



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

BROADBAND PENETRATION:

**Does it matter, and does it require local
loop unbundling?**

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Telecom Corporation
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NZ CONTEXT

‘Stocktake’ and Telecommunications Amendment Bill:

1. NZ’s low broadband uptake primarily attributable to a regulatory regime that inhibits intra-platform competition;
2. local loop unbundling will stimulate competition;
 - lower prices, increased investment, greater product variety
3. ipso facto, broadband uptake will increase

Objective:

- NZ will be in OECD top quartile for broadband uptake per capita by 2015
- essential for NZ’s economic competitiveness in a ‘knowledge economy’



BROADBAND UPTAKE

The outcome of interaction of supply and demand factors

- derived demand from the welfare consumers get from the applications enabled by access
 - absolute (new Internet users) and relative (dial-up users)
- yet typically the sole demand side indicator used to assess the impact of regulatory interventions in supply-constrained markets

Key questions for regulatory intervention rationale

1. is there evidence of a supply-side problem warranting regulation?
2. to what extent does the chosen intervention address the identified supply-side problem?
3. how effective is the intervention likely to be in raising:
 - broadband uptake?
 - total welfare?



W.R.T. THE 'STOCKTAKE' ANALYSIS

- 1. Are competition/regulation differences the best explanation for observed differences in broadband uptake?**
- 2. Where is the theoretical and empirical evidence to support the 'Stocktake' assertions that:**
 - competition 'problems' are the cause of perceived low investment and low uptake?
 - the chosen intervention (LLU) will increase uptake sufficient to meet Digital Strategy targets whilst having no effect on investment incentives?
 - that the effects of the chosen intervention are superior to all other alternatives?



DOES NZ HAVE A SUPPLY-SIDE ‘PROBLEM’?

Information

- NZ had the highest Internet penetration rate in the world at September 2005 (76.3% of the population – ITU)

Availability

- Telecom DSL 3rd commercially available service in OECD (January 1999, following US and Canada)
- 3 near nationwide access technologies in 2006
- wireless, cable, fibre available in many urban areas
- no evidence of commercial application shortages, usage
 - Internet banking, TradeMe
 - but maybe some residential applications – e.g. IPTV



ABSOLUTE PRICES

<i>Country</i>	<i>Operator</i>	<i>Monthly price (USD PPP)</i>	<i>Downstream speed (kbit/s)</i>	<i>Upstream speed (kbit/s)</i>	<i>Included Mbytes</i>
Iceland	Iceland Telecom	51.04	2048	256	unlimited domestic, 100 international
Korea	Korea Telecom	54.63	13000	4000	unlimited
Netherlands	KPN	52.43	2240	416	n.a.
Denmark	TDC	71.55	2048	256	unlimited
Switzerland	Swisscom	52.23	2048	200	unlimited
Finland	Elisa	59.68	2048	512	unlimited
Norway	Telenor	60.45	2048	256	unlimited
Canada	Bell Canada Sympatico	54.09	4000	640	unlimited
New Zealand	Telecom New Zealand	47.24	2048	192	10 000

Exhibit 2.5: Premium ADSL offerings of incumbent operators, November 2004 [Source: operators]

RELATIVE PRICES; APPLICATIONS

Free local calling

- ratio of broadband:dial-up prices in NZ 3.1:1 to 2:1 unrestricted; 1.3:1 to 1.8:1 if buying tolls from same ISP
- does not apply to business users – internationally high uptake and use of broadband accounts for NZ SMEs (10+ employees)

Dial-up a satisfactory substitute for many users

Consumers in general may not place a high premium on broadband speed, given current and likely future applications used

- broadband access positively correlated to income, but bandwidth usage negatively correlated
 - whilst Internet access appears to be an ‘essential good’, it is not clear that broadband access and the applications that can only be accessed via broadband are ‘essential’



**BUT PRESUMING THERE IS A
JUSTIFIABLE SOCIAL OR ECONOMIC
POLICY REASON TO STIMULATE
BROADBAND UPTAKE, HOW MUCH
DIFFERENCE WILL LLU MAKE?**



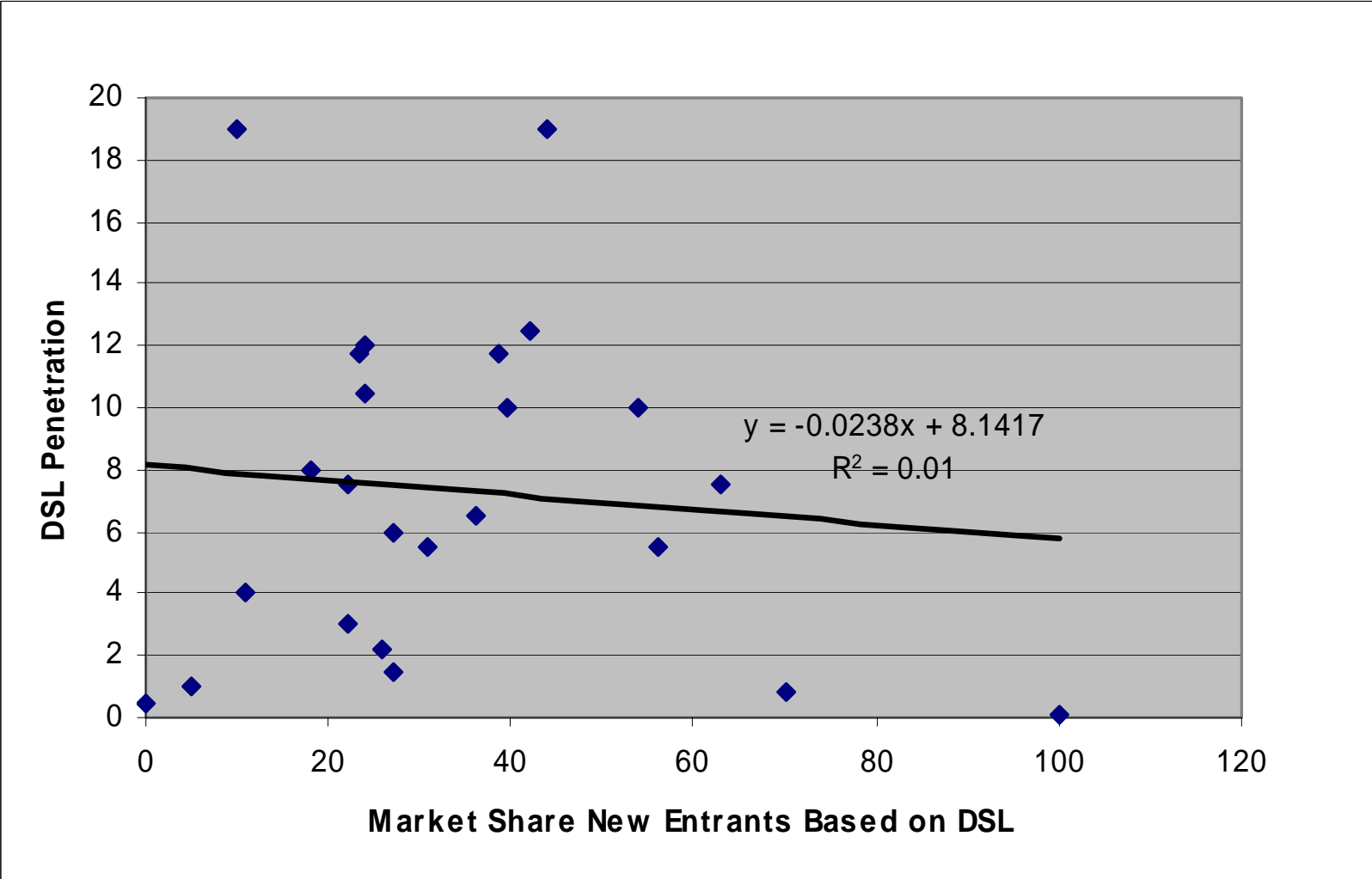
INTERNATIONAL EVIDENCE I

Despite strong LLU advocacy by policy groups (e.g. OECD, ERG), there is no clear empirical evidence supporting unbundling having a statistically significant effect on broadband uptake; the effect of inter-platform competition is much greater

- Distaso, Lupi, Manenti (2006)
 - oligopoly competition model with differentiated products
 - based on 14 EU countries, 2002-2004
- Denni and Gruber (2005)
 - logistic model of technology diffusion
 - US data 1999-2004
- Wallsten (2006)
 - country-level panel dataset - OECD countries
 - controlling for country and fixed year effects
 - tests effects of different unbundling forms



ERG (05) 23 Diagram 1b page 4 (2005)



INTERNATIONAL EVIDENCE II

Despite claims that incumbents invest aggressively under LLU to retain market share, and that advocacy to the contrary is simply strategic behaviour designed to reduce regulation severity, unbundling appears to be associated with *lower investment by incumbents*

- theoretically predicted, using incentive-based models
 - e.g. de Bijl and Peitz, 2004; Crandall et al, 2002)
- investment in the US increased markedly following the removal of LLU obligations on new fibre connections (Hazlett, 2005)

No type of unbundling appears to affect the download speeds of incumbent broadband offerings Wallsten (2006)

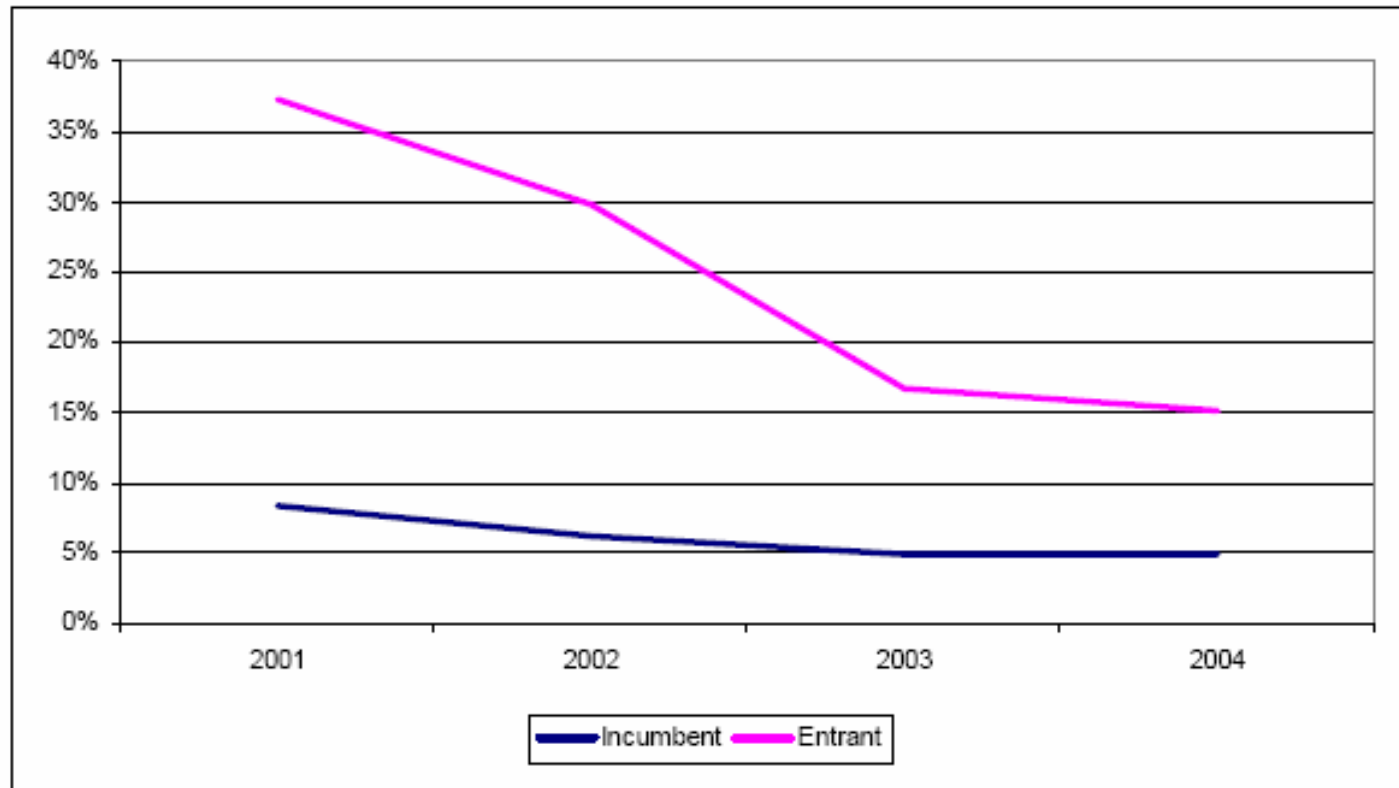
- the only variable with consistent explanatory power is population density



EU INVESTMENT TRENDS 2001-2004

(London Economics, PricewaterhouseCoopers 2006)

Figure 2.10: Fixed telephony investment by incumbent and new entrant operators expressed as a % of revenues*



IMPLICATIONS FOR NZ

Risks, uncertainties are large; quantifiable benefits small

Increases in broadband uptake under LLU:

- highly uncertain
- likely to be small compared to other effects

LLU will almost certainly alter investment incentives

- e.g. Telecom's NGN
- investment in alternative platforms

LLU cannot directly address demand-side issues

- which are very likely consequences of other regulatory interventions



A policy with proven welfare gains?

Or a potentially costly ‘fashion statement’?

On the basis of the (absence) of analysis in the ‘Stocktake’, NZ’s legislation, the proposed policy ‘bets the farm’ on the basis of a few, highly conjectural, assumptions made by policy analysts in very different market contexts

