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

TELECOMMUNICATIONS MARKETS IN FINLAND & NEW ZEALAND:

Unbundling the Differences

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Bronwyn Howell

Research Associate, ISCR
http:www.iscr.org.nz
bronwyn.howell@vuw.ac.nz

Lecturer, Corporate Management
Victoria Management School
http://www.vuw.ac.nz/vms/

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WHY IS THE COMPARISON INTERESTING?

CONTEXT: SMALL, AGRICULTUAL ECONOMIES DISTANT FROM TRADING PARTNERS

	FINLAND	NZ
Population (million)	5.2	4.1
Land Area (sq km)	338,145	270,050
Population Density per sq km	16	15
Urbanisation		
Share in 10% of regions with largest popns	34	37
Variation in regional density (no. by sq km)	195.18	237.15
max	197.08	238.47
min	1.89	1.31
OECD urbanisation indicator	43	41

Social Statistics	FINLAND	NZ
Life expectancy at birth 2004	78.8	79.2
males	75.3	77
females	82.3	81.3
Population Growth 1950-1990 (times)	1.27	1.92
Foreign-born population % (2004)	3.3	18.8
Average unemployment % 1995-2005	10.7	5.6
Road fatalities per million vehicles 2005	133.5	133.7
Road fatalities per million population 2005	72	99
Prison population per 100,000 population	66	168
Municipal waste kg per capita 2003	450	400

CONTEXT II: BENEFICIARIES FROM THE 'DEATH OF DISTANCE'?

New Zealanders (and Finns) early and avid adopters of 'e'-technologies (Boles de Boer, Evans and Howell, 2000)

OECD Ranks	FINLAND	NZ
Internet hosts per 1000 (2000)	2	7
Internet users per 100 (2005) (ITU)	*19*	*1*
Secure servers per 1,000,000 (2000)	10	4
Secure Servers per 1000 (2006)	13	4
References to secure servers per 100 (2005)	4	5

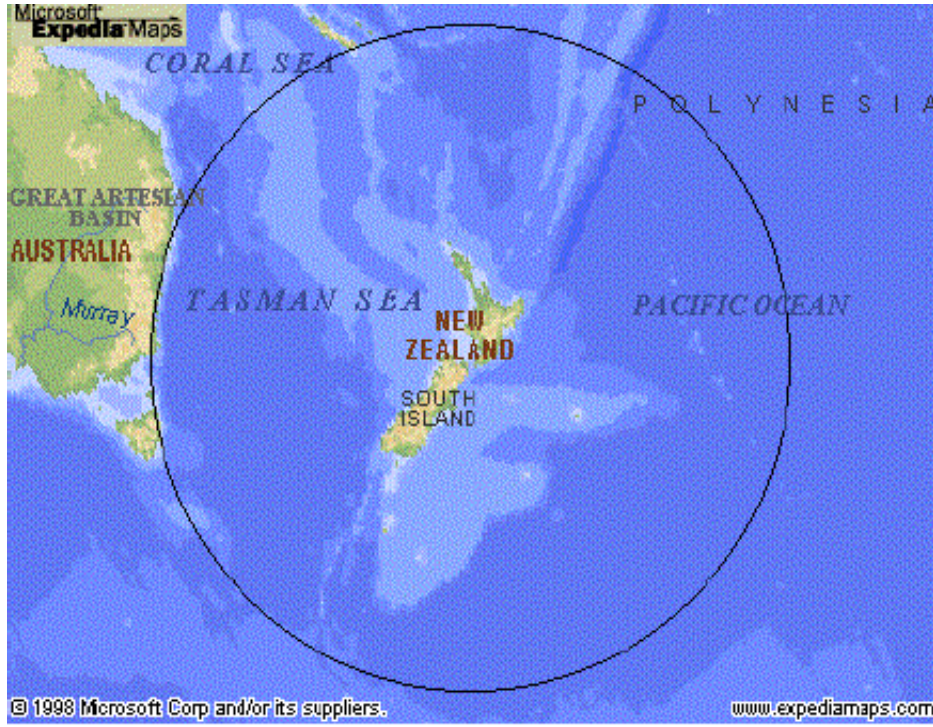
Rural and provincial NZ businesses earlier adopters and users of email than urban businesses (Howell, 2000)

CONTEXT III: HOW SIMILAR ARE THE ECONOMIES?

Industrial Characteristics	FINLAND	NZ
Percentage of total value added (2002)		
Agriculture, hunting, forestry, fishing	3.3	7.0
Industry (including energy)	27.3	19.3
Construction	5.2	4.6
Transport, hotels, restaurants	22.6	23.1
Banks, insurance, real estate	20.4	28.1
Business, government & personal services	21.2	17.9

CONTEXT IV: NEW ZEALAND *IS* DIFFERENT

	FINLAND	NZ
Share of trade in GDP (% 2005)	39	29.1
Share of ICT Manufacturing in value-added % (2003)	22.2	1.5
ICT share of fixed capital formation % (2002)	26.6	19.6
Exports of ICT equipment ($US millions 2004)	11,128	462
Share telecoms in business value-added % (2003)	4.7	
Share other ICT in business value-added % (2003)	6.5	
Share of trade in GDP % (2005)	39	29.1



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NEW ZEALAND IS THE (DEVELOPED) WORLD'S MOST ISOLATED ECONOMY

"The radii of the circles are the same. Within the circle centred on Helsinki there are 39 countries and approximately 300 million non-Finnish people. Within the circle centred on Wellington are Norfolk Island and a little of New Caledonia" Frame (2000:16)

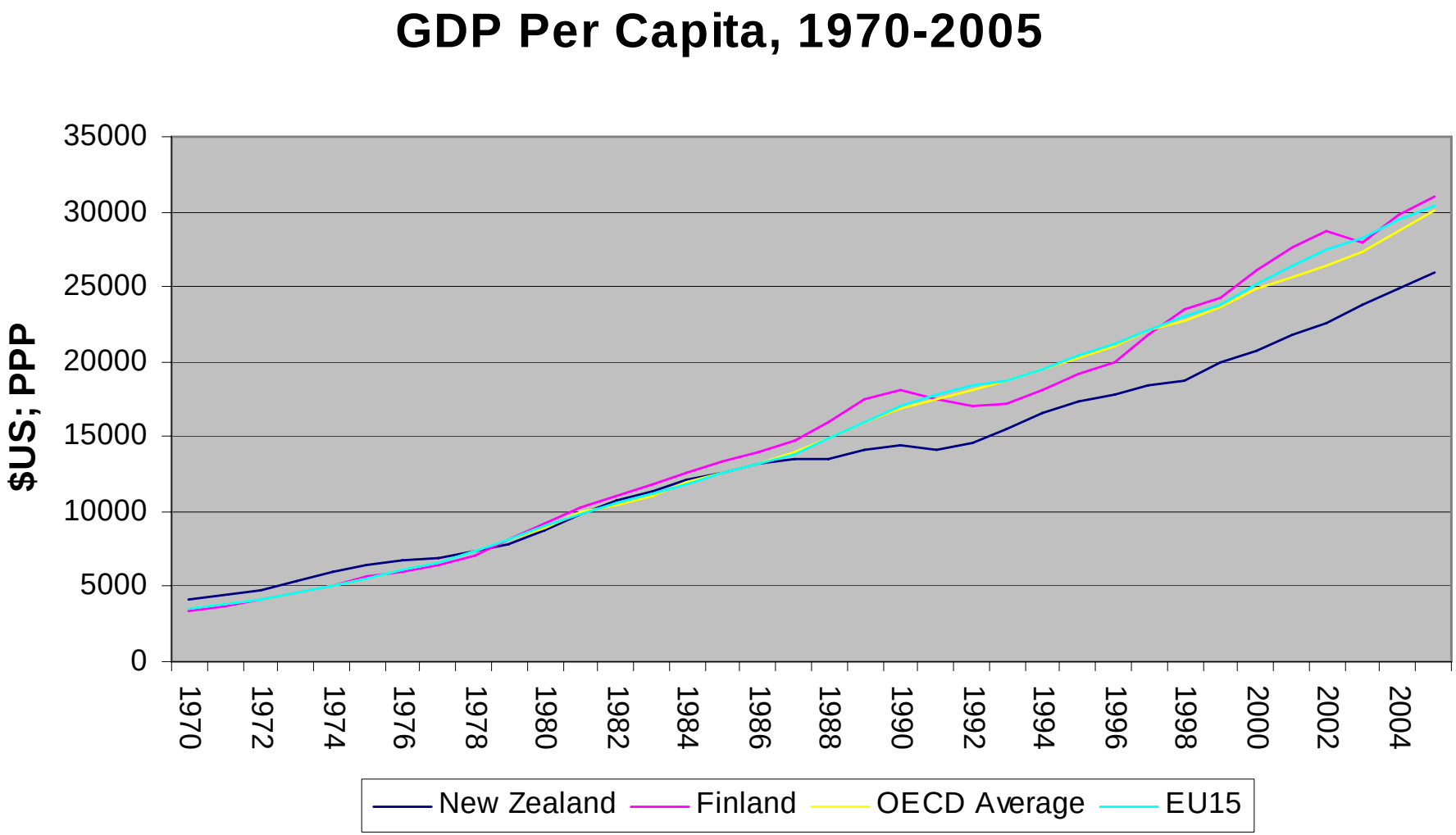
Gravity model (2002) scale that reflects nearness of relevant (GDP)

- New Zealand at 2.45 is the lowest in the OECD
- Australia 2.5; Finland 9.6; Sweden 11.92; Norway 12.05; Ireland 14.22; Netherlands 26.57, United Kingdom 26.87

Increasingly isolated

- share of exports in GDP largely unchanged since 1970s (Finland's is growing)

WITH DECLINING RELATIVE WEALTH



AND A WORLD-CLASS TELECOMMUNICATIONS INFRASTRUCTURE

Early digitalisation (100% complete in 1995)

- Finland, Norway were fully digitised at around the same time
- in 1995, UK 88%, Denmark 61%, Australia 62% digital

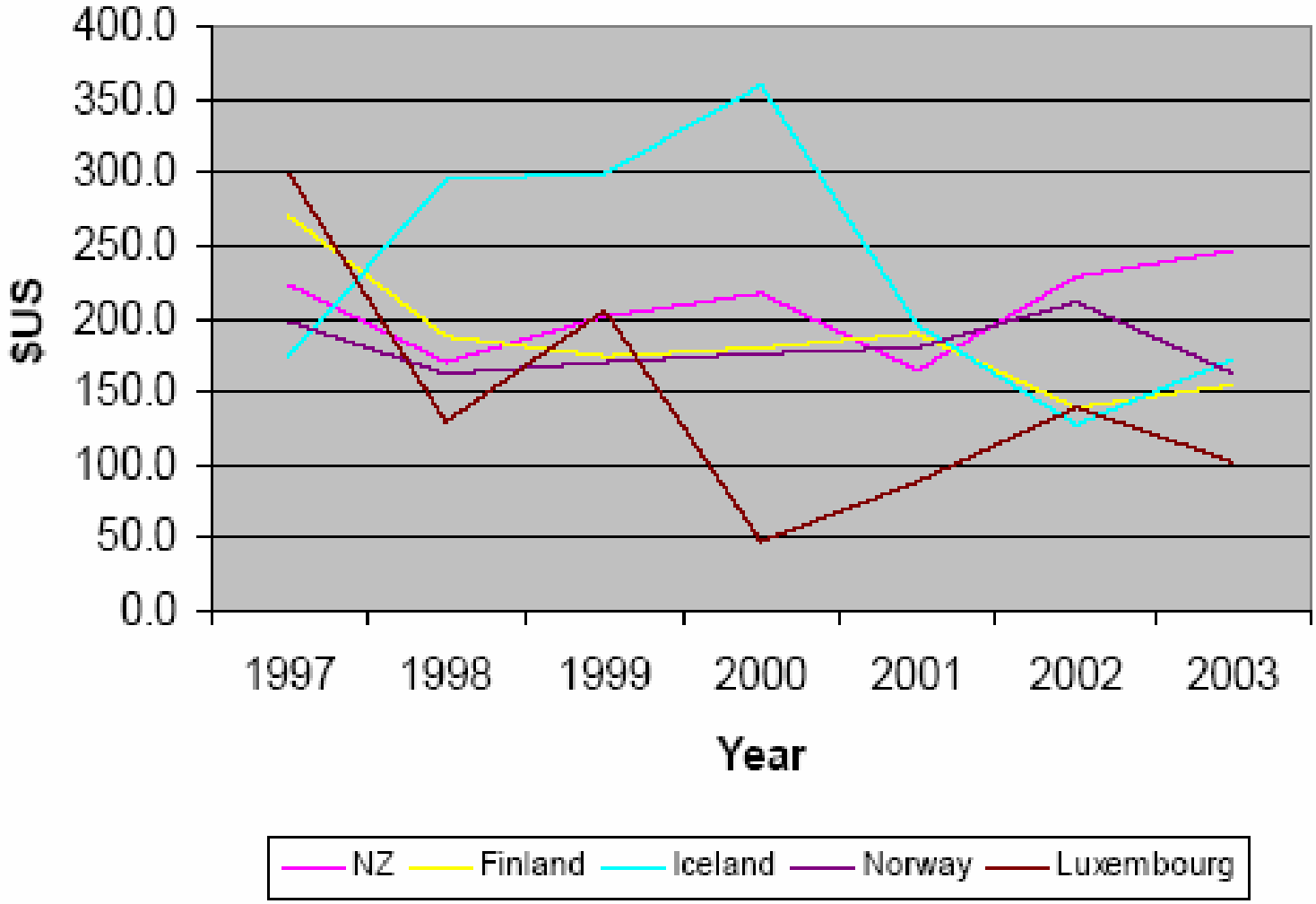
Early, widespread, rapid deployment of DSL

- 3rd in the OECD (1999)
- high quality entry-level product (2Mbps)
- 85% of lines DSL-capable in 2002 (currently 95%)
- low prices (3rd lowest in the OECD in 2000, taking speed into account)

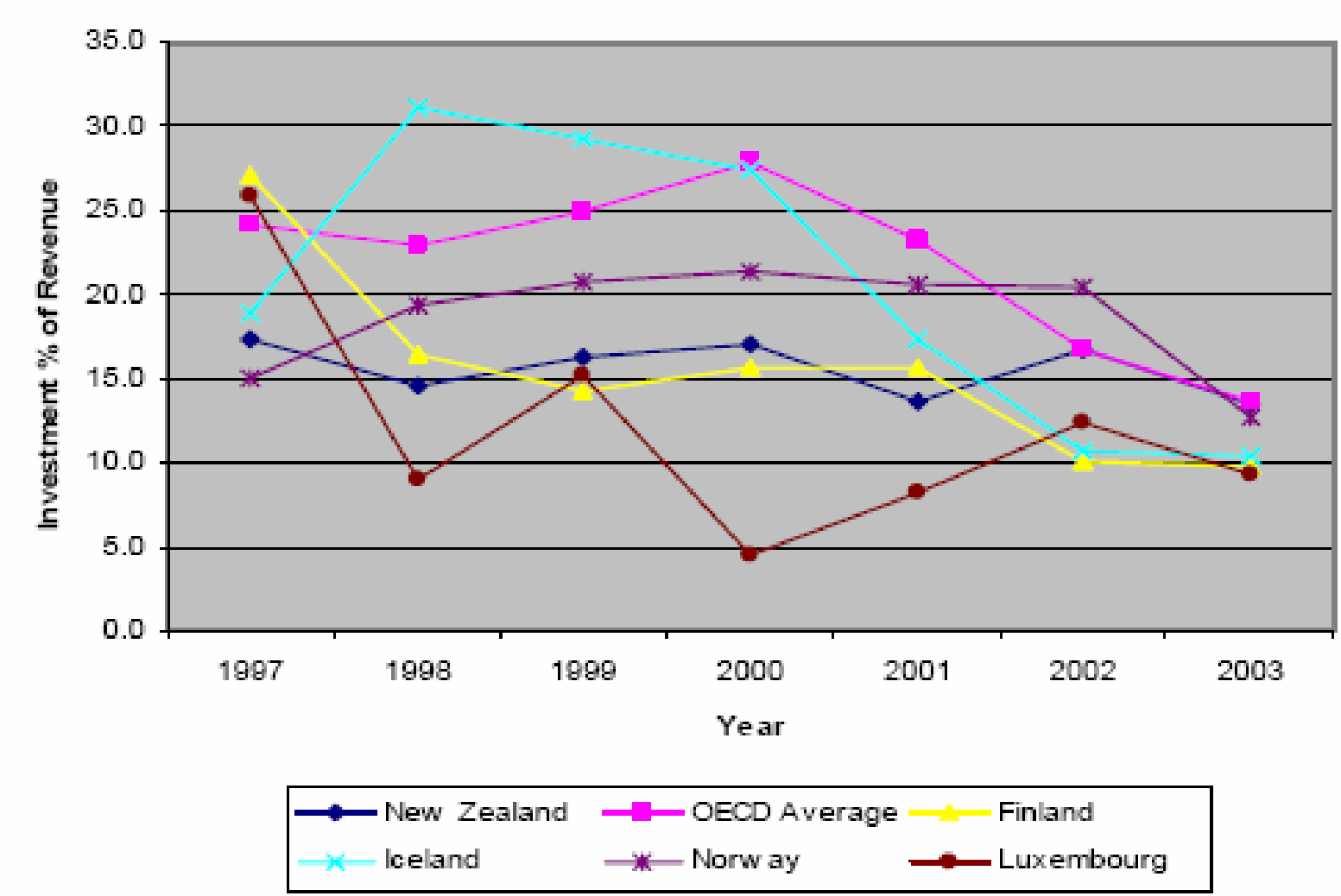
Two mobile networks competing from early 1990s

- Telecom (CDMA)
- Vodafone (formerly BellSouth) (GSM)

INVESTMENT: PER ACCESS CHANNEL



INVESTMENT: AS A % OF REVENUE



UPTAKE

Fixed lines per 100: 43.6 in 2005 (Finland 43.4)

Mobile lines per 100: 101.9 in 2005 (Finland 102.7)

- 3G % of connections 2005 NZ 25% (Finland < 5%)

Broadband per 100: 14 at Dec 2006 (Finland 27.2)

- not a business uptake difference
  - 77% of all businesses use a broadband connection (90% of NZ businesses have 5 or fewer employees) (2006)
  - Over 90% of businesses with more than 50 employees use a broadband connection (Finland 95%) (Finnish businesses are comparatively larger than NZ businesses – Frame, 2000)
- not a significant pricing/quality difference – NZ residential prices 33% lower than average Finnish prices for 2Mbps connections (and falling)
  - all NZ connections are 'best available speed on the line' – only 27% of Finnish connections are 2Mbps or faster (512kbps most common)
  - Finnish 512kbps prices are on average rising!

USAGE Jan 2005-Dec 2006

Fixed lines (total)

- Finland fell 15.5%; NZ 0.9%

Chargeable call minutes on fixed lines

- Finland fell 47.8%, NZ 9.8%

Chargeable call minutes per fixed line

- Finland fell 39.3%; NZ 12.7%

BUT

In 2003, only 21% of NZ fixed line call volume was chargeable (Finland 100%)

- 'free' residential local calling (including Internet access)
- NZ total voice minutes 3 to 4 times that of Finland

WHAT MAY BE CONTRIBUTING TO THE DIFFERENCES?

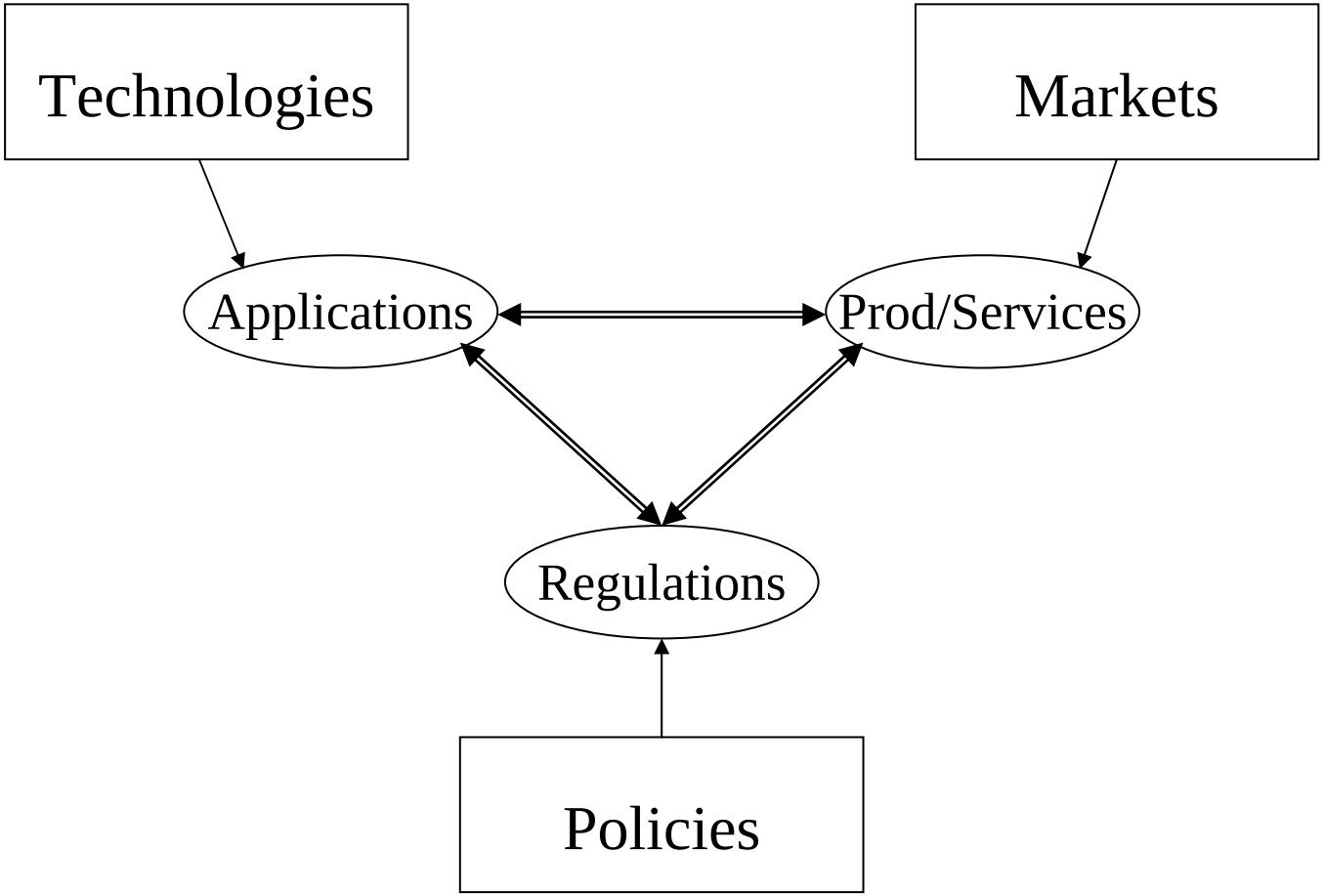
GDP differences

Industry differences

Institutional differences?

Regulatory differences?

INSTITUTIONAL HISTORY MATTERS



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WILLIAMSON (1979; 1998)

Complex institutional systems analysed on 4 levels:

1. Individual actors and their transactions
2. Institutional arrangements (governance arrangements) co-ordinating transactions among multiple actors
3. Legal rules (formal 'rules of the game')
    - determine legal positions of players and mechanisms available to co-ordinate transactions
4. Cultures, values, norms, attitudes (informal 'rules of the game')
    - influence mindsets of level 1 actors, thereby influencing problems identified, feasible solutions considered, incentive structures that will be acceptable and be effective

NZ MARKET DEVELOPMENT

Centralised (Government) ownership & control

- Postal (1856 – colonial self-government)
- Telegraph (Post Office control from 1864)
  - local ownership and investment – Provincial government and military
  - ownership transferred to central government at dissolution of Provincial governments 1876
- Telephony – Electric Telegraph Act amendment 1880
  - prevented anyone other than the government owning, operating or offering any telephony equipment or services without the permission of the Governor in Council

THE NZ INVESTMENT PROCESS

Government deemed telephony a ‘luxury item’

- confined investment to servicing administrative (priority 1) and business (priority 2) purposes

Rural services (other than Govt priority) were ‘by permission’

- political process – petitioning Wellington
- ‘six reputable people’
- self-organising – Local Government co-ordination prohibited
- individuals paid for all wires, exchange equipment, handsets etc
- equipment installed, operated by Post Office staff (charged to individuals at negotiated rates)
- covenants requiring equipment to transfer to Govt if fees not paid

Country Telephones Act 1912 allowed Local Government to supply wires and connect residents to Govt exchanges

NZ MARKET EVOLUTION

One dominant firm

Politics and political objectives at the centre of sector strategy

- investment decisions (until 1989)
- universal service obligations (pricing, tariff structure) for political purposes

Regulatory processes for fixed line post privatisation (except for 1990-2001) echo centralised control

- confrontational, adversarial
- regulator sets contract terms (prices, non-price terms & conditions)
- return to government strategic control of industry post 2005

THE FINNISH PROCESS

Fully devolved investment and control

Two main models

- patronage (business or aristocratic) – private ownership, control
- community co-operative – public ownership, local control

Several hundred telcos

- local pricing (no tariff restrictions, universal service obligations)
- interconnection by private contract
- investment, upgrading driven by local demands
- mergers and acquisitions have occurred (in 2007 41 regionally-distinct companies still existed)
- some consolidation under Telia-Sonera, Elissa and FINNET co-operative (27 firms)

FINNISH REGULATION

Nominal oversight by Department of Transport and Communications and its predecessors

- transfer to industry-specific regulator FICORA as a requirement of EU membership (also manages broadcasting licensing and regulation)

Tension with EU over regulatory standardisation

- there is no fixed line ‘incumbent’ to regulate
- regulatory challenges are different
- mobile market has drawn more attention as it has developed from the beginning as two large network operators (Elissa & Telia-Sonera) and a number of virtual operators

FICORA THE ‘LAZY REGULATOR’?

A monitoring, rather than interventionist role w.r.t fixed line services

Approves contracts negotiated by firms themselves

- requires demonstration of cost-based pricing, but no mandatory price, terms requirements
- can demand renegotiation of specific terms

Encourages a proactive approach when firms contract

- FICORA is not a referee or an arbitrator
- supports dynamic investment in new products, services

Facilitates FICORA focus on regulatory policy development

SOME BENEFITS

Regionally-sensitive cost-based prices

- encouraged efficient entry of competitors via unbundling
  - universal service prices, tariff structures have not distorted price signals
  - some rural LLU access prices 4 times prices in Helsinki and Tampere
- facilitated efficient and timely investment in wireless and broadband in rural areas
- thus helps explain some relative differences in broadband uptake (though GDP difference has most explanatory power)

Many contracts = many benchmarks to inform FICORA decisions

BUT THERE ARE OTHER PRESSURES

Mobile handset bundling

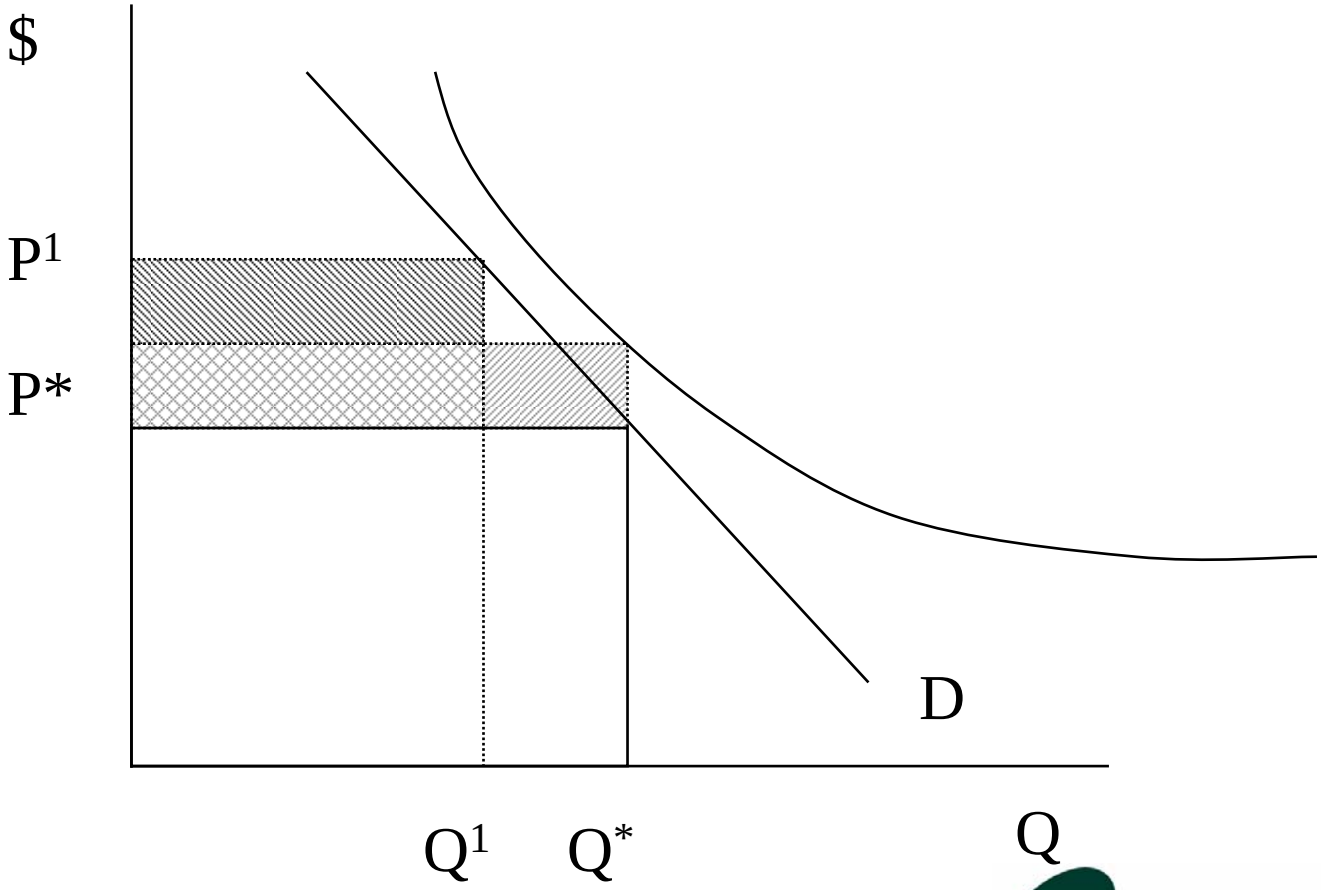
Nokia interests

- network operators prohibited from bundling handsets with monthly access accounts (until 2005)
- implicated in Finland's low 3G account uptake, relatively aged handset stock
- 2005 – average age 2 years 9 months (average year of introduction 2002)

Bundling removed in late 2005

- by 2006, average age 2 years 6 months (average year of introduction 2004)

PRICE DISCRIMINATION BRINGS FORWARD DIFFUSION OF NEW TECHNOLOGY



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BUNDLING IS PRICE DISCRIMINATION

Two products (handset, calling)

Different customer valuations

- voice calling highly valued (inelastic)
- extra handset applications (mainly linked to 3G) not highly valued by average mobile consumer (elastic)

Offer each separately

- if extra features valued at less than the cost of handset, will not purchase

But in a bundle

- consumer surplus from calling used to offset difference between valuation and nominal price of the handset in a bundle
- more handsets will be sold than under separate pricing

LESSONS

NZ shows Finland

- ‘all you can eat’ pricing increases consumption volume, but is implicated in delaying diffusion of frontier technologies
- handset bundling accelerates diffusion of 3G sales
- universal service pricing delays broadband diffusion and alternative network investment

Finland shows New Zealand

- telco networks don’t have to be centrally controlled, managed (there is a role for local government, co-ops when investment in new technologies is required)
- regulation does not have to be an adversarial process
  - but requires a different institutional approach to network development
- regulatory harmony poses problems for ‘different’ countries

COLLABORATION WILL CONTINUE

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