Why some economies succeed with broadband

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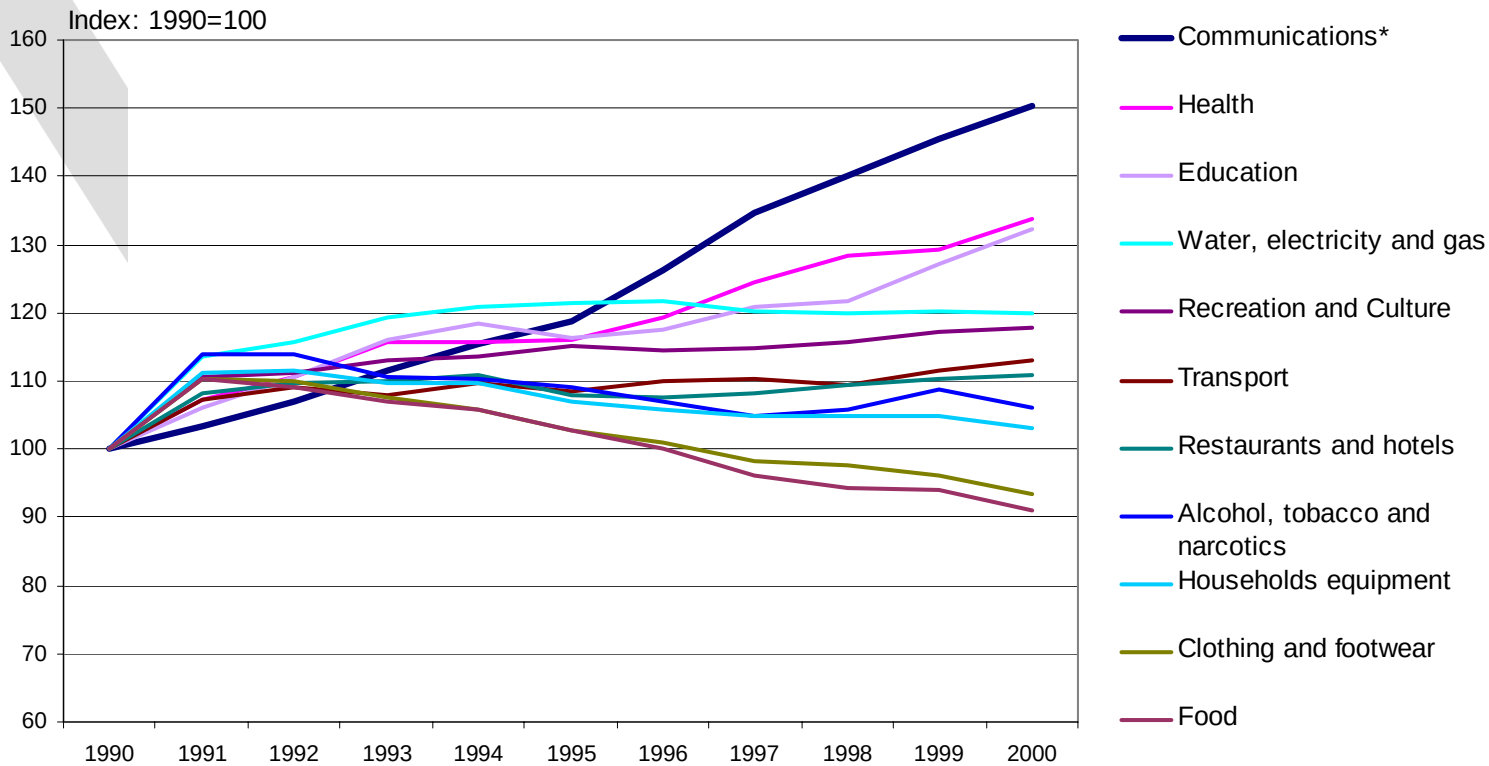
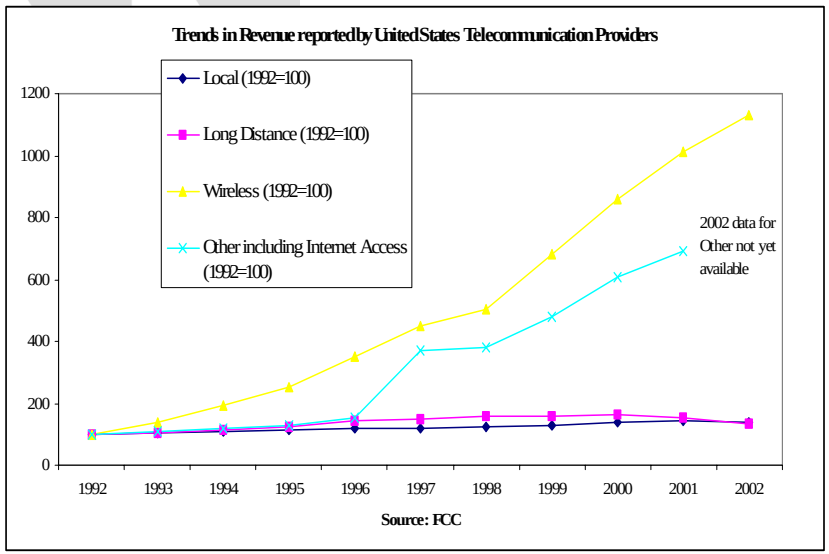
*The views expressed are those of the author and may not reflect those of the OECD or its Member countries.

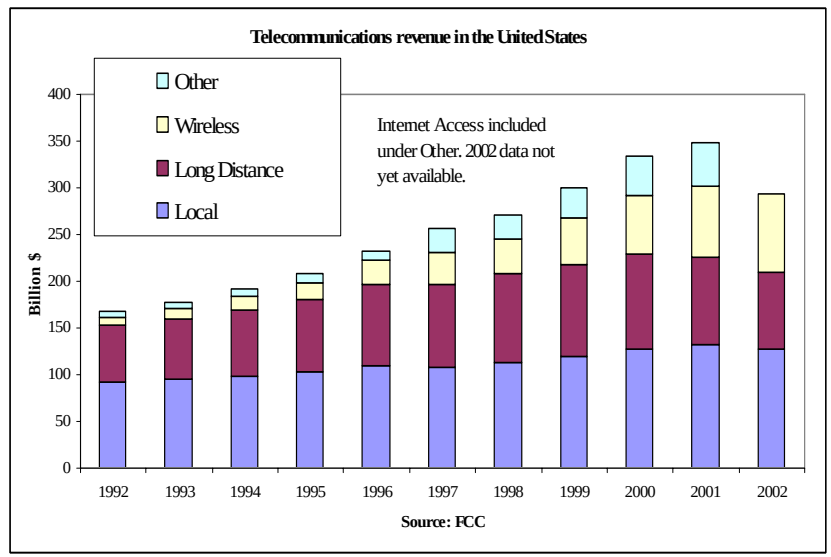
Changes in the proportion of Communication in disposable households incomes

**Communication* includes Telecommunication equipment and services and Postal services. Note: Hungary, Norway, Slovak Republic, Switzerland and Turkey are not included in this index.
Source: OECD, SNA database



Why is broadband important to telecommunication carriers?





Why is broadband important to the rest of us?

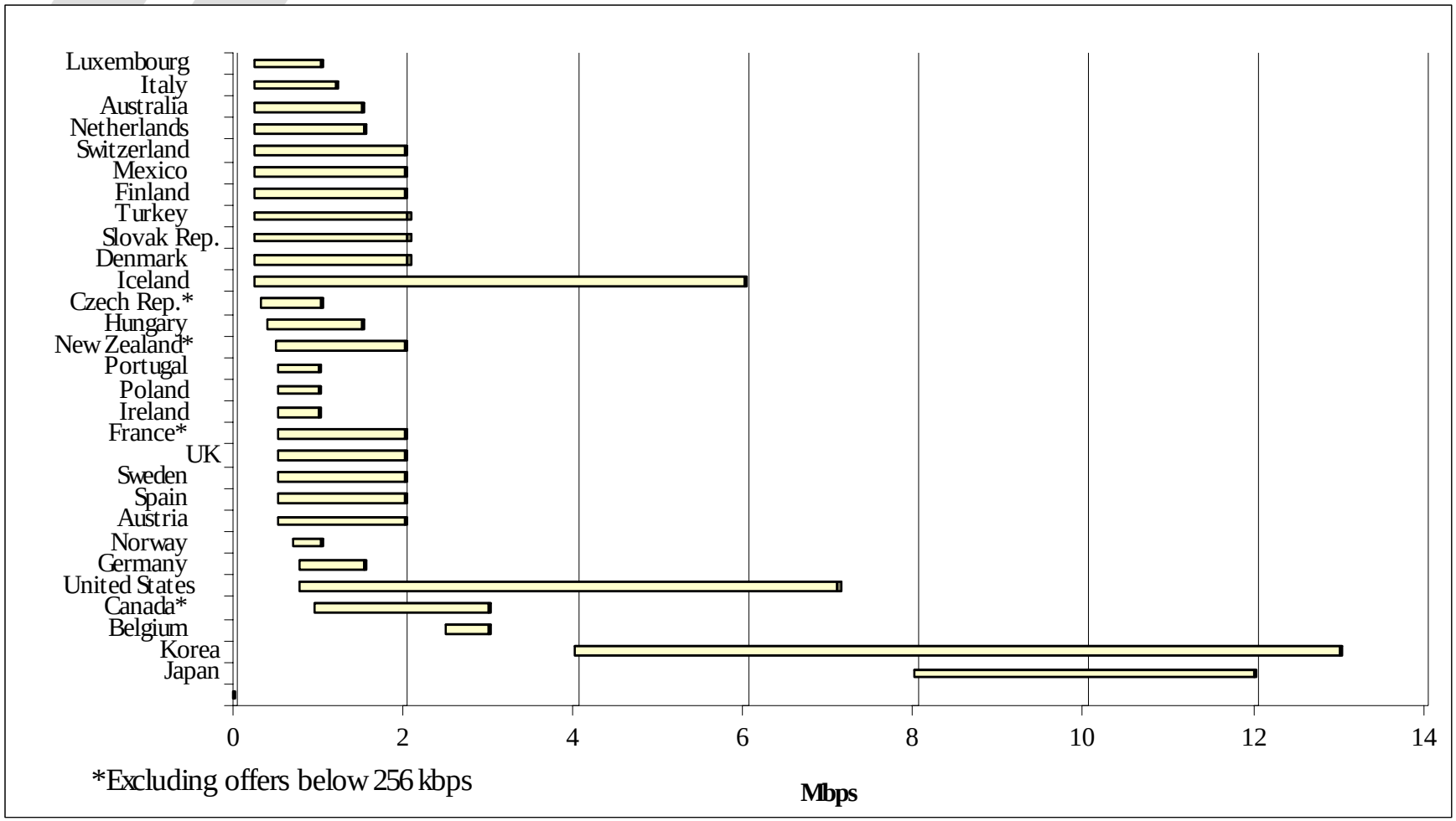
- Broadband provides first “always-on, affordable, high-speed” access for residential users, some public services, small business, and the possibility for employees of larger firms to tele-work in new and innovative ways.
- Role of ICTs in development is an ongoing debate but the economic and social benefits are still evident amid the current slow-down in the telecom services sector (which by the way is still growing).
- Broadband access is the next step in a series of ICT developments but penetration is low (5 subscribers per 100 inhabitants across OECD and 0.2 per 100 outside OECD).
- Broadband digital divide:
  - Some OECD countries have barely started while one country is pondering whether it has reached a penetration ceiling.
  - DSL availability ranges from “not offered” through to 98% population coverage.
  - Some sell broadband at ISDN speeds while others are dramatically increasing baseline offers and extending the reach of fixed broadband via wireless LANs.
- At this stage, it is easier to answer why broadband succeeds in some economies than why some economies succeed with broadband!

What is the potential market for broadband access?

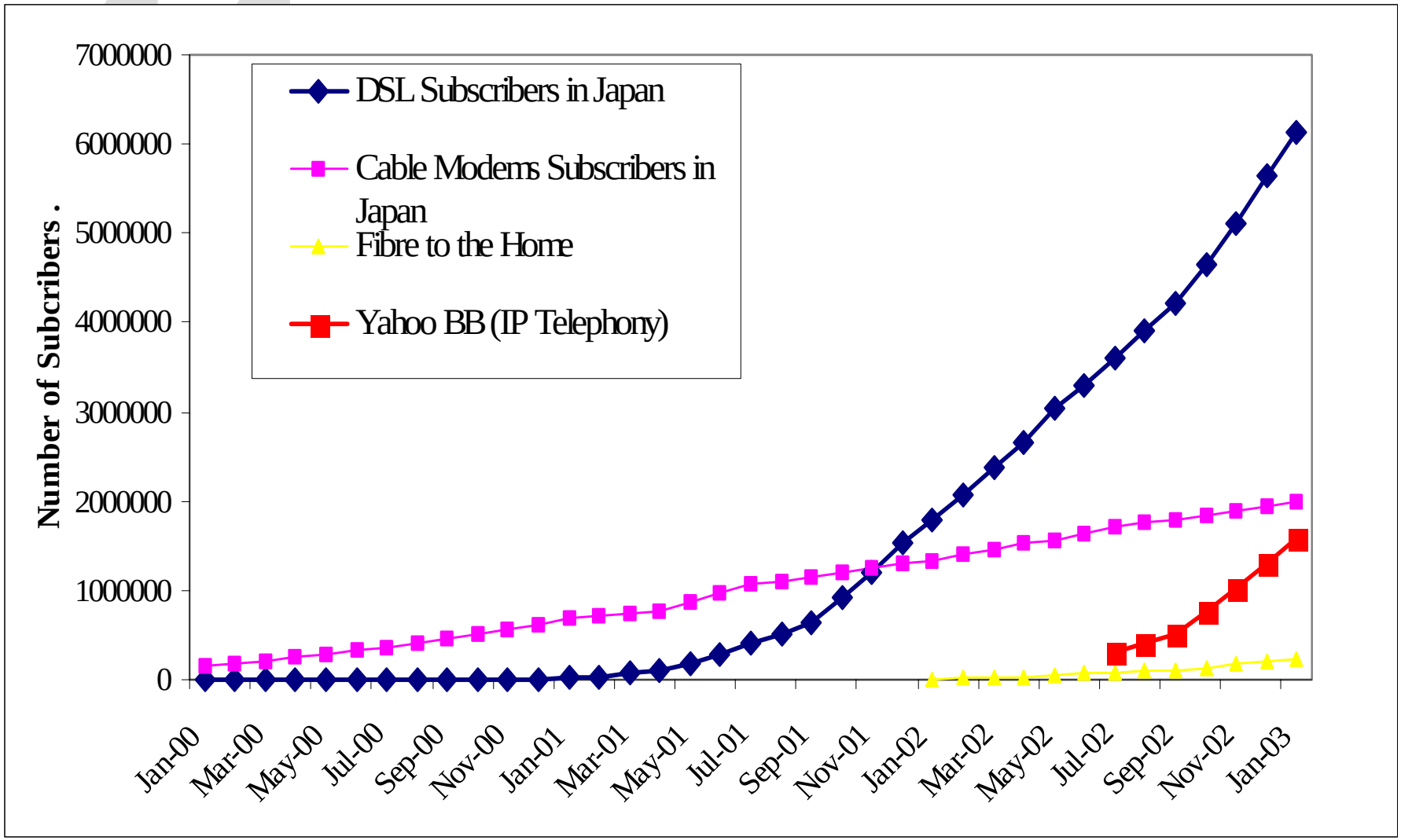
- Alcatel puts the value of the global DSL services market, in 2002, at US$14 billion. Adding other broadband access would lift that number well above $22 billion. Small in terms of overall telecoms market but at very early stage of broadband development.
- How much can market grow? One approach is to look at how many Internet subscribers there are and calculate how many will adopt broadband. In OECD area somewhere between 18% to 25% of all fixed network Internet subscribers already have broadband access (albeit with huge variations across countries).
- Anecdotal evidence suggests most users migrate from dial-up to broadband. On the other hand, Telekom Austria claims that 40% of its broadband subscribers previously had no Internet access!
- Broadband access via Wireless LANs adds another dimension. The increasing incorporation of wireless enabled chips in less inexpensive communication devices and development of prepaid cards for W-LANs mean that any predictions of market size may be as accurate as those for mobile telephony.
- Value added services? Broadband impact on growth and distribution of revenue in the information industries?
- How much capacity is enough to meet demands of users on the fixed network? Is there demand for wireless broadband via LANs? Japan and Korea may provide the first indications.

DSL Broadband Divides

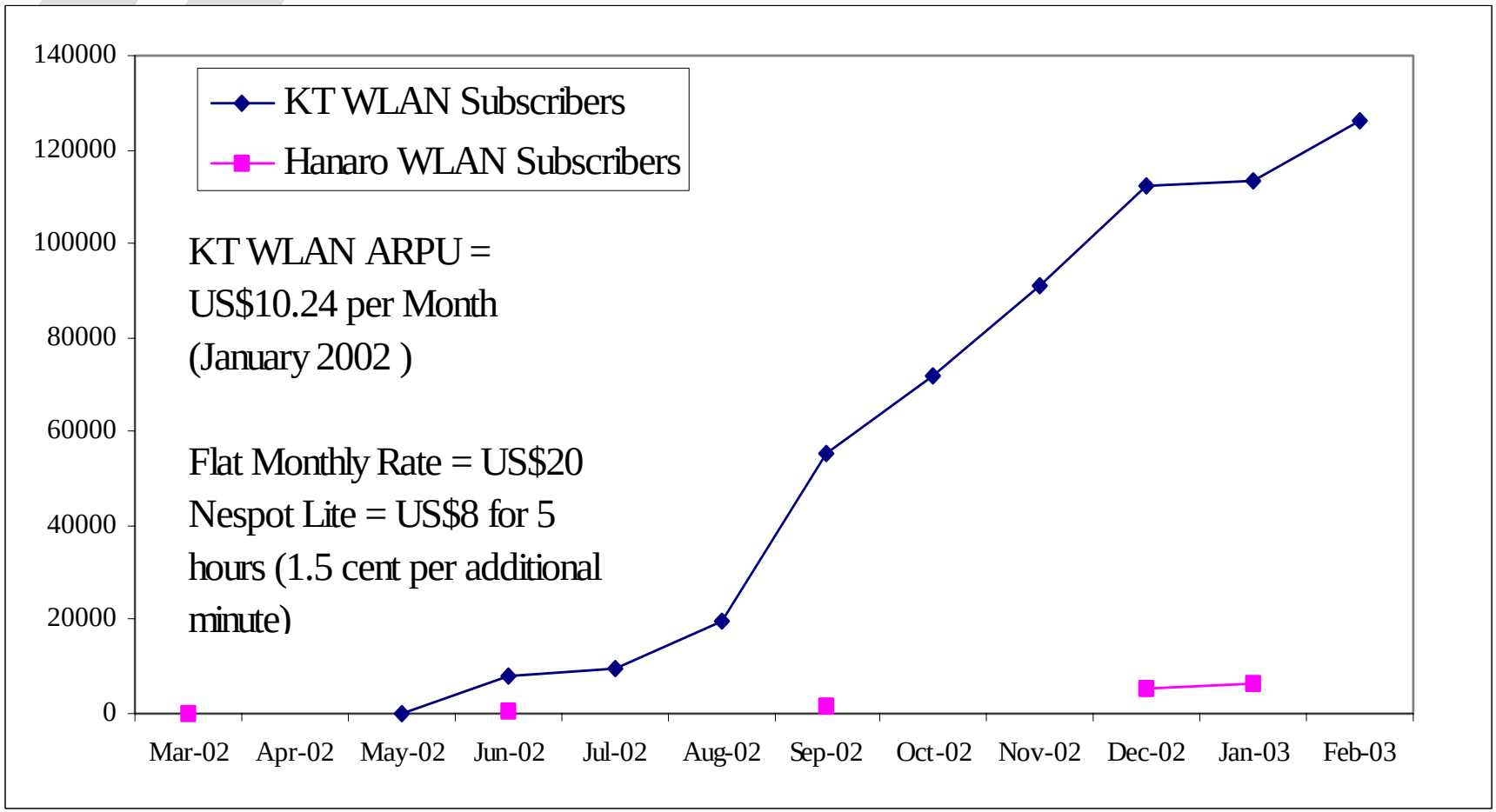
1. Japan – excludes Fibre at 100 Mbps & Korea excludes VDSL at 20 Mbps.
2. Iceland and USA highest capacity aimed at business users (e.g. Verizon: 7.1 Mbps = $204) .



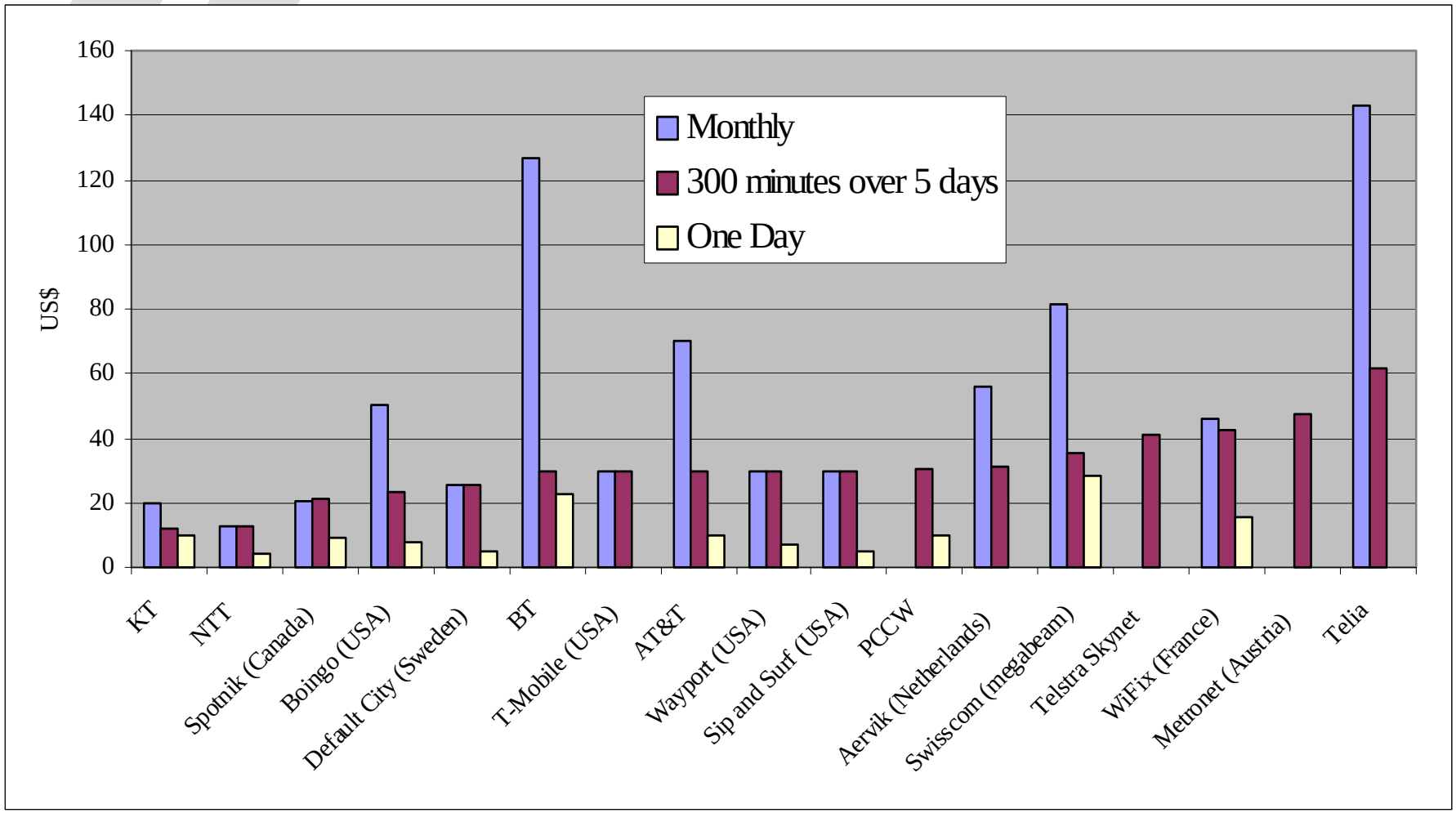
Question for carriers is what users want from broadband: Will users migrate from 8-12 Mbps to 100 Mbps? Japan may provide first demand side clues.



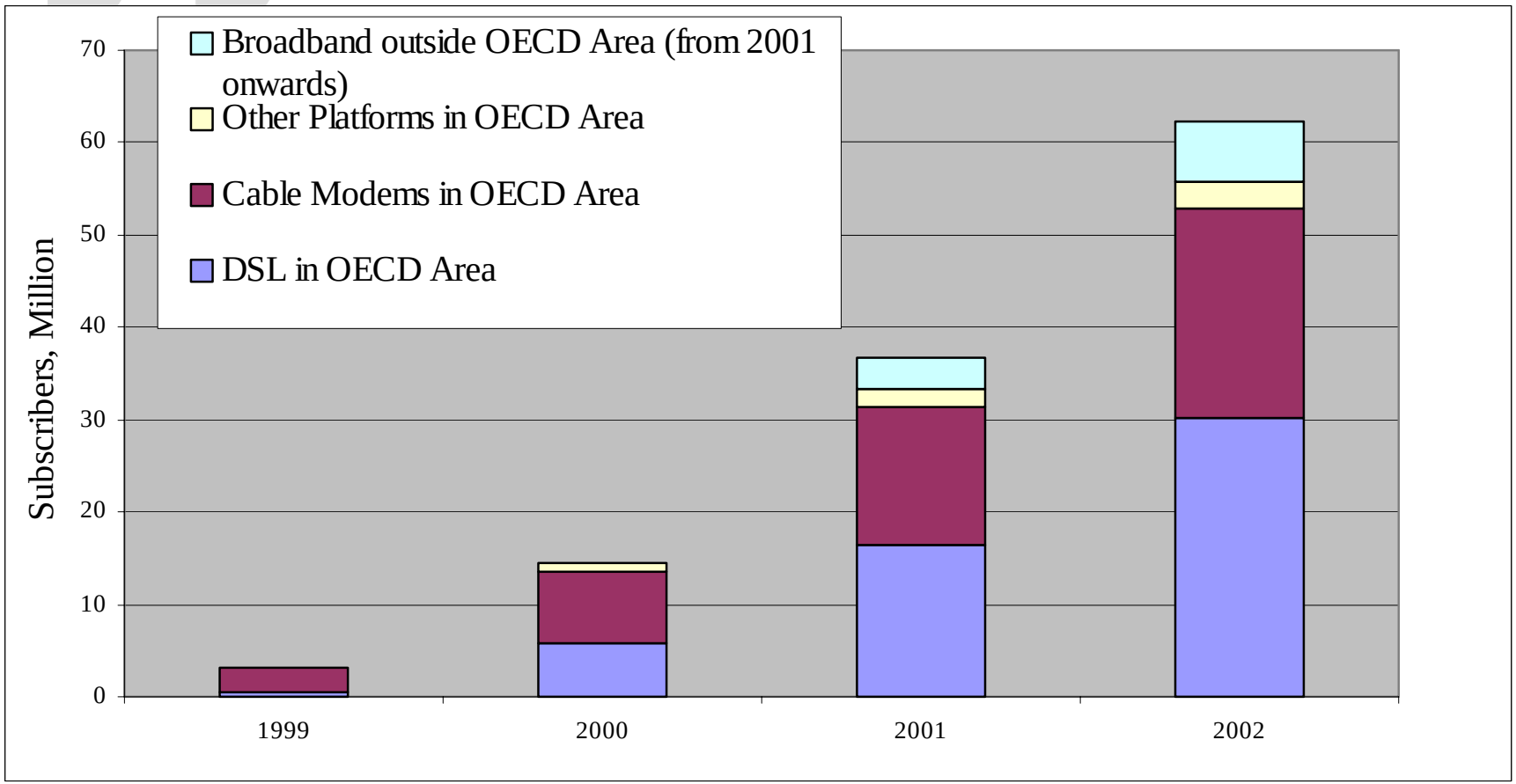
Wireless LAN 802.11b services in Korea



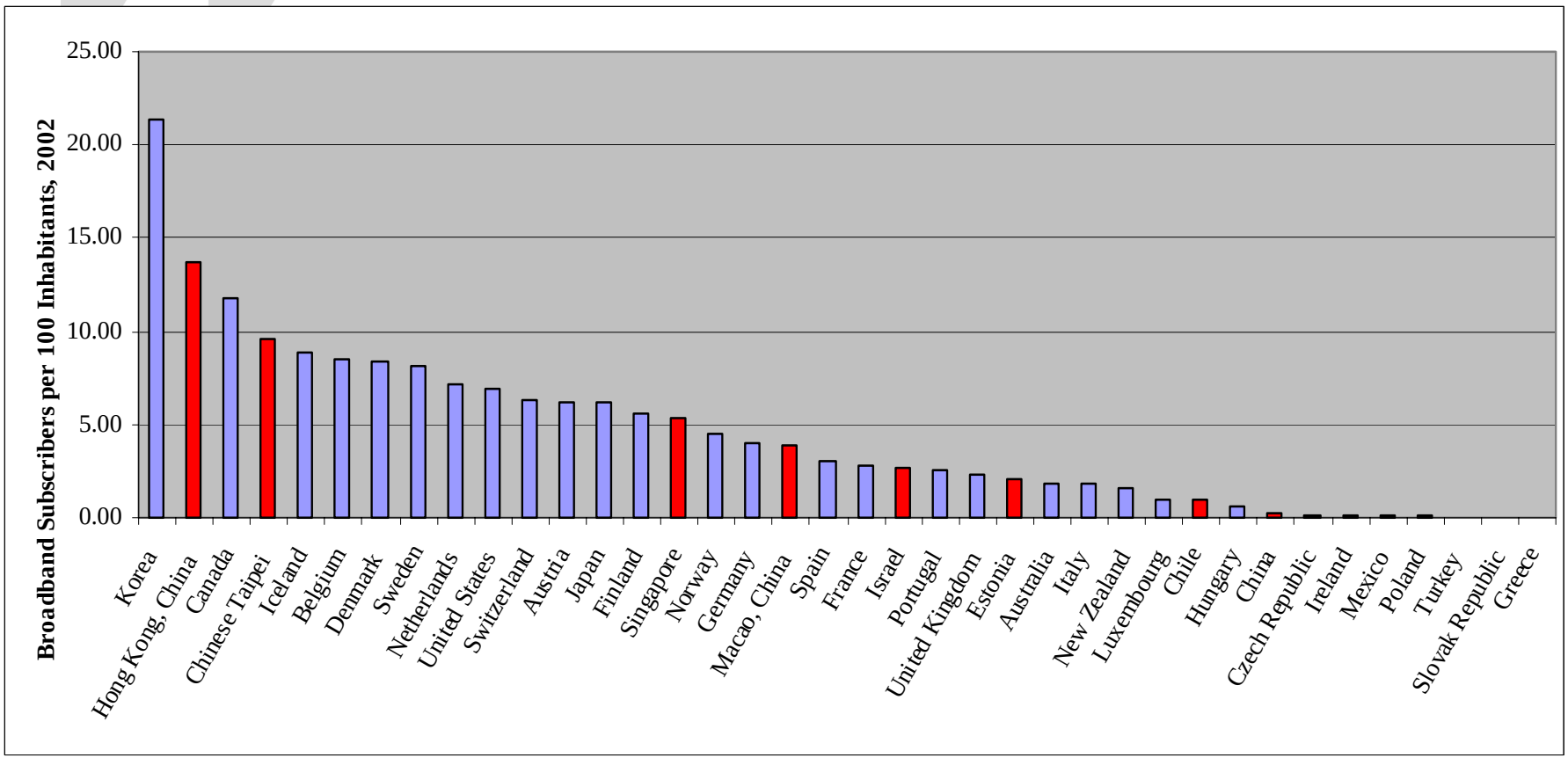
Wireless-LANs: 802.11b pricing in selected countries: Carriers are testing the market and experimenting with pricing.



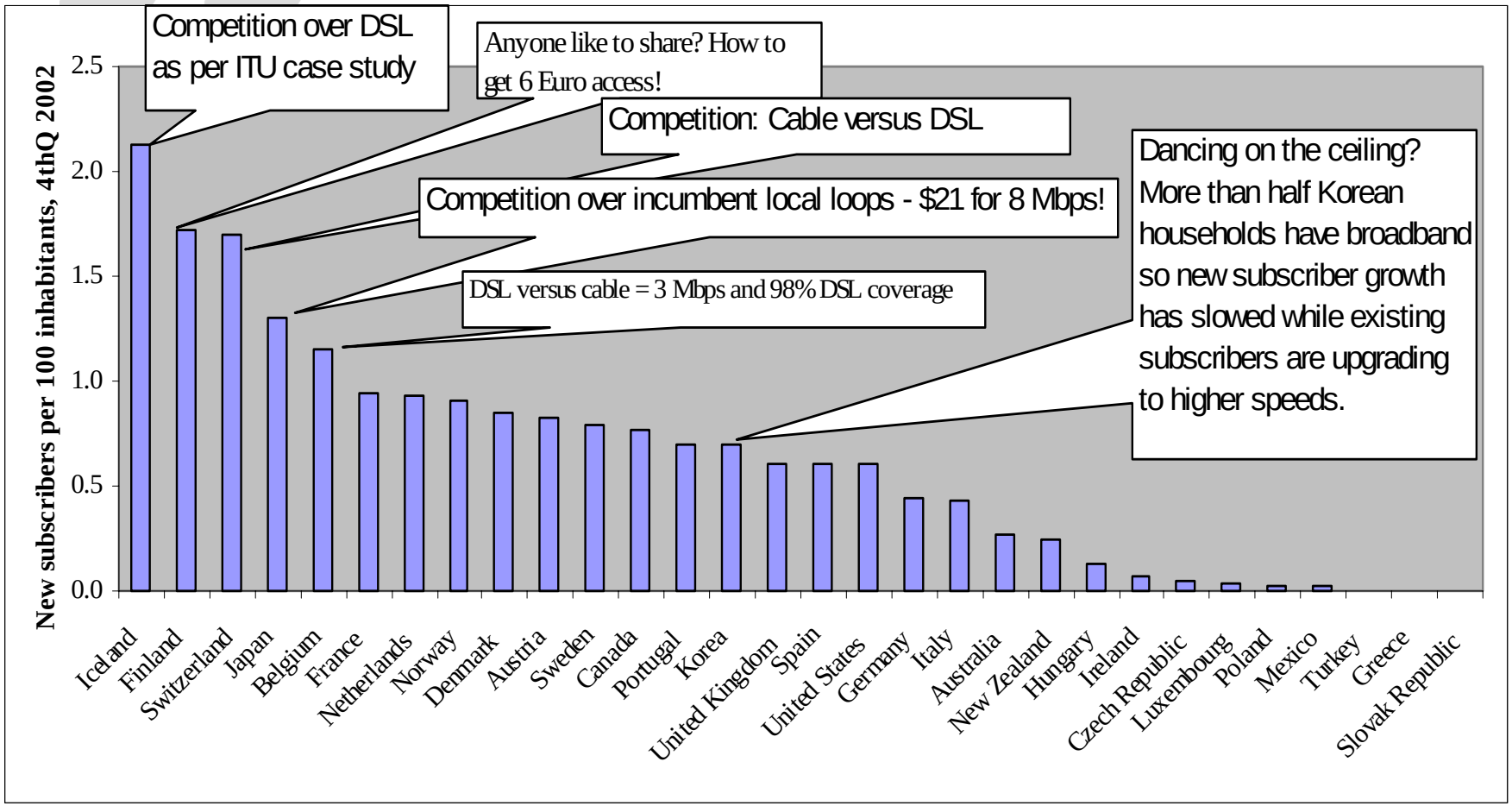
The good news is that broadband (or high speed access) is growing quickly with more than 62 million subscribers in the world by end 2002. This represented a 70% increase over 2001 and 4th quarter 2002 was highest quarterly growth yet.



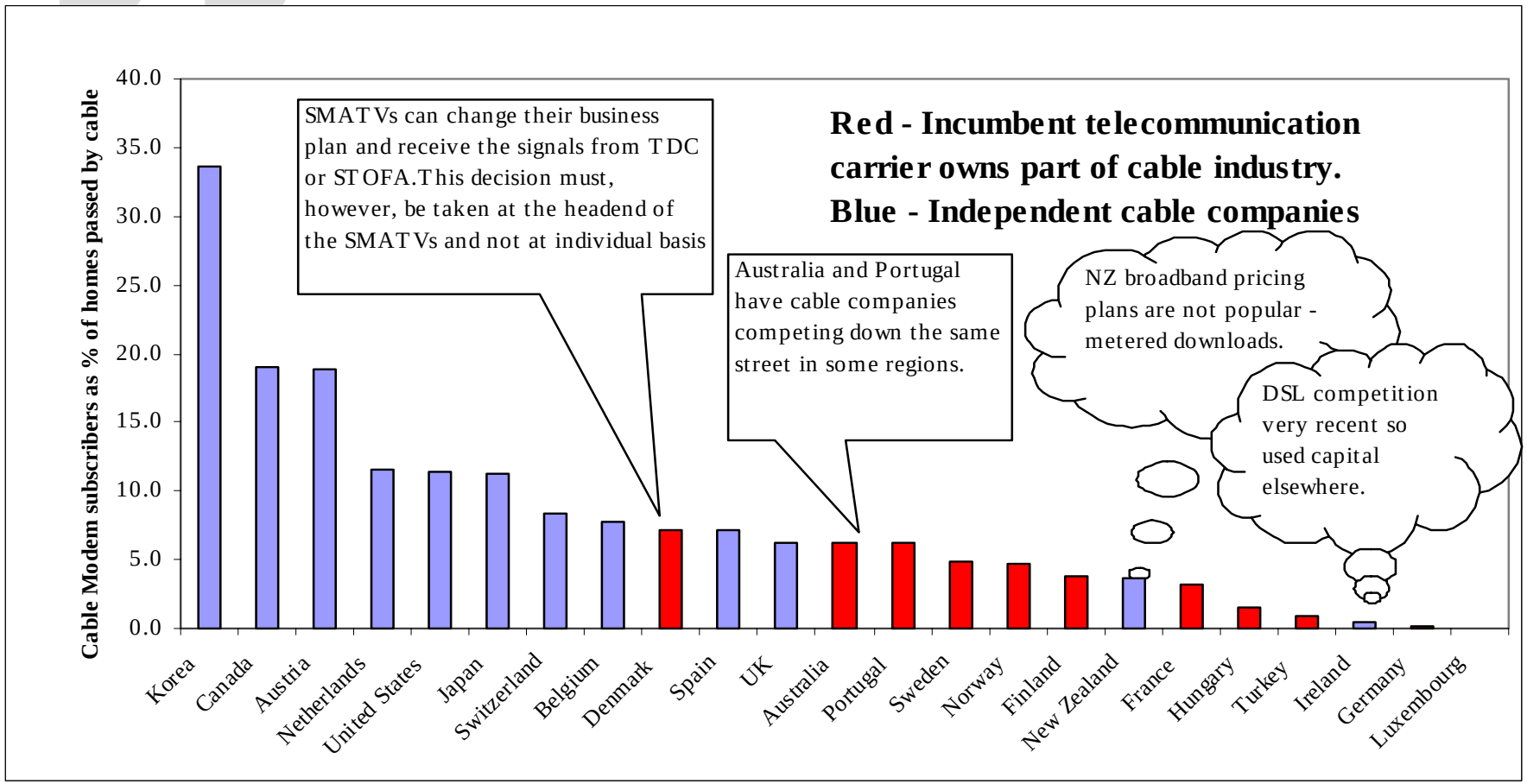
Broadband penetration is very uneven throughout the world so we naturally look to leading countries for what works



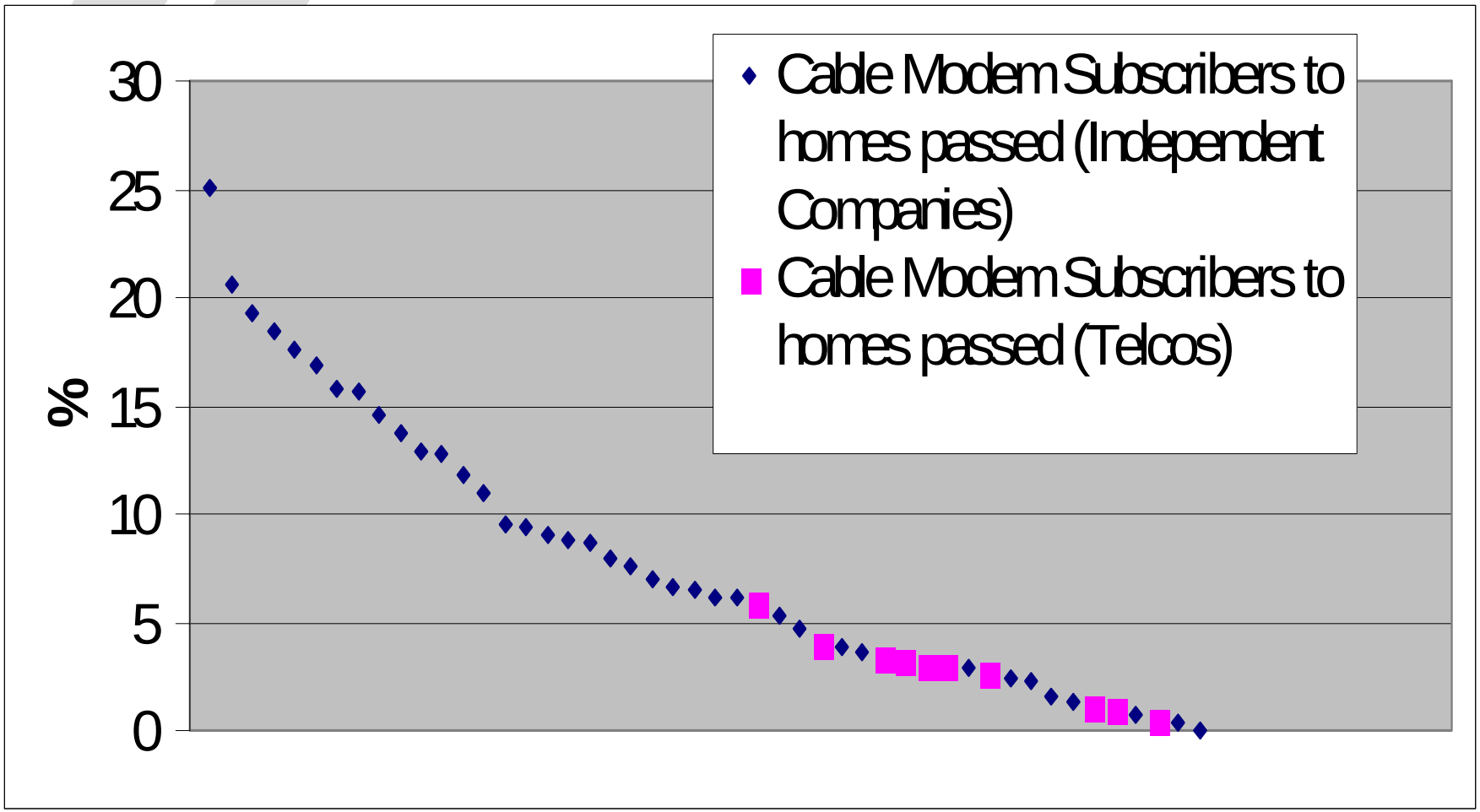
Who is growing the fastest: Broadband Growth Rates in OECD countries



If one company owns both available platforms there is a lower take-up of cable modems and lower overall market growth. This impacts on a third of OECD countries.



Telecommunication carriers have a low broadband take up rate on their cable networks.



What doesn't work

- Monopolies
- Telecommunication Carriers owning cable networks
- Truck Rolls (Need Self Install)
- No evidence that low speed 'always-on" offers (e.g. 128 kbps, 144 kbps) are popular compared to broadband but data are hard to find:
  - In Denmark where a 144kbps cable service is on offer only 13% of cable users and less than 5% of overall market use that option.
  - "If poorly understood, consumers may be seriously disappointed when they realise that although they had been promised high-speed Internet access, in practice, it is not much better than dial-up." ART-Telecom "**Internet, a review of the French market",** ***March 2003***
- Unattractive Pricing
  - Low take-up rates in Australia and New Zealand suggest many potential users do not like low download caps (e.g. 500 Mbytes) and metered pricing as they limit use of streaming media. The contradiction is recognised in differentiation of pricing, by incumbents, between their own content/services and those of others.
  - Very high prices, of course, are constraining growth in a number of OECD countries.

What doesn't work (continued)

- Subsidies to suppliers:
  - Korea's success was not due to government funding. Low cost loans initiated during Asian financial crisis but operators, such as Hanaro, soon found they could get less expensive capital elsewhere as crisis eased. Korean government did stimulate the backbone market by financing capacity and then being repaid by the utilisation of government agencies. But backbone markets are not the barriers to broadband in developed countries and a number of governments have funded backbones in various ways and not experienced success in broadband access. Subsidies are no substitute for competition and a lack of access competition usually means investment is deployed ahead of demand. Liberalisation is the best way to stimulate backbone construction.
  - But "middle mile" backhaul problem clearly does exist in some rural areas. Demand aggregation by public sector users is one option as long as it is applied in a way that does not distort competition. Any government funding should be for users rather than suppliers to address problem.
  - Universal service policies for broadband, in terms of last mile access, are premature. What would be provided? Low cost solutions are being found by users and new entrants. For example, increasing use of wide area wireless LANs is addressing the 'last mile' problem for small rural towns. An increasing number of WISPs (Wireless ISPs) are serving rural areas. (Antennas on locations such as wheat silos are being found to have extensive coverage areas and the technology is rapidly evolving).

What does work?

- Policies aimed at promoting competition
  - Facilities competition is the best option (e.g. Korea, Canada)
  - Unbundling and line sharing are tools to open the market to competition and can accelerate growth (e.g. Denmark, Iceland, Japan)
  - Cable divestiture by incumbent telecommunication carriers have proven its worth in countries such as the Netherlands and Switzerland.
  - Ensuring spectrum is available for innovative solutions.
  - Independent regulator
- Actual Broadband
  - The baseline offers in Belgium, Korea and Japan all target much higher broadband performance levels including superior upstream capabilities.
- Pricing
  - Metered pricing can be an option but need to have a reasonably priced flat rate options for those users that prefer certainty and want to use broadband for streaming media.
  - High growth rates are invariably linked to operators reaching a price point and structure attractive to users.
- Benchmarking
  - Introduce regular reporting on the availability and take-up of broadband services.
- All of above
  - Competitive entry with innovative technology, services, pricing and regulatory safeguards.
- Much else but that is usually not in the hands of telecommunication policy makers and telecommunication carriers.