INTUG

Successes and failures in foreign lands:

How Australia can learn to do it better

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INTUG contents

- what is INTUG?
- competition and choice
- sustaining competition
- deploying broadband
- moving to a mobile Internet
- conclusions

INTUG what is INTUG?

- members
  - national associations (ATUG & TUANZ)
  - multi-national corporations
  - individuals
- activities
  - International Telecommunication Union
  - Organisation for Economic Cooperation and Development (OECD)
  - APEC TEL, CITEL and EU

INTUG our aims

- real and effective competition
- genuine choice for users
- lower prices
- higher quality
- constructive co-operation with
  - international bodies
  - governments
  - regulators

INTUG business demand

- Intranet
- Access networks
- Extranet

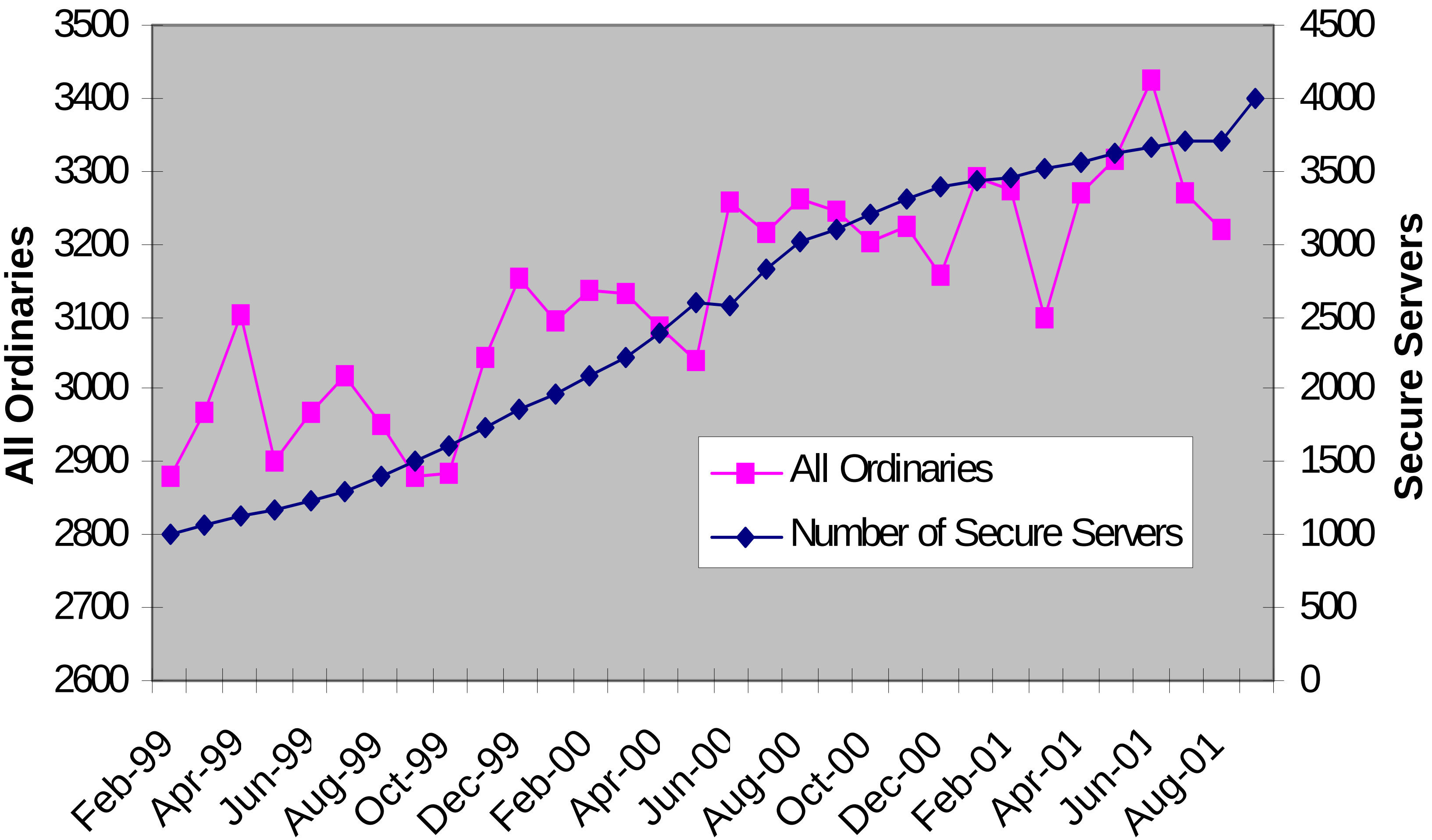
- city centre offices
- branch plants
- call centres
- remote workers
- mobile workers
- governments
- suppliers
- customers
- banks

each company buying from only a very few suppliers

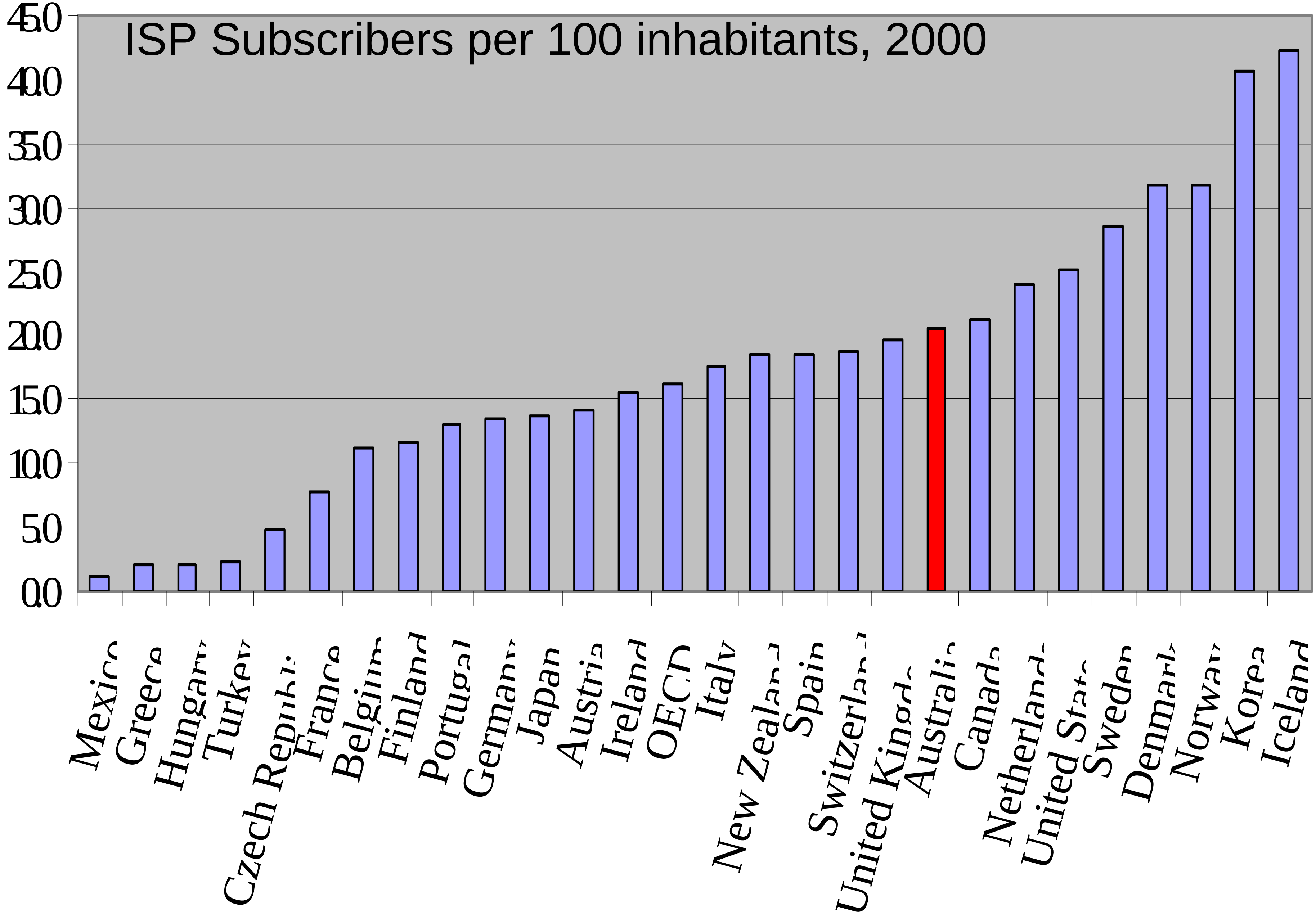
INTUG sustaining competition

- competition has had a tough time
- bankruptcies
- retrenchment
- rearguard tactics of incumbent operators
- mis-management
- confusion of politicians

INTUG Australian secure servers

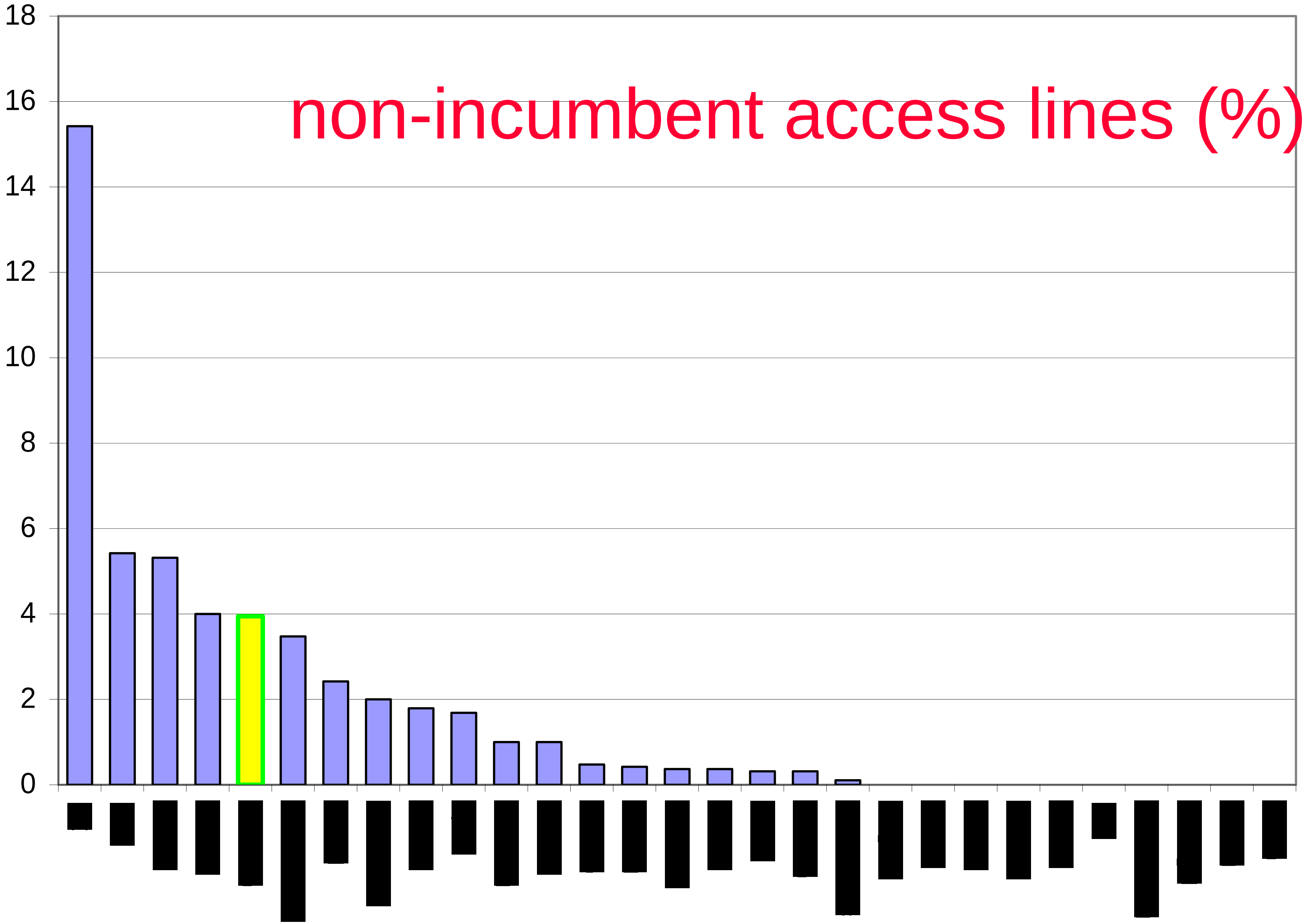


Source: OECD based on Netcraft (www.netcraft.com) and ASX


ISP Subscribers per 100 inhabitants, 2000
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
Mexico
Greece
Hungary
Turkey
Czech Repub
France
Belgium
Finland
Portugal
Germany
Japan
Austria
Ireland
OECD
Italy
New Zealand
Spain
Switzerland
United Kingd
Australia
Canada
Netherlands
United State
Sweden
Denmark
Norway
Korea
Iceland

INTUG subscriber lines

- introduction of competition
- ending the monopoly
- carrier selection and pre-selection
- number portability
- directory services
- yet still predominantly in the hands of the historic operators



Source: OECD, 2001.

INTUG geography of competition

- competitive
  – financial districts of largest cities in developed countries
- non-competitive
  – other cities and towns
  – outer suburbs
  – outback
- can vary from street to street

INTUG market failures

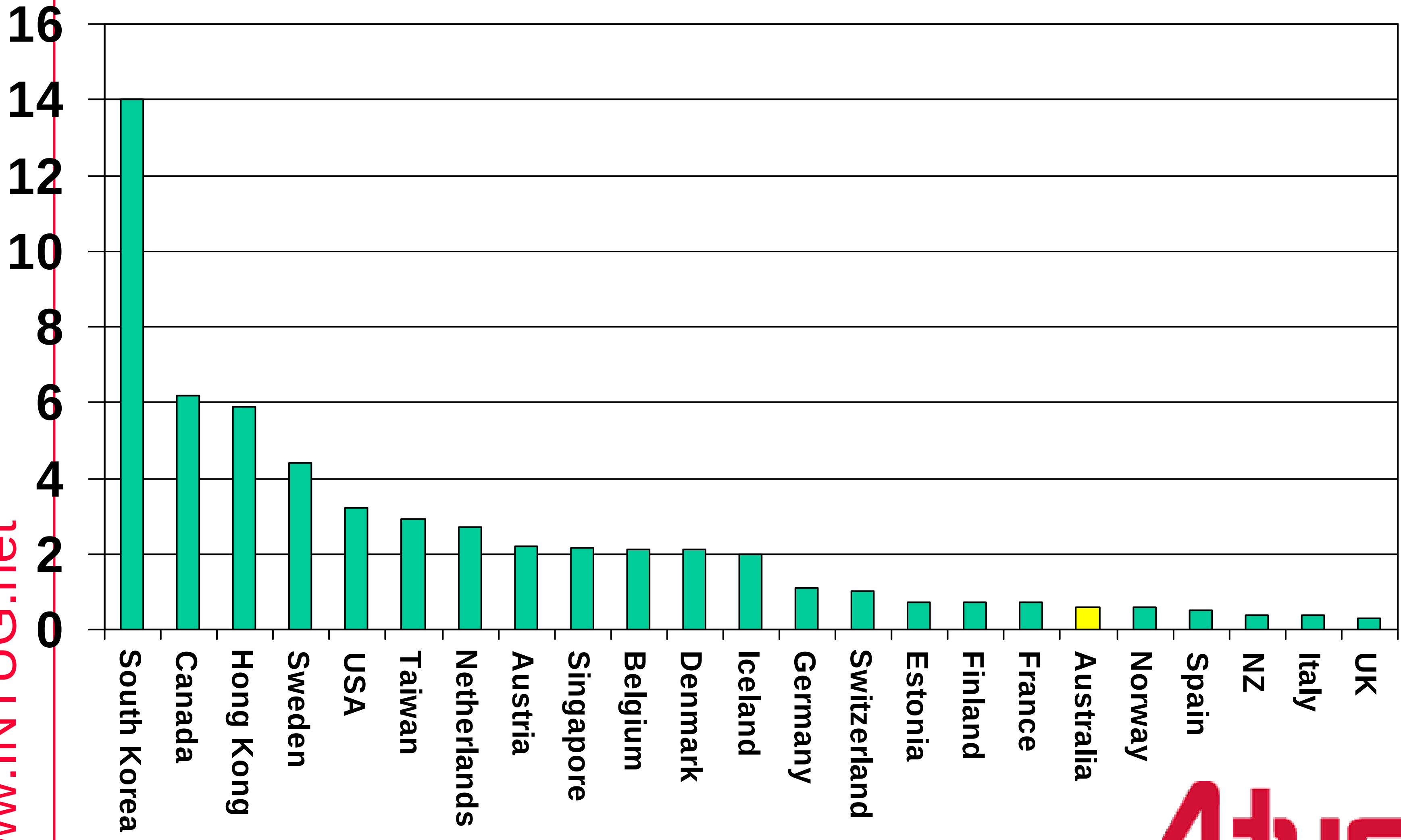
- pricing
- discounting
- availability
- quality of service
- coverage

The Last Mile – we cannot obtain adequate service in order to link to core network of the competitive carrier.

INTUG deploying broadband

- incumbents operators:
  - initially very defensive
  - proved adept at cornering the market
- surprising winners and losers
- moving very rapidly
- always-on more than broadband
- high-speed rather than broadband
- very little idea of the applications

INTUG broadband penetration



Source: OECD, 2001.

ATUG, Sydney 5-6 March 2002

www.INTUG.net

INTUG successes come from

- competition between:
  - ADSL
  - cable modems
- satellite in rural areas
- unbundling the local loop
- non-discriminatory wholesale offers for xDSL
- WLL (incumbents excluded)
- ETTH/ETTB

INTUG South Korea

- Land of The Morning Calm
- 98,480 sq km and 48 M people
- same GDP per capita as Egypt in 1950
- now US$ 16,000
  (c.f. US$ 23,000 for Australia)
- >51% mobile penetration
- >80% of mobile phones have Internet

Broadband in S Korea

- population highly concentrated in Seoul, Busan, Daegu, Incheon, Gwangju, Daejeon and Ulsan
- mainly in high-rise blocks
- very easy to wire up
- market will saturate by 2004
- mobile broadband will then take off
- operators consolidating and moving into the rest of Asia

applications

- always-on
- network games
- Voice over IP
- Napster-like applications
- pornography
- home-working

INTUG United Kingdom

- something went horribly wrong
- the sick man of Europe
- who is to blame?
  a) government
  b) regulator
  c) incumbent
  d) all of the above
- what to do to kick start it?

INTUG local loop unbundling

- incumbent operators' response:
  - deny, delay and degrade (3D)
  - saturation with their own services
- extremely hard to regulate, e.g., Reference Interconnection Offer (RIO)
- collapse of several operators in USA
  - financial markets
  - plausibility of forecasts
  - tactics of RBOCs

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wireless local loop

- slow allocation process
- different frequencies and technologies
- successes and failures
- knock-on effects of dot bomb
- only a few historic operators have been allowed into WLL market

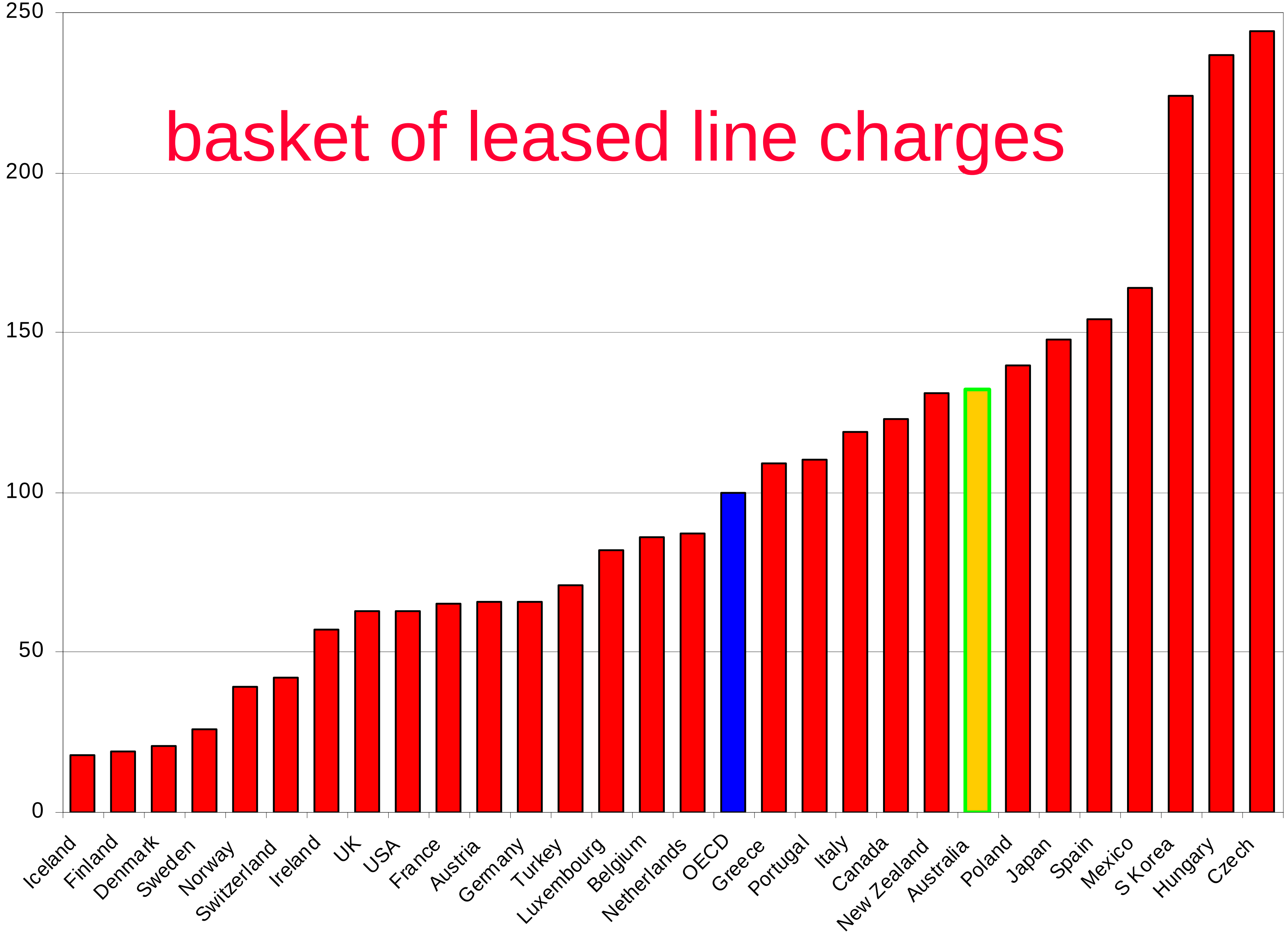
operators' choices

- fibre to premises
- leased line
- unbundled local loop
- wireless local loop
- xDSL
- ISDN

Driven by availability, quality and cost

INTUG leased lines

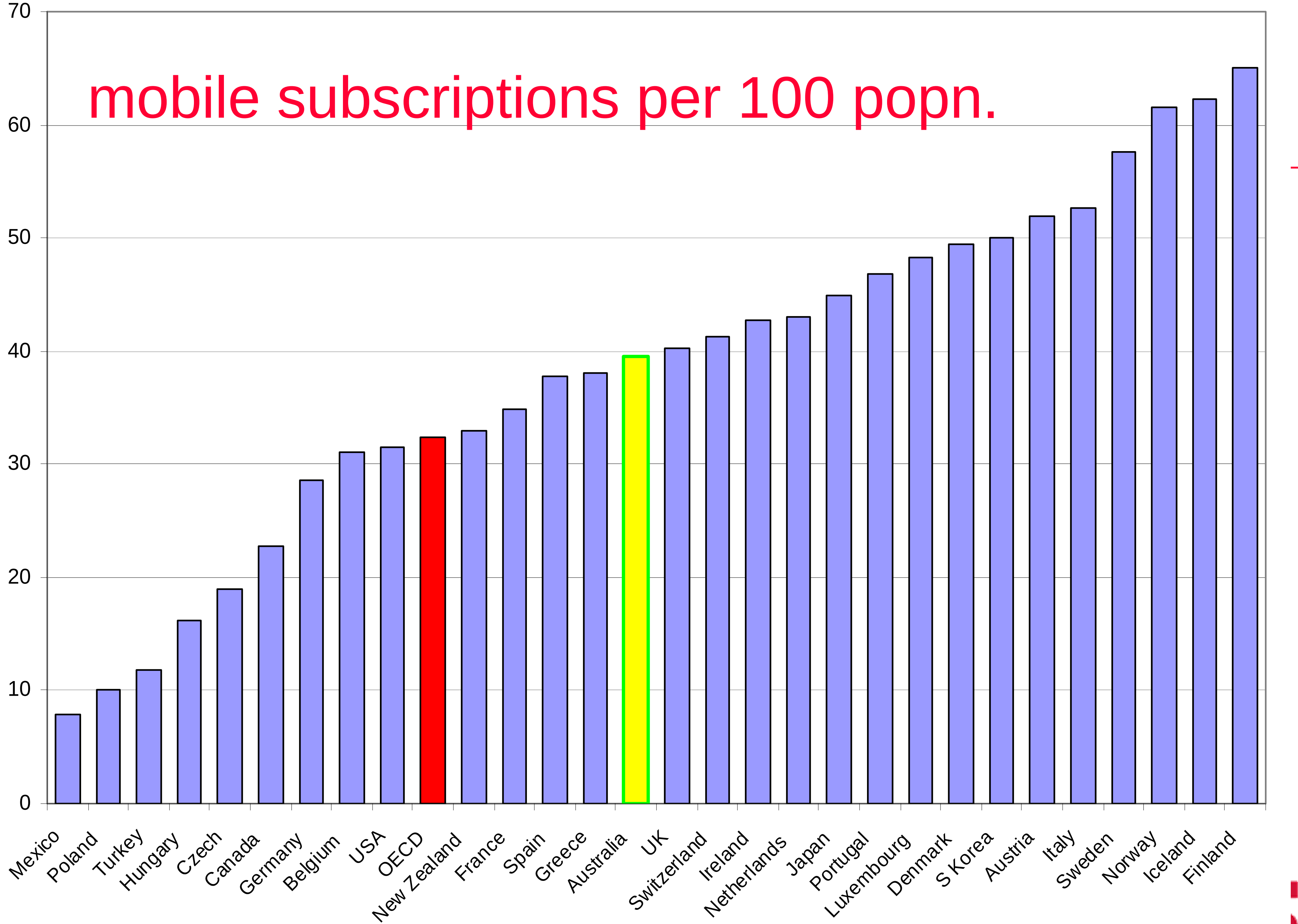
- market failures
  - pricing
  - non-pricing
- USA leads on
  - prices and discounts
  - geography of availability
  - especially at higher speeds
- OECD and EC reports



Source: OECD, 2001.

mobile Internet

- a lot more than 3G
- disappointments with 2.5
- competition from WLAN
- a blend of access technologies



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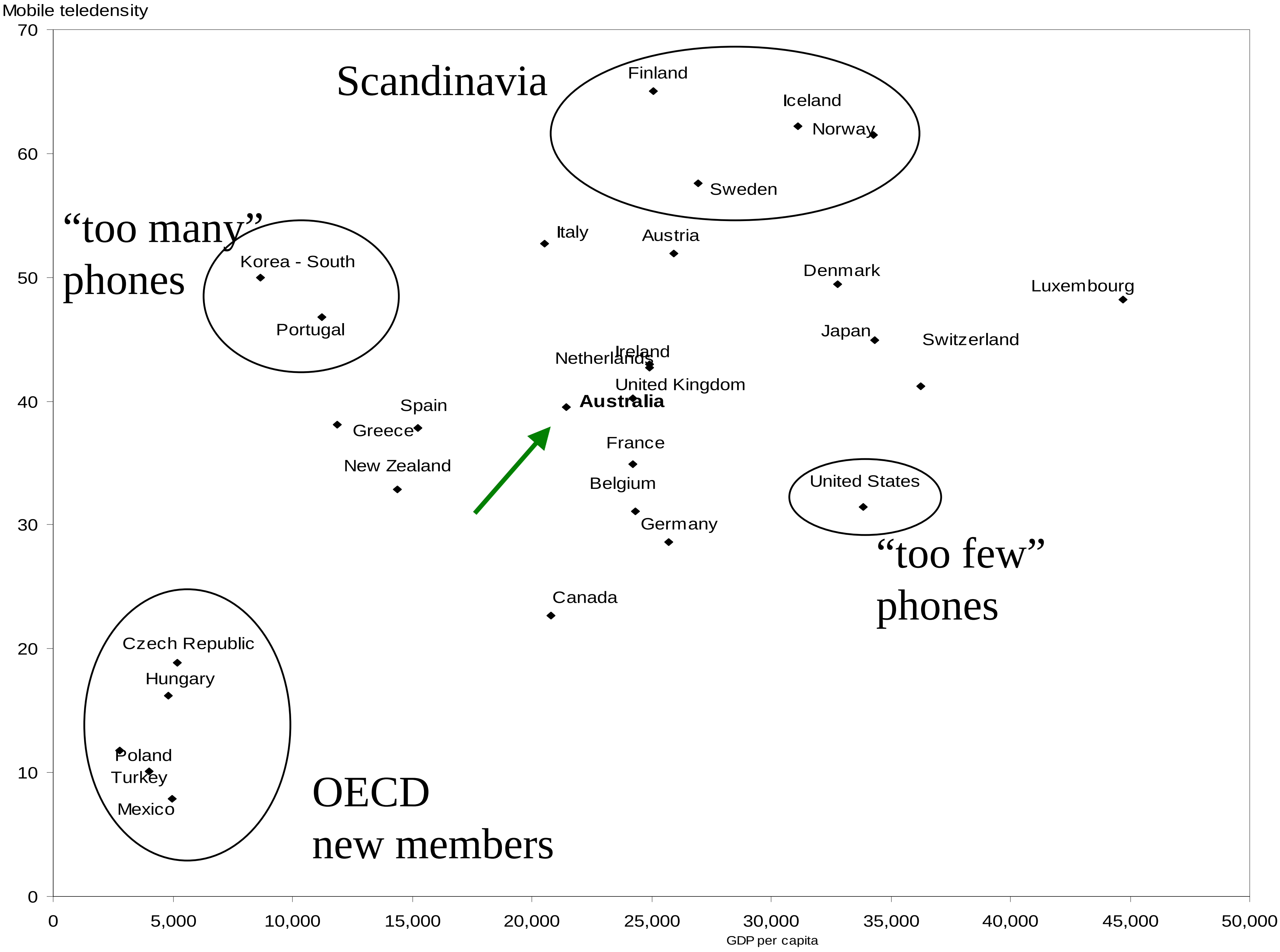
Mobile teledensity
70
60
50
40
30
20
10
0
5,000
10,000
15,000
20,000
25,000
30,000
35,000
40,000
45,000
50,000
GDP per capita
Scandinavia
Finland
Iceland
Norway
Sweden
“too many” phones
Korea - South
Portugal
Italy
Austria
Denmark
Luxembourg
Japan
Switzerland
Netherlands
Ireland
United Kingdom
Australia
Spain
Greece
New Zealand
France
Belgium
Germany
United States
“too few” phones
Canada
Czech Republic
Hungary
Poland
Turkey
Mexico
OECD new members

INTUG success of GSM

- state support for the standard
- spread out from Europe to most of the world (with some CDMA and PHS)
- consolidation of operators
- oligopolistic practices leading to:
  – exorbitant international roaming tariffs
  – high call termination charges
  – ability to resist regulatory reform

INTUG failure of GPRS

- few handsets and badly delayed
- no international roaming
- except Denmark, Finland, Norway and Sweden
- gateways to corporate VPNs?
- USA overtaking Europe

INTUG failure of 3G?

- self-immolation of operators in German and UK auctions
- out of favour with financial markets
- attempting to control downstream service markets
- poor brand names
- have to succeed with GPRS first

INTUG wireless LANs

- several different standards
- unlicensed spectrum (2.4 + 5.8 GHz)
- needs additional security measures
- campuses, factories and offices
- hotels and airport lounges
- Starbucks' coffee shops
- pizza and hamburger bars

INTUG privacy

- 3G revenue forecasts come from customised services
- a big part being location-based services
- demand is very unclear
- legality is uncertain under data protection laws

INTUG m-commerce

- does it exist?
- is it different from E-commerce?
  - customisation?
  - location-based services?
- is ubiquitous commerce more accurate?
- what is the business mode for this?

INTUG m-commerce

B2Employee (B2E)

- VPN access
- Intranet access

B2Consumer (B2C)

- access to services
- adverts

Peer-to-Peer (P2P)

- SMS and MMS
- Instant Messaging
- Napster

INTUG a common global pattern

- persistent market failures
- incumbents are medal winners at delaying tactics
- competition law is inherently slow
- a continuing need for asymmetric regulation of incumbents
- collapse of high-tech share prices has blunted competition

INTUG consolidation

- an oligopoly of operators
- common behaviours
- searching for global business models
- regulators and users face recurring problems

INTUG summary

- pressing need for new entrants to create and sustain competition
- we must press on with LLU, WLL and alternative means of access
- we still do not know what the Mobile Internet and broadband services will really be so we must allow for all possibilities