



Broadband competition:
Penetration, speed and price

Taylor Reynolds

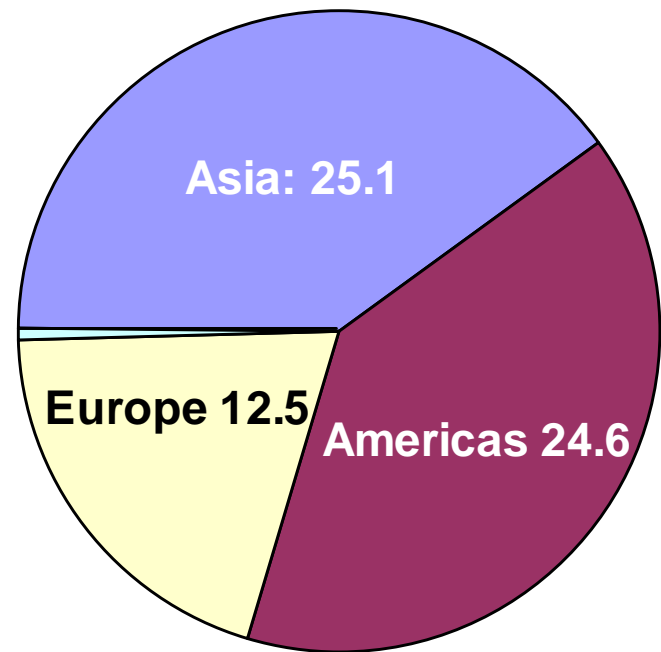
ITU Strategy and Policy Unit

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Broadband facts

- **63 million subscribers worldwide (1% of the world) in over 80 countries (31 Dec 2002)**
- **94% of subscribers are in high-income economies**
- **Speeds vary from 0.256 Mbit/s to 100 Mbit/s**
- **Nearly 60% of broadband is delivered over telephone networks, 40% over cable**

Broadband subscribers, millions, by region, Dec 2002

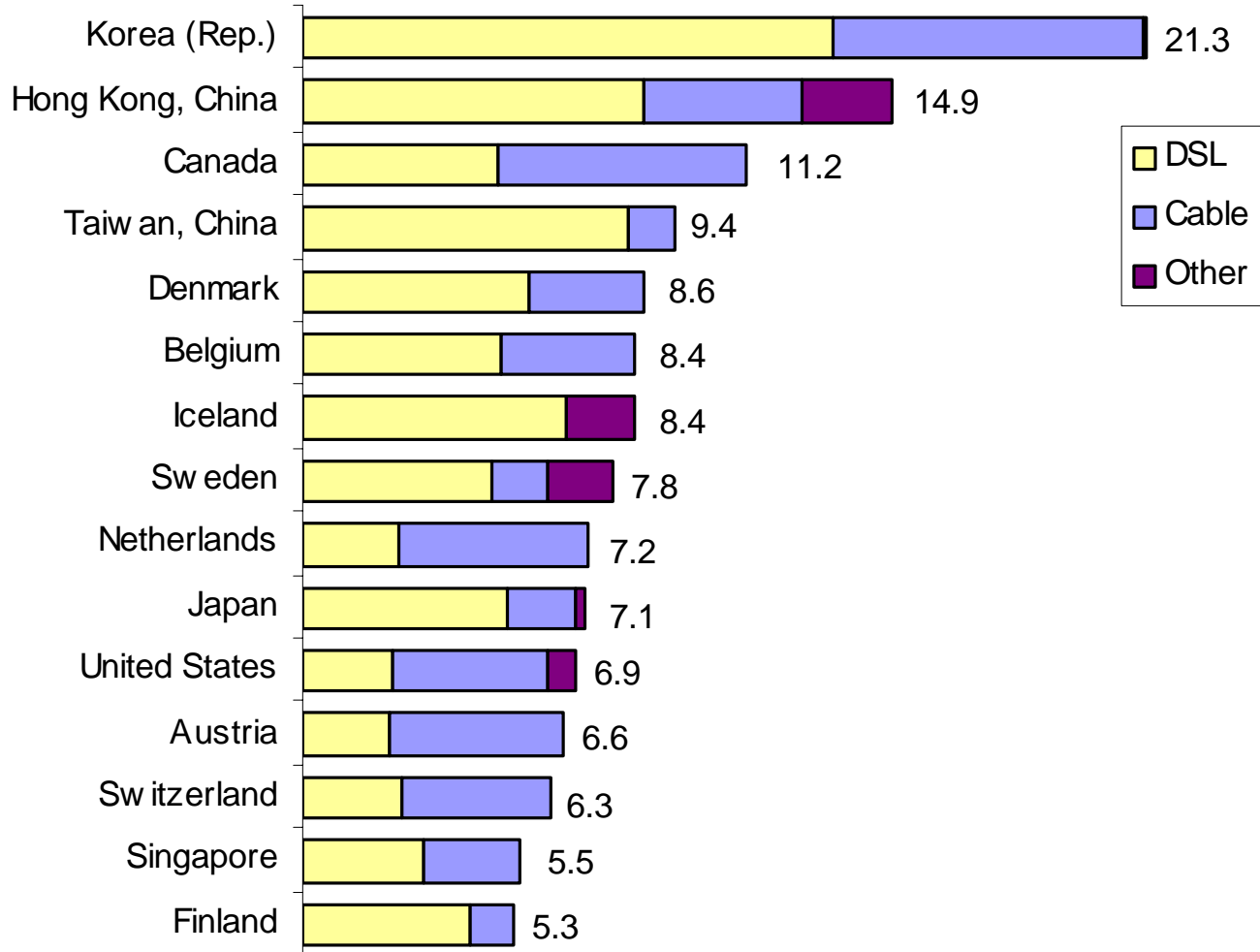


Africa: < 1 million

Oceania: < 1 million

Leading broadband economies

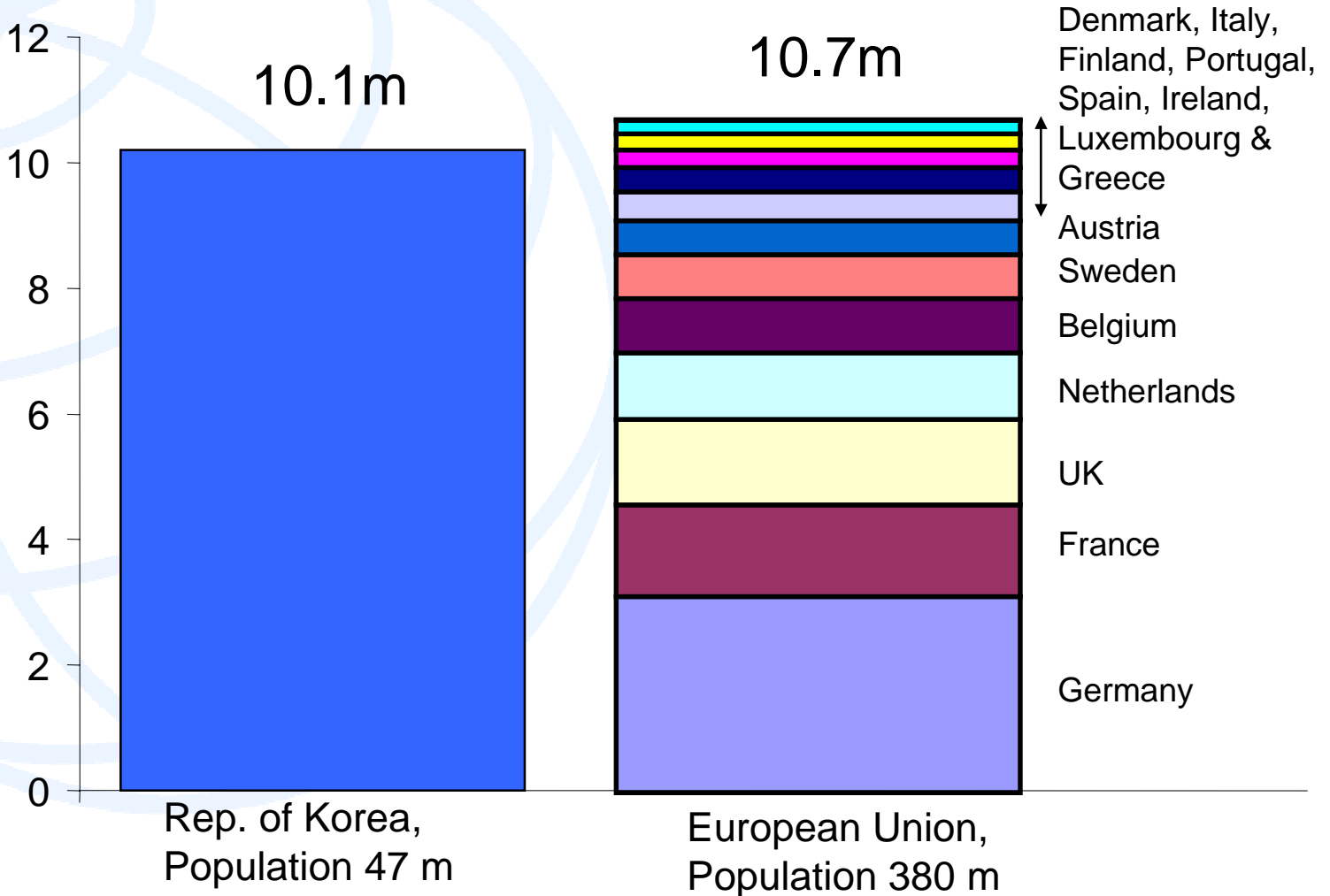
Broadband penetration, subs per 100 inhabitants, by technology, 2002





Just how far ahead is Korea?

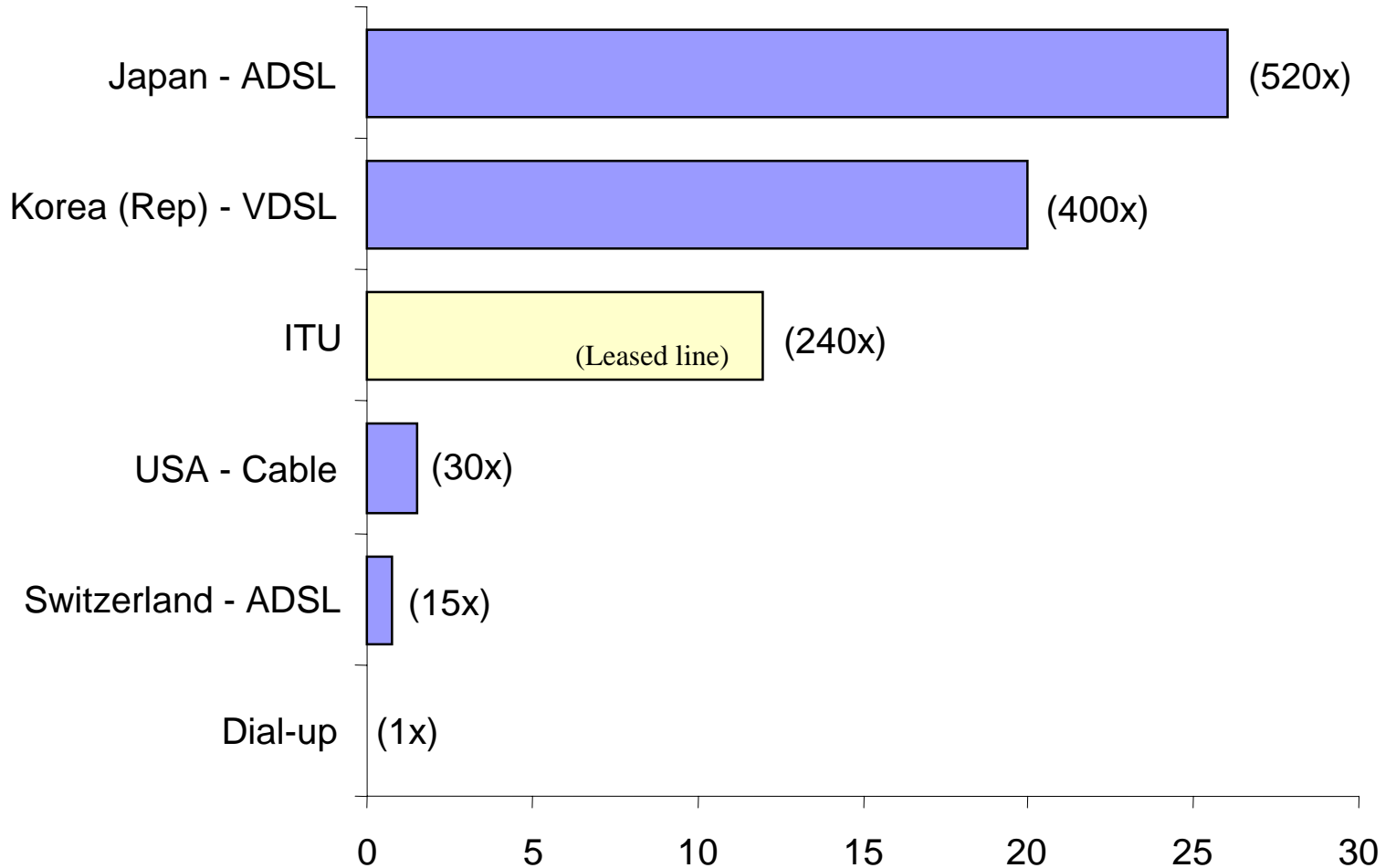
Broadband subscribers, end 2002



Source: ITU World Telecom Indicators Database.

Relative broadband speeds

Broadband speed comparisons, Mbit/s, July 2003



Source: ITU research



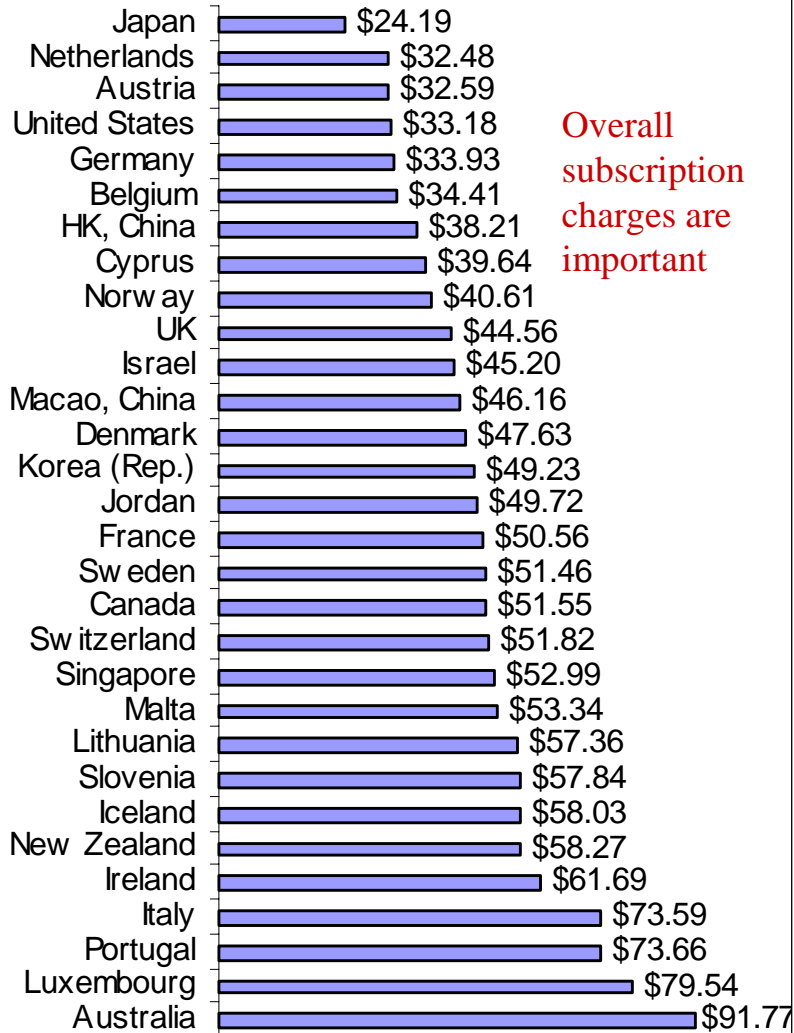
Downloading DVD video

- **Time needed to download a DVD over each Internet connection (4 gigabyte file)**
 - **Japan: ADSL (26 Mbit/s) – 20 minutes**
 - **Korea: VDSL (20 Mbit/s) – 26 minutes**
 - **ITU: Leased line (12 Mbit/s) – 44 minutes**
 - **Belgium: ADSL (3 Mbit/s) – 3 hours**
 - **Denmark: ADSL (2 Mbit/s) – 4.5 hours**
 - **USA: Cable modem (1.5 Mbit/s) – 6 hours**
 - **CH: ADSL (0.756 Mbit/s) – 12 hours**
 - **Dial-up (0.056 Mbit/s) – 7.5 days**



Broadband prices

Broadband subscription charges, July 2003, US\$



Overall subscription charges are important

Cost of 100 kbit/s as % of monthly income



But factoring in the speed of the connection and income is the more telling story



Asian competition

“Broadband in Korea and Japan is the world’s fastest as well as the world’s least expensive”

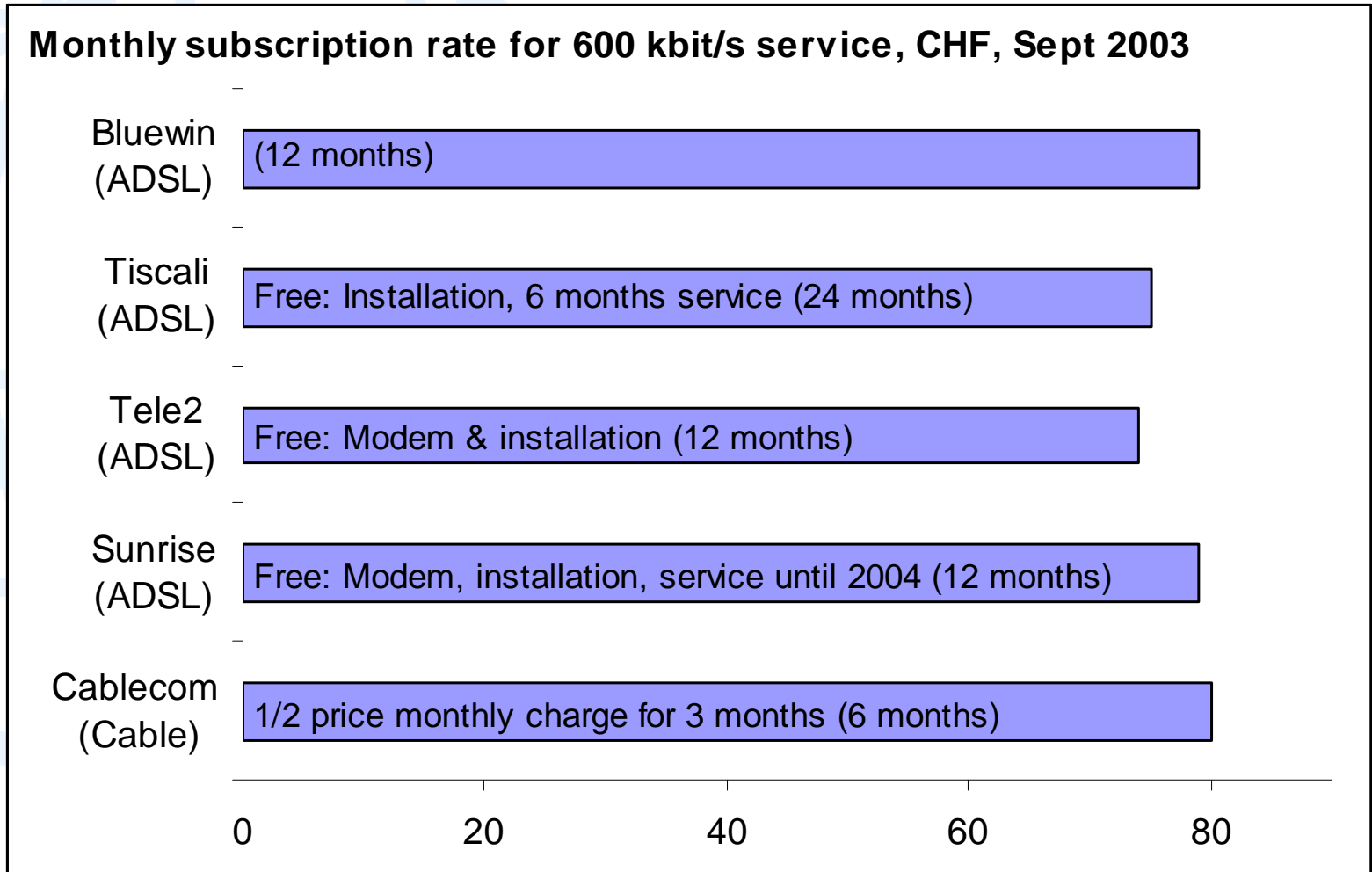
● Korea

- **Competitive ADSL provider (Hanaro) provides *true* facilities-based competition to the incumbent (KT). Cable and wireless providers also have a strong presence and wide coverage in the market.**
- **Same-day ADSL hookup**

● Japan

- **Lowest loop access charges in the world**
 - Copper phone networks (US\$ 1.40)
 - Fibre to the home (US\$ 43.33)
- **47 ADSL providers in June 2002**

Switzerland: Competition, but not on monthly price or speed



Source: ITU Research, length of required contract given in parenthesis



Why some economies succeed with broadband

- **Competition**
 - **There is no substitute for true market competition to expand networks and lower prices**
- **Government involvement**
 - **Economies where the government is actively involved in broadband promotion have higher penetration rates**
- **Integration of broadband applications in society**
 - **Korea has 25,000 cybercafés (open 24 hours) despite having the highest home broadband penetration in the world**



European challenges & opportunities

- **ISDN**
 - **Operators have been and are still unwilling to actively push lucrative ISDN customers to ADSL**
- **Lack of effective competition in the market**
 - **Weak inter-modal or same-service competition. Competitive players often too weak to compete with the incumbent**
- **Cross ownership issues**
 - **Forced divestitures have spurred growth**
- **Government policies**
 - **EU and national policies are making broadband a priority**
- **Consumer awareness**
 - **Europeans are becoming more aware of broadband's benefits through increased marketing and awareness programs**



Thank you

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