



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

# **BROADBAND IN NEW ZEALAND**

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## **COROPRATE MEMBERS**

Contact Energy Ltd

Fonterra Co-operative Group Ltd

Meridian Energy Ltd

Natural Gas Corporation

New Zealand Post Ltd

Powerco Ltd

Reserve Bank of New Zealand

Telecom Corporation  
of New Zealand Ltd

Transpower New Zealand Ltd

Victoria University of Wellington

Westpac Institutional Bank

# CONTEXT

## Internet information transfer technologies

broadband = frontier (speed, capacity)

critical importance for productivity growth, increasing welfare

“a significant harbinger and bellwether of future economic prospects” - Haring *et al.* (2002)

## Perception

“the current bottleneck to growth in the communications sector, and beyond for areas such as electronic commerce, is the limitations of local access networks” as “there is usually one, or at best two, networks passing most homes and businesses in OECD countries” – OECD (2001)

## ‘Ideal’ objective

high broadband penetration



# OECD'S 'IDEAL' ENVIRONMENT

## Multiple competing broadband technologies

independently owned

“the countries with alternative infrastructure available to business users are developing broadband access much faster than in those markets where there is only one, or at best two, platforms available to provide broadband access”



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# **THE INTERNATIONAL PERCEPTION**

**Limited inter-platform competition**

**Monopoly local loop telecommunications providers**

## **PROPOSED ‘SOLUTION’**

**Local Loop Unbundling, compulsory wholesaling**

**to “open up the networks of players in dominant positions to competitive forces” as a stepping-stone on the path towards full facilities-based competition**

## **OECD CAVEAT** (Sept 2003)

**“LLU is not a panacea ... goals for a broadband society can be attained in many other ways ...deployment of alternative technologies, such as wireless local loops, cable, fibre, satellite and Ethernet ... help reduce the relative importance of LLU in the future”**



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# THE ISSUES

**Consumer Welfare gains from an ‘Information Economy’ more important than any one technology platform**

**Consumer Welfare depends upon the applications consumers utilise**

**Explore how the Internet (including broadband) contributes to Consumer Welfare**



# **RAPPOPORT US RESIDENTIAL DATA**

**Internet activity (usage) helps discriminate between narrowband and broadband users**

**In the US, the top three usage-based activities are:**

Gaming

Gambling

Other entertainment

**Price matters**



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**NZ CONTEXT** (ref: various papers <http://www.iscr.org.nz>)

**Very high residential dial-up usage**

**Very high business broadband penetration**

per significant geographic business unit

**Very low residential broadband penetration**

**New internet users are NOT broadband users**

evidence of substitution from dial-up, ISDN

**Price matters: particular features in NZ**

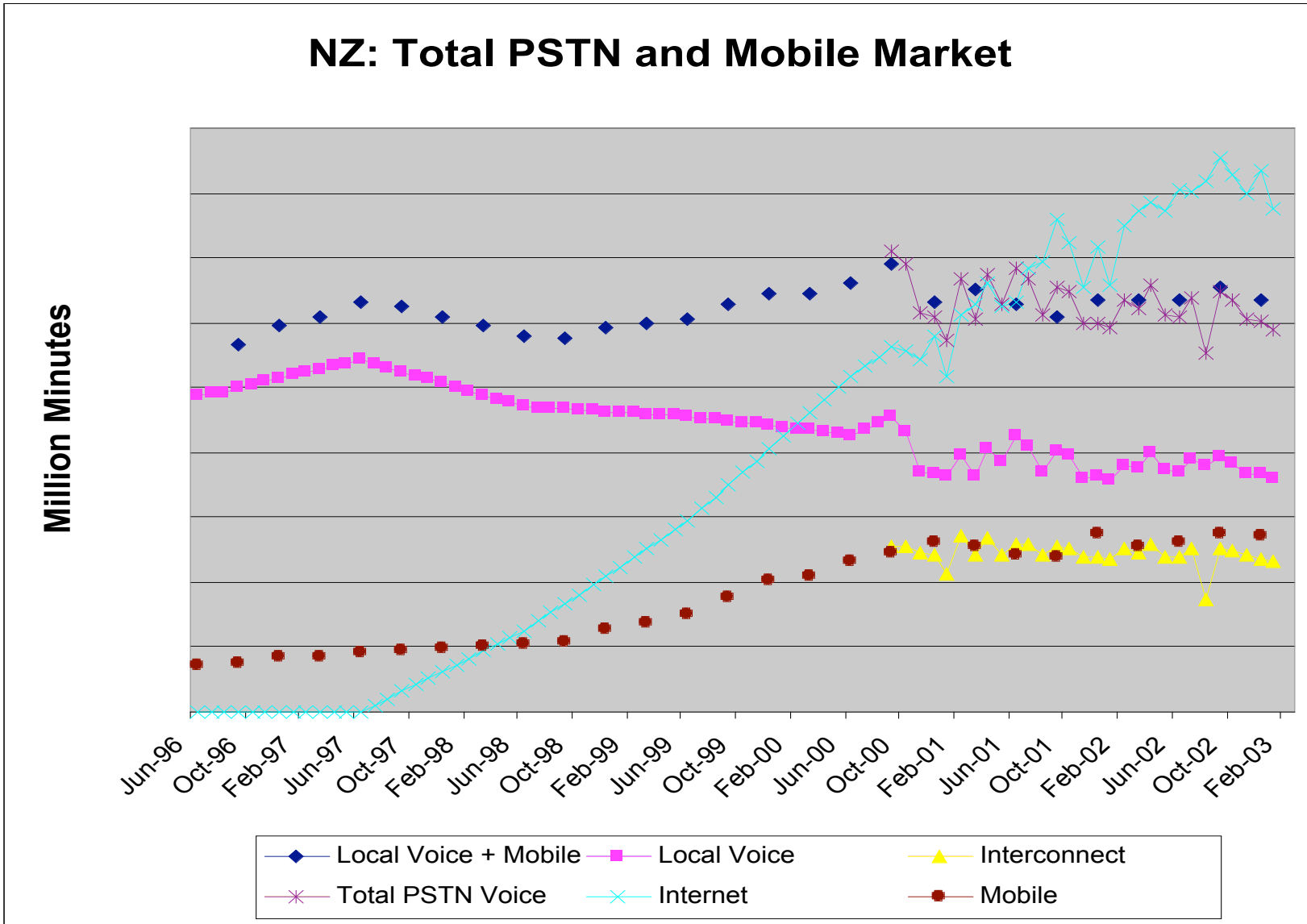
'Kiwi Share' biases residential usage towards dial-up

per minute charges bias business towards earlier substitution



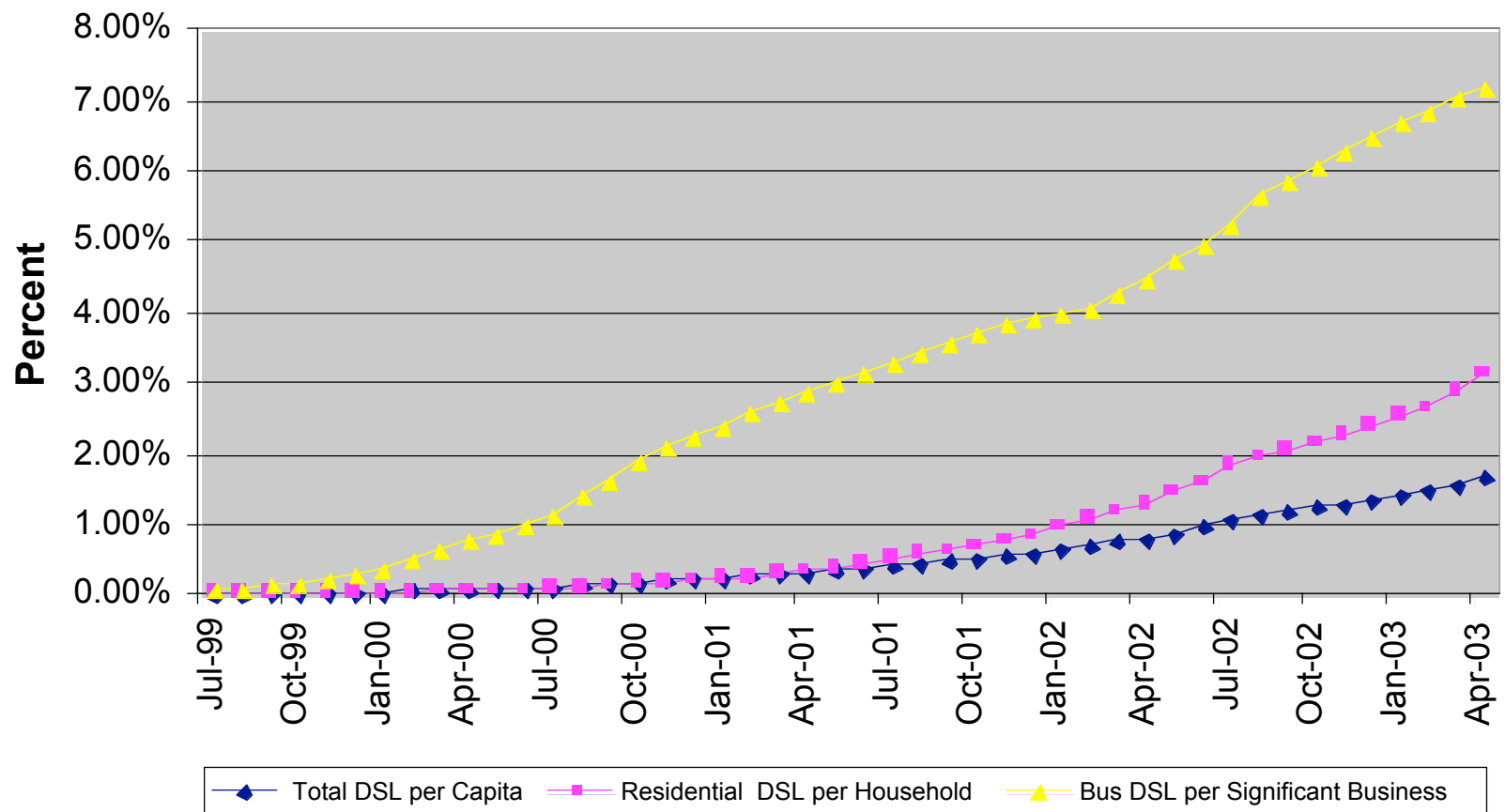
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## NZ: Total PSTN and Mobile Market



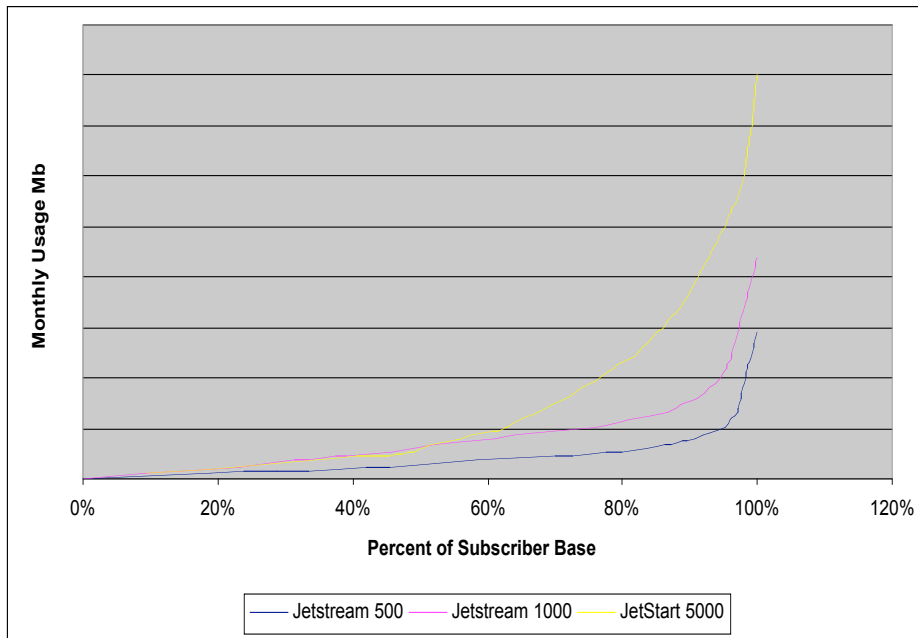


## NZ: DSL Diffusion

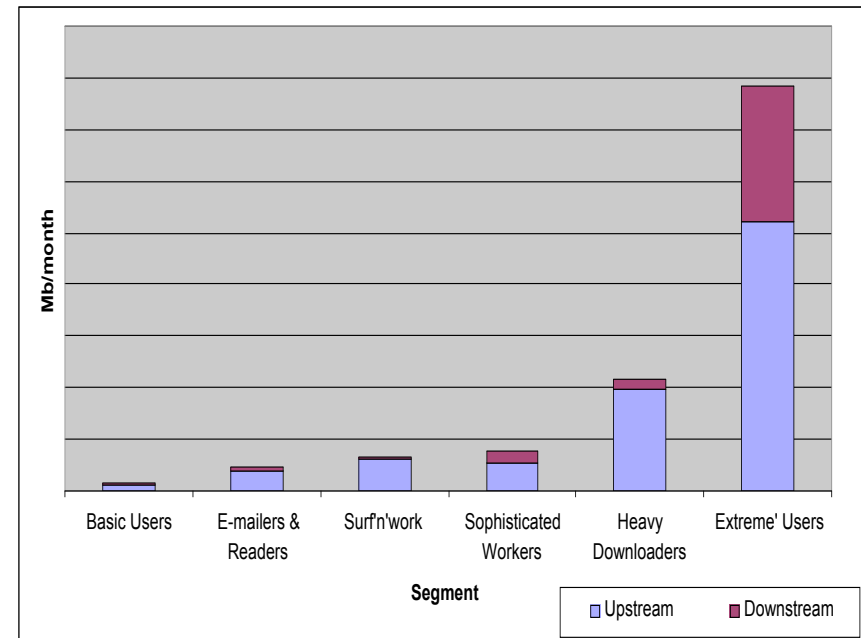


# DSL USAGE LEVELS – RESIDENTIAL

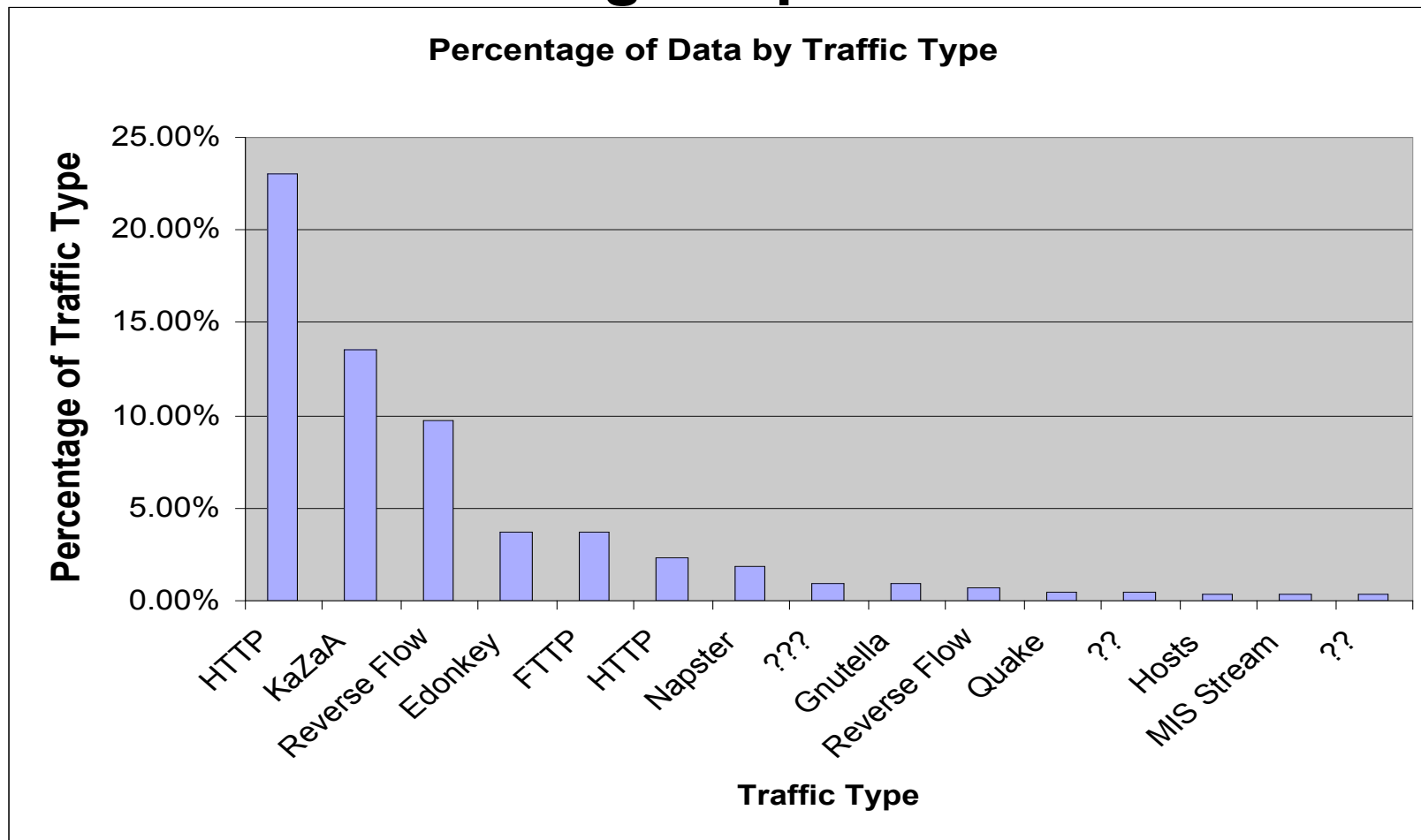
## TOTAL MARKET



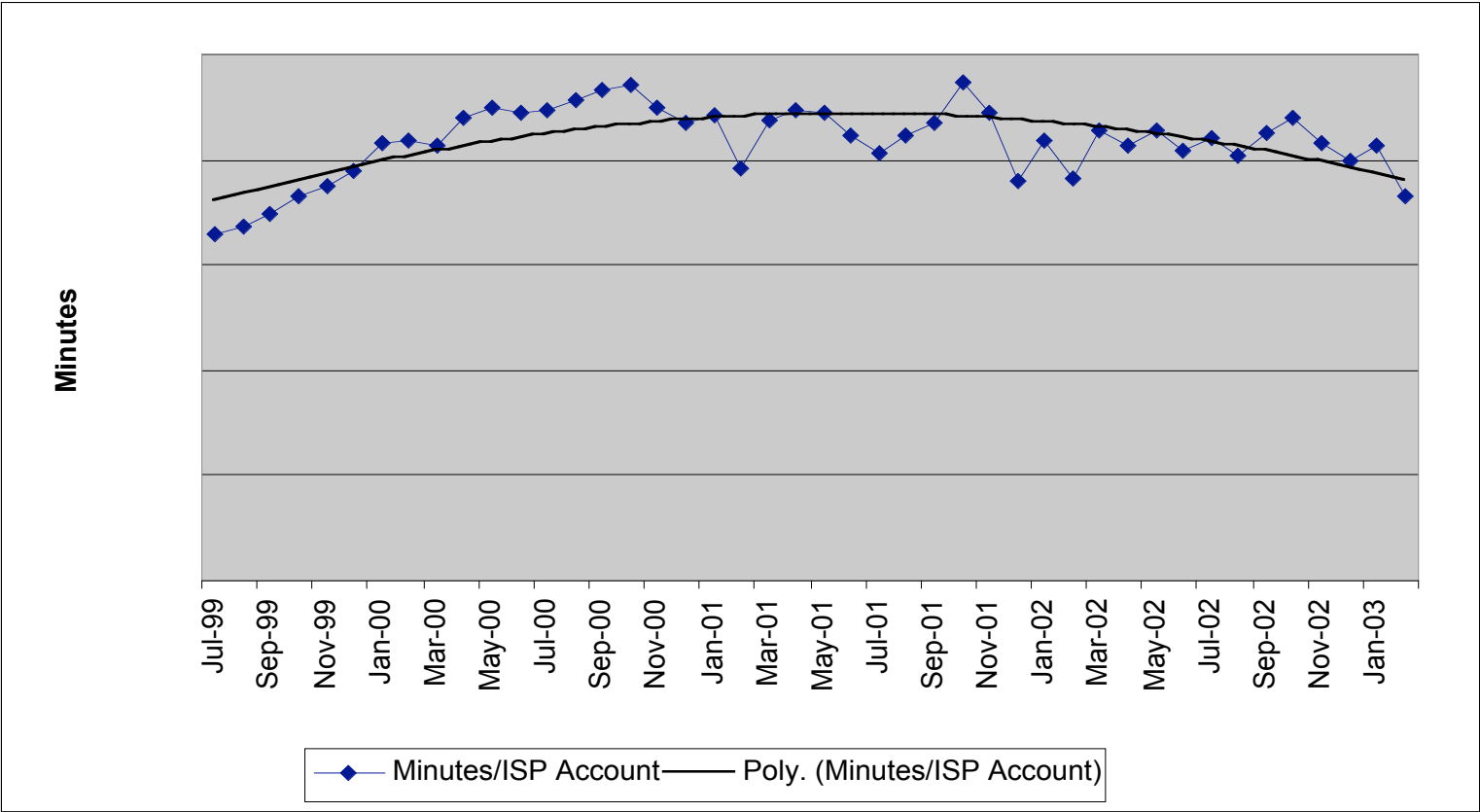
## MARKET SEGMENTATION



# NZ RESIDENTIAL BROADBAND APPLICATIONS: high cap users



# INDICATIONS OF INTERNET MARKET MATURITY



# LIMITS TO INTERNET GROWTH

**Speed of Internet connection not necessarily a limit**

**Main efficiency gains come from Internet use**

speed largely a quality issue

**Real bottlenecks are**

the small number of new valuable applications

the humans on the end of the computer

limits of time, budget constraints

(choice is only valuable if you can realistically enjoy the products  
that choice enables)

the speed of loading data onto and off the broadband 'pipe'



# **DEFINING THE MARKETS**

**Principal Product = INTERNET ACCESS**

**Derived demand for INTERNET USAGE**

determined by application profile

**Selection of INTERNET ACCESS PLATFORM**

determined by

usage,

user valuation of time

access costs

usage costs

conditioned by

platform availability

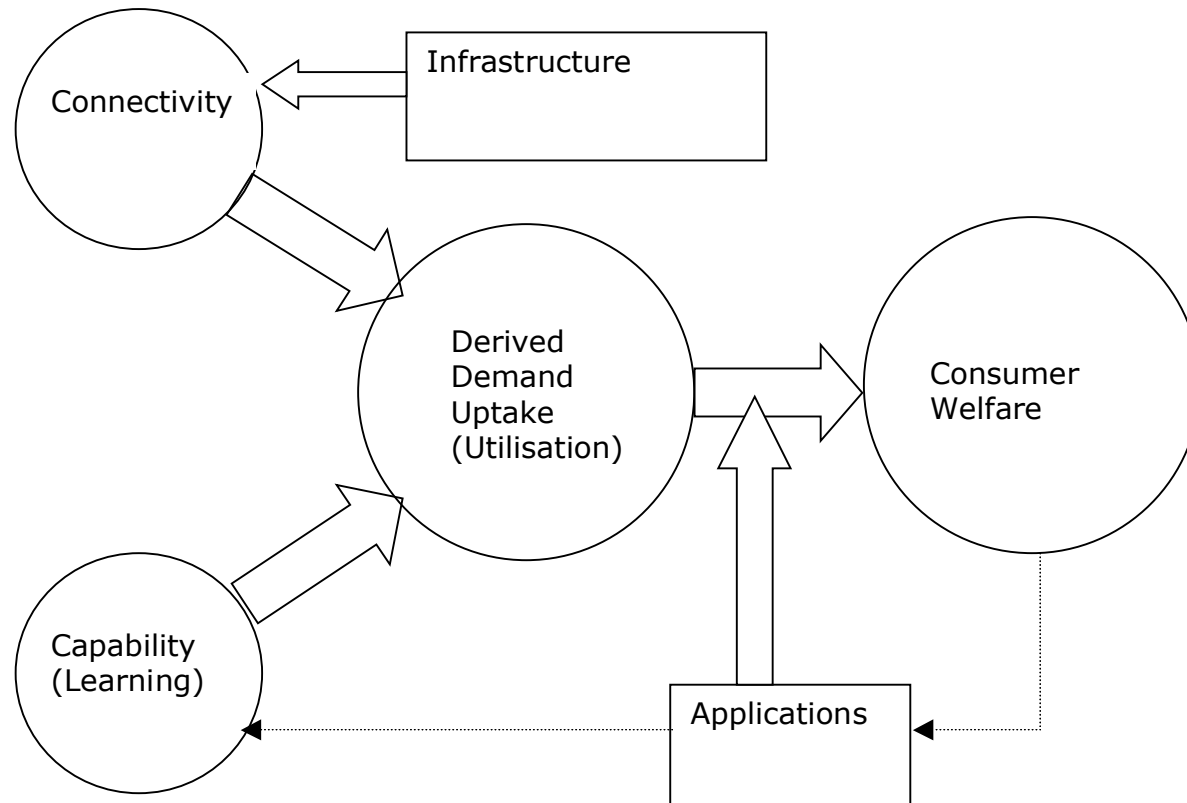
application availability

**Narrowband, broadband = substitutes**



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# INPUTS TO CONSUMER WELFARE



# **INTERNET INFRASTRUCTURE ALTERNATIVES IN NZ**

**PSTN-based dial-up**

**Satellite**

**Skymail (including online gambling)**

**Mobile (including games, SMS)**

**ADSL**

**Wireless**

**Cable modem**

**Ethernet LAN**





# HOW IMPORTANT IS THE PARTICULAR PLATFORM?

**Different platforms offer different functionality, applications**

e.g. mobile, wireless offer mobility (similar to mobile and wireline telephony)

e.g. residential dial-up offers cheap downloading of non time-sensitive data

e.g. broadband enables downloading of high volumes of time-sensitive data

**User values the total application, not just the platform**

**Application utility to user will determine the point of substitution between platforms**



# IS THERE AN INTERNET 'BOTTLENECK'?

**Many sites already have multiple platform access points** e.g. mobile, fixed line, Sky digital, electricity lines

## **Platform competition**

Walker Wireless, BCL, Ihug, CityLink, Counties Power, United Networks, Vodafone, Telecom Mobile, TelstraClear

## **A residential problem only?**

but dial-up, mobile, skymail, satellite are residential substitutes

## **An infrastructure or an applications market?**

residential applications requiring broadband are largely entertainment/leisure applications (gaming, gambling, movies)

are there other substitute applications in the leisure market?

videos, cinemas, mobile telephony games, skybet .....



# IS THERE A PRICING 'PROBLEM'?

**Dial-up Internet access telephony is free to residential consumers**

subsidy depresses substitution in the residential market

**Satellite is the cheapest broadband in New Zealand (and most widely available)**

**NZ prices low for data volumes consumed**

c.f. Australia, Iceland; comparable to US

**Data charges are a large component of broadband Internet usage cost**

85% comes from the US over Southern Cross cable (c.f. Australia, Iceland)

applies equally to all broadband platforms irrespective of supplier



# HOW MAY LLU AFFECT NZ INTERNET MARKET?

**If lower prices, then will induce earlier substitution**

## **Business market**

high penetration already

more likely to be purchasing alternative platforms

inducing substitution away from existing alternatives

increase market share of copper Internet data transfer

static efficiency gain if lower prices

unlikely to induce significant additional usage without development of substantial new applications

welfare gain from substitution solely from price reduction (small compared to welfare from application usage already accrued)

dynamic efficiency loss from foregone/delayed entry plus exit of functionality-raising alternative platforms (potentially wireless, satellite, mobile, especially rural)



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# HOW MAY LLU AFFECT NZ INTERNET MARKET?

## Residential market

- If price reduction then earlier substitution from dial-up
  - but how big a drop required to overcome dial-up subsidy?
- less likelihood of purchasing alternative platforms (same effect as business)
- connection price reductions become small compared to data charges as entertainment applications substitute onto broadband (increased reliance on connection charges to foreign markets)
- total Internet usage may not increase - arbitrage between accounts (Iceland)
- dial-up access may still continue at high levels for non time-sensitive applications



# WHAT ABOUT REBALANCING (OECD)?

**Kiwi Share/TSO requires geographic averaging**

**Adverse selection problem for incumbent**

**Where will competitors enter?**

business

metropolitan

**Eliminates subsidy from low-cost customers**

incumbents left to service more 'unprofitable' dial-up customers

**Further complicates TSO calculation**

prices passed on to new entrants anyway?

will prices really fall as much as projected?



# ISSUES FOR THE TELECOMMUNICATIONS COMMISSIONER

**Utilisation, not access, is the real issue**

**Costs of utilisation (data, user time) more significant than costs of access – LLU unable to address these**

**LLU may reduce ability to benefit from some forms of utilisation (especially business, rural) by limiting competition in the access platform market**

**Kiwi Share/TSO already incentivises residential**

**Internet utilisation** – may take a very big price reduction to induce residential consumers to pay for something they now get 'free'

