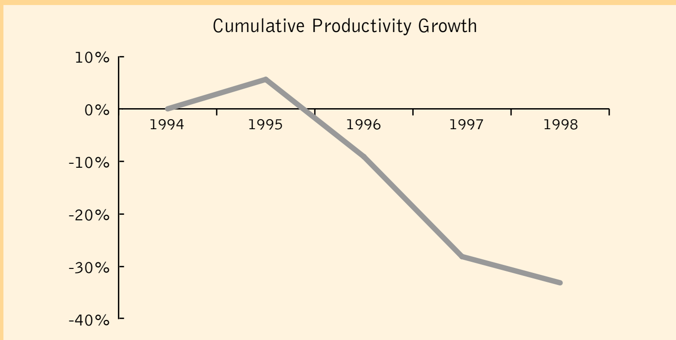
ISCR acknowledges very considerable assistance from senior staff at each of the SOEs studied.

1 *New Zealand Institute for the Study of Competition and Regulation. "The Economic Performance of Five State-Owned Enterprises 1989 to 1998." March 2000. Report to the New Zealand Treasury. The full report is available at www.iscr.org.nz under "research".*

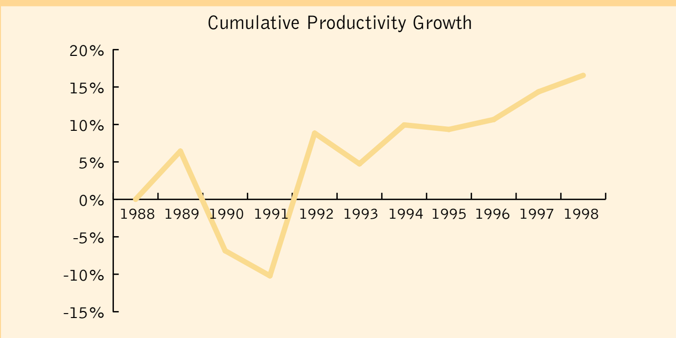
New Zealand Post Ltd

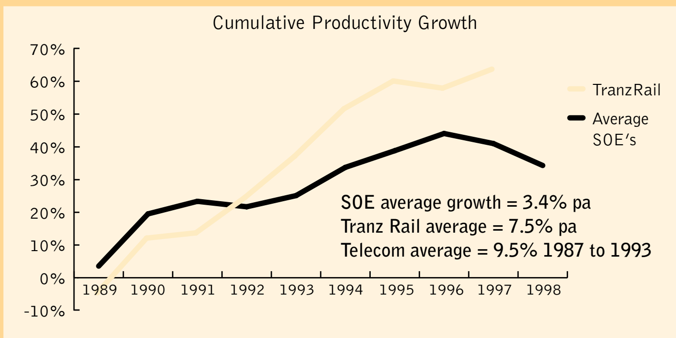


Vehicle Testing New Zealand Ltd



Landcorp Farming Ltd

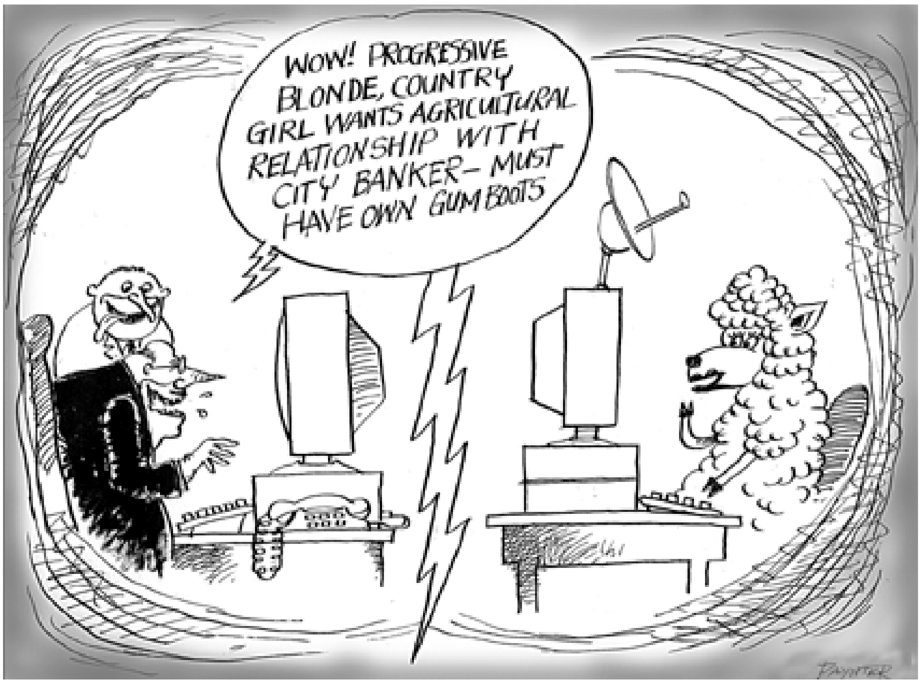




THE RURAL-URBAN DIGITAL DIVIDE IN NEW ZEALAND: FACT OR FABLE?

Is there really a "digital divide" separating urban and rural New Zealand?

If the furore surrounding the recent Telecommunications Inquiry is to be believed, rural New Zealanders' uptake of electronic commerce is severely retarded by poor telephone lines and the absence of high-capacity cabling in country areas.



The debate has been fuelled by studies measuring individuals' perceptions of disadvantage.[1] But evidence of actual uptake and usage of Internet tools do not support a single or simple digital-divide theory.

A recent NZISCR study[2] uses businesses' e-mail and website listings in the electronic Yellow Pages (www.yellowpages.co.nz) to assess business uptake on a geographical basis.

Fable: Provincial New Zealand is dragging the e-commerce chain.

Fact: Some provincial centres lead all metropolitan areas in the uptake of e-mail.
While all provincial and metropolitan centres have higher business uptake of both e-mail and websites than their rural hinterlands, there is no clear pattern of provincial centres lagging behind the metropolitans.

Indeed, the highest-ranking areas for uptake of e-mail are Marlborough, Nelson, Otago and Southland. Wellington, Canterbury and Auckland come in only at fifth, sixth and seventh. The town areas of Blenheim and Nelson both outrank the highest metropolitan, Dunedin, and the rural parts of Marlborough outrank Wellington, Christchurch and Auckland.

Fact: Some provincial centres lead some metropolitans in the uptake of websites.
The smaller metropolitan centres of Dunedin and Wellington rank first and second in websites, with Auckland fourth. Provincial Whangarei is third.

Fable: e-commerce begins and ends in Auckland.

Fact: The South Island leads the North in uptake of e-mail
There is no significant difference in the level of website uptake between the South and the North Islands. However, South Island businesses' uptake of e-mail is approximately one-third higher than in the North Island.

These figures may be explained by traditional forms of communication being more expensive in smaller or remote areas. For example, in remote areas the local calling areas are smaller and customers may, on average, be further away. In those circumstances the benefits of alternative technologies may accrue faster, leading to faster uptake and higher penetration.

The figures suggest that the availability and quality of telephony infrastructure is not necessarily a barrier to access in all rural hinterlands. The MAF report showed a trend to bypass the local loop, with high levels of satellite uptake and growing interest in WAP systems. The earliest investment in such bypass technologies (which also include the leasing of dedicated lines) would be expected in areas with more buoyant local economies. This may help explain the high levels of both e-mail and website uptake in rural Otago, Marlborough and Nelson.

As the alternatives become cheaper, rural folk may have more incentives than city dwellers to invest in technologies that bypass telephone wires. Nonetheless, some areas (Gisborne, Wairarapa, Hawke's Bay, Manawatu, Wanganui and Taranaki) have a low level of both e-mail and website uptake. Infrastructure may play some part in this poorer performance, but it is unlikely to be the only factor separating them from the rural leaders.

Further study is needed to explain why Hawke's Bay's e-readiness is less than Marlborough's, and why business in Palmerston North is less wired than in Whangarei. Until the differences are better understood, any regulations or subsidies aimed at "the rural sector" in general are likely to be poorly targeted.

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1 See MAF's Telecommunications: Use, Constraints and Potential in Rural Areas, for example.

2 Howell, Bronwyn. The Rural-Urban Digital Divide in New Zealand: Fact or Fable? Available on the NZISCR website at www.iscr.org.nz under "work in process".

Who's Connected?
Percentage of Yellow Page listings with e-mail address