

**INTUG**

**Broadband Summit, DC 20 iv 2004**

**[www.INTUG.net](http://www.INTUG.net)**

# **broadband**

**a global user perspective**

**Ewan Sutherland**

Executive Director

**International Telecommunications  
Users Group**

[ewan@intug.net](mailto:ewan@intug.net)

# INTUG contents

Broadband Summit, DC 20 iv 2004

[www.INTUG.net](http://www.INTUG.net)

- about INTUG
- benchmarking broadband
- Republic of Korea
- Japan, China and India
- European Union
- conclusions

# INTUG what is INTUG?

Broadband Summit, DC 20 iv 2004

[www.INTUG.net](http://www.INTUG.net)

- members
  - national associations
  - corporations
  - individuals
- activities
  - ITU and WTO
  - OECD
  - APEC TEL, CITELE and the European Union

# INTUG our aims

Broadband Summit, DC 20 iv 2004

[www.INTUG.net](http://www.INTUG.net)

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

# INTUG priorities

1. open access to global mobile networks
2. regulatory best practice
3. liberalization
4. universal access
- 5. broadband**
6. leased lines
7. IP telephony
8. numbering

# INTUG broadband priorities

Broadband Summit, DC 20 iv 2004

[www.INTUG.net](http://www.INTUG.net)

- access to incumbent operator networks
  - advocacy of local loop unbundling
  - support for wholesale broadband products
- infrastructure competition
  - separation of the ownership of potentially competitive networks, such as cable television and the PSTN
  - ensuring that licensed and unlicensed spectrum is available for operators and users
- statistics
  - rapid reporting of numbers of lines and users
  - regular reporting and review of quality of service

# INTUG benchmarking

Broadband Summit, DC 20 iv 2004

[www.INTUG.net](http://www.INTUG.net)

- USA against the rest of the
  - G7 and OECD
  - European Union
  - Japan and Korea
  - China and India
- technologies and services:
  - teledensity and growth
  - prices and line speeds
  - advanced technologies
  - revenues

# INTUG universal service funds

Broadband Summit, DC 20 iv 2004

[www.INTUG.net](http://www.INTUG.net)

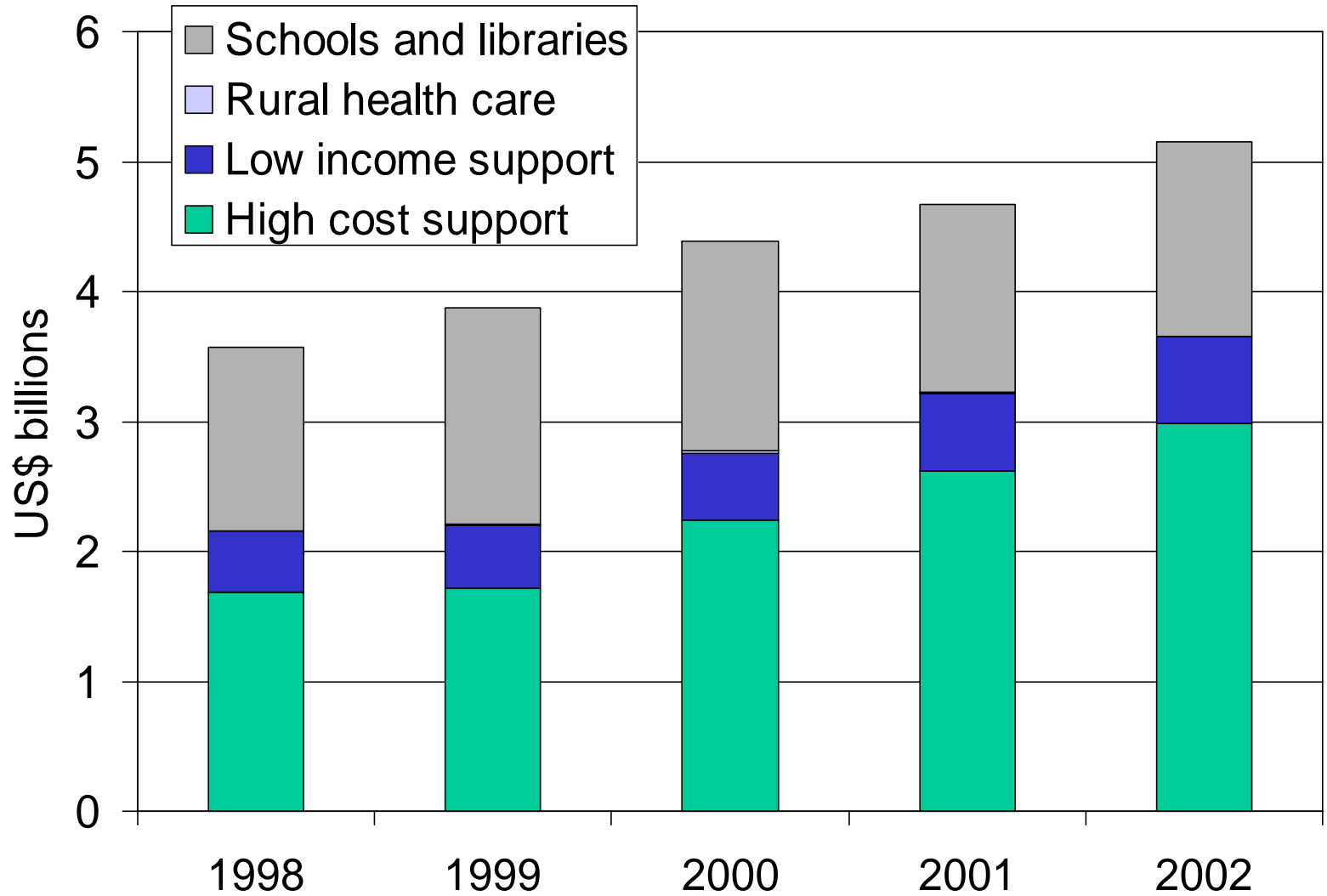
- the cost in the USA looks very high compared to other countries
- it could be distorting markets
- is the role of markets really being maximised?
- painful to change in the short term



# INTUG universal service costs

Broadband Summit, DC 20 iv 2004

[www.INTUG.net](http://www.INTUG.net)



# INTUG broadband

Broadband Summit, DC 20 iv 2004

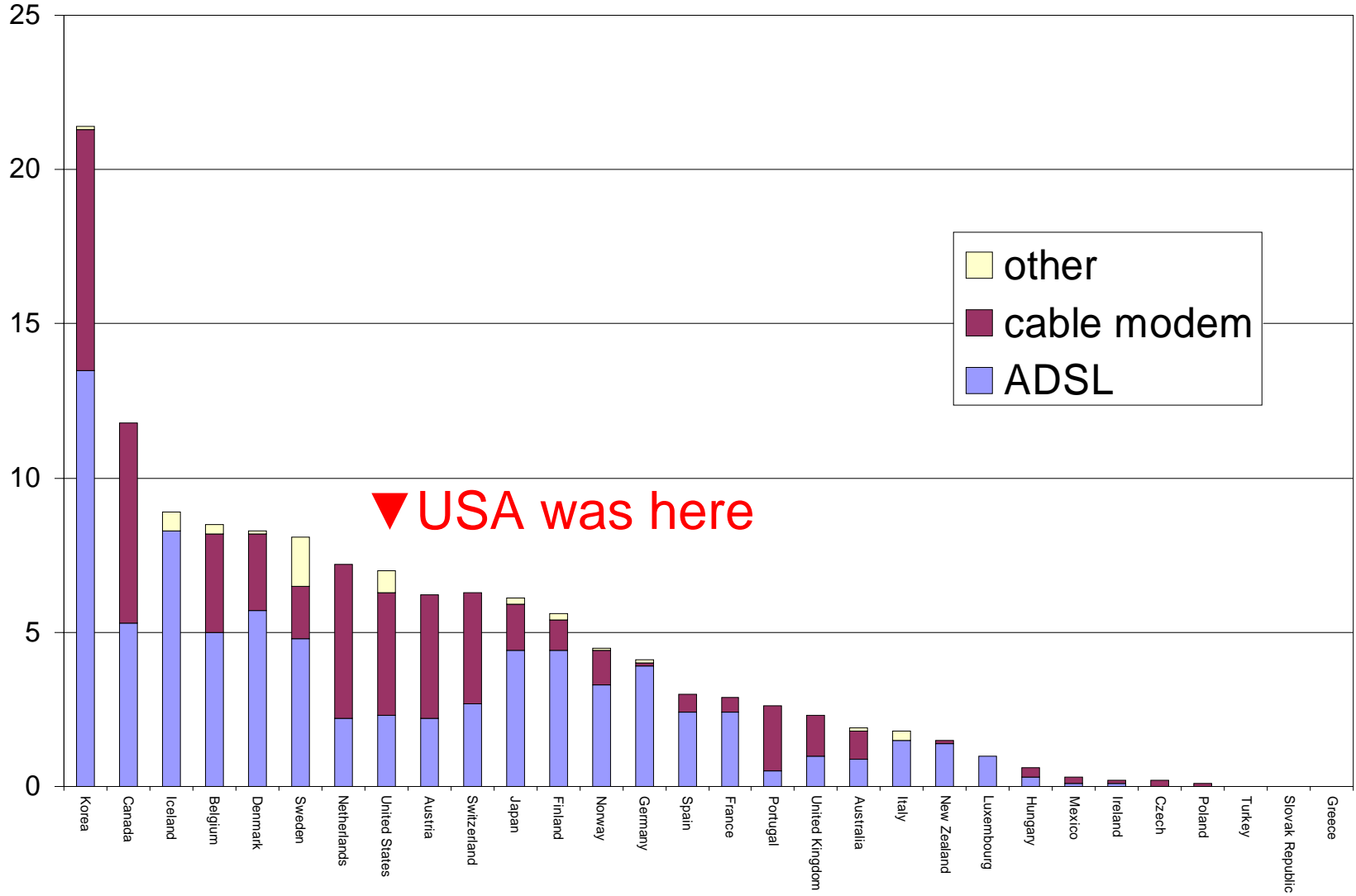
[www.INTUG.net](http://www.INTUG.net)

- OECD
- Korea
- Japan
- China
- India
- Europe

# INTUG OECD at end of 2002

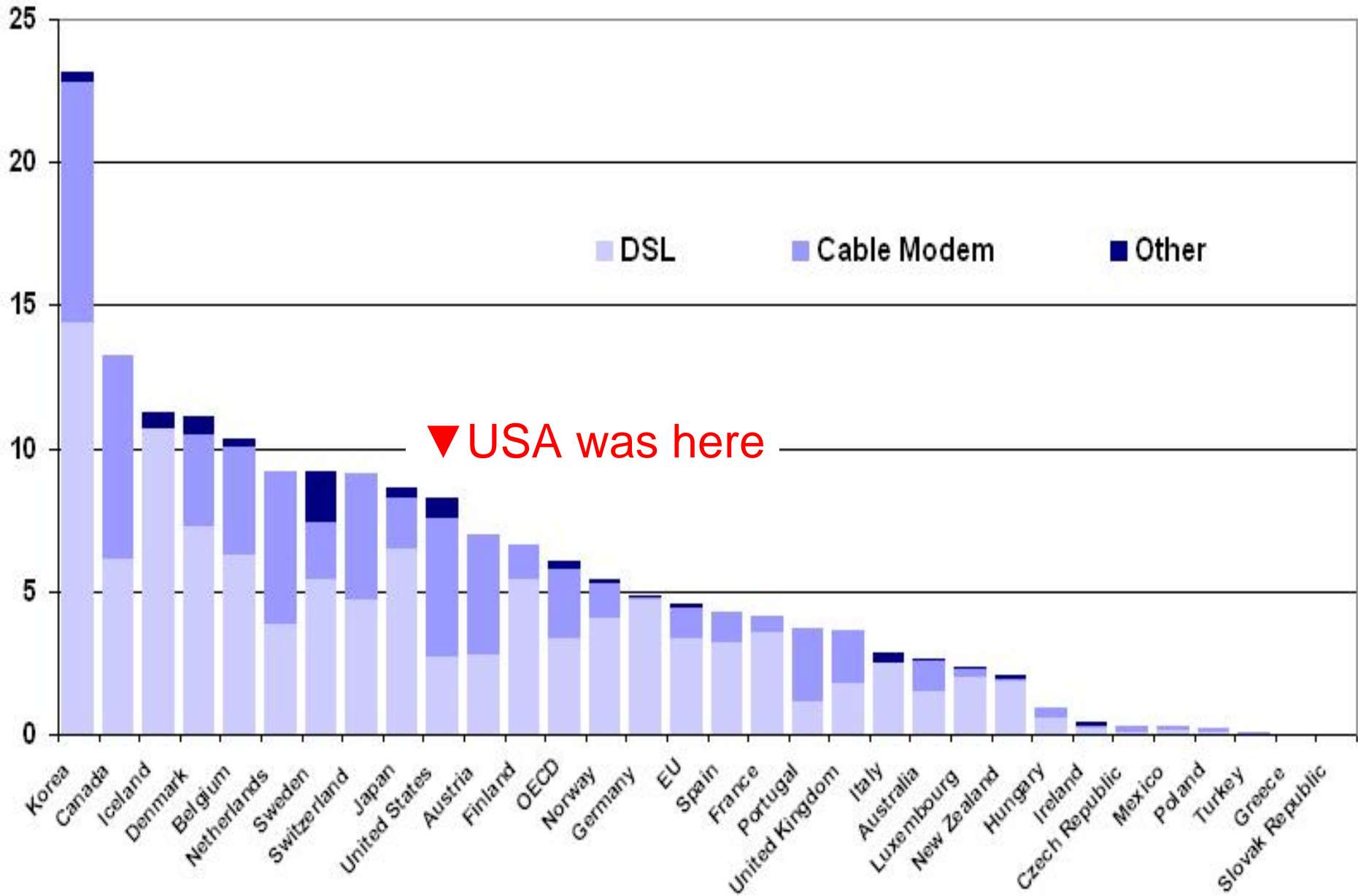
Broadband Summit, DC 20 iv 2004

[www.INTUG.net](http://www.INTUG.net)



# Broadband access in OECD countries per 100 inhabitants, June 2003

Source: OECD



# INTUG Republic of Korea

Broadband Summit, DC 20 iv 2004

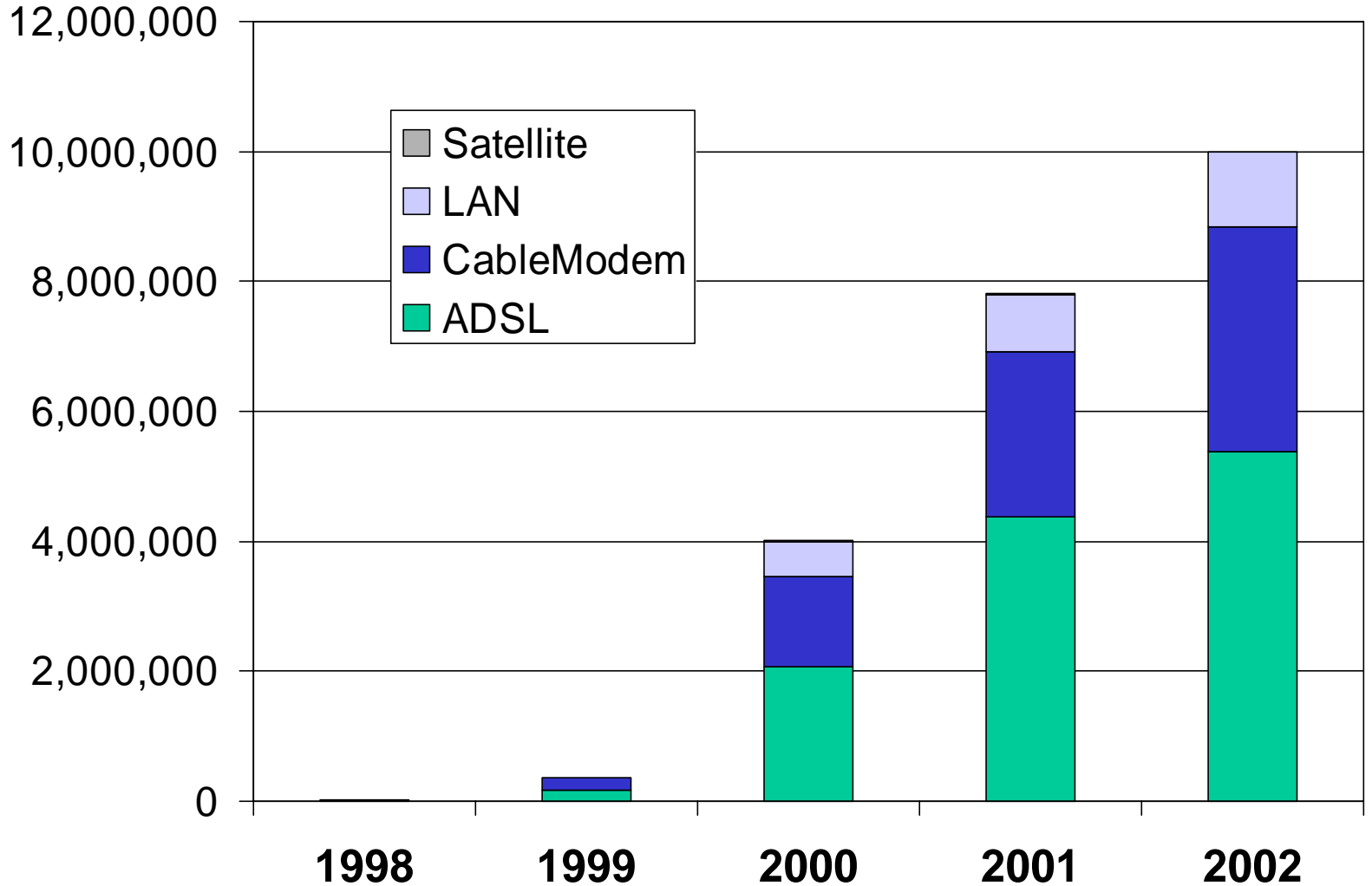
[www.INTUG.net](http://www.INTUG.net)

- economic growth since Korean War
- strength and depth in electronics
- cellphone exports in 2003 were US\$ 50Bn
- global broadband leader:
  - market saturated Q4 of 2002
  - 11M lines at 8Mbps at US\$ 25 per month
  - very high proportion of high-rise apartments
  - very high level of home PC ownership
  - plus 25,000 WLAN hot spots

# INTUG Korean broadband growth

Broadband Summit, DC 20 iv 2004

[www.INTUG.net](http://www.INTUG.net)



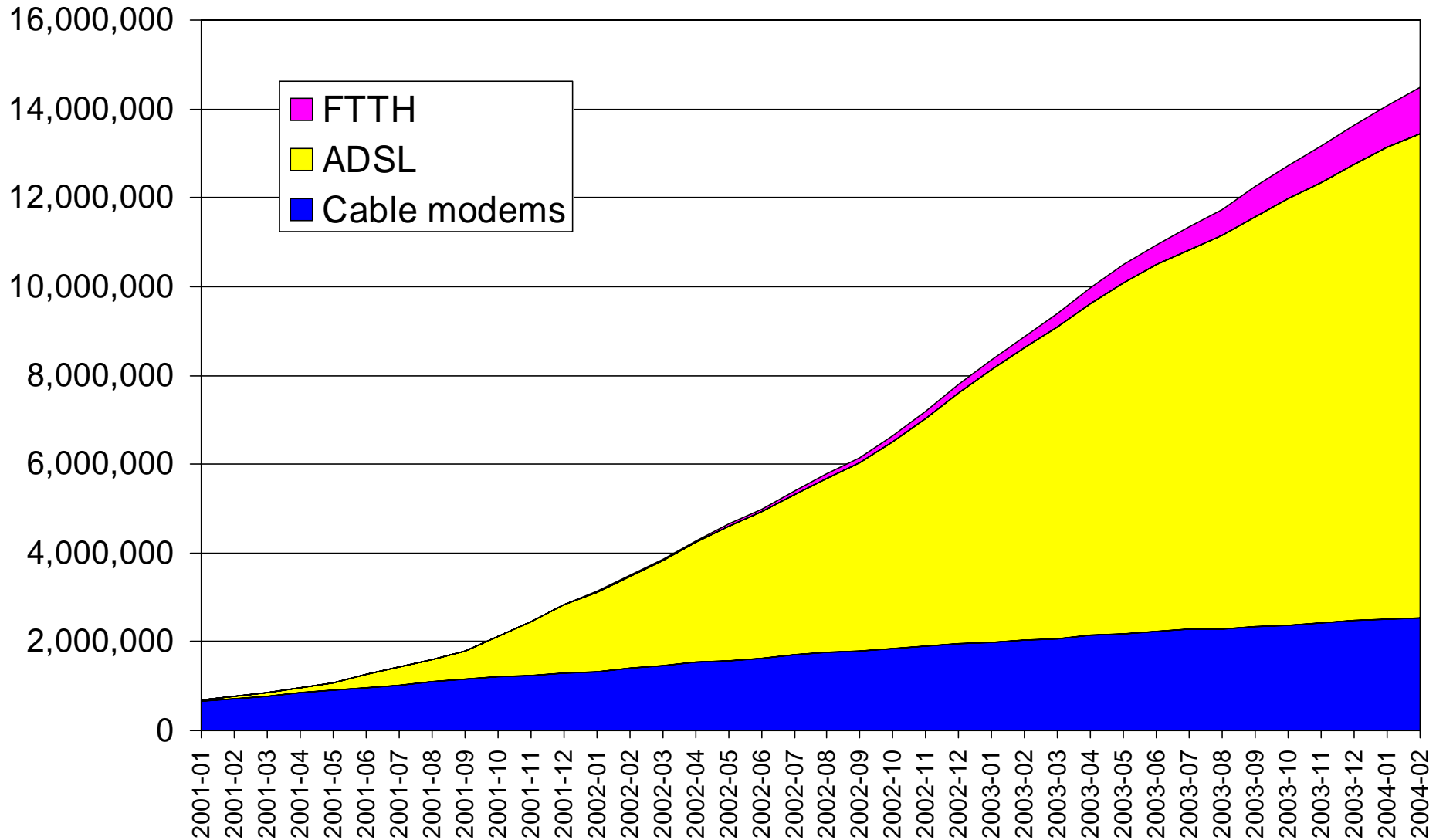
# INTUG Korea next generation

Broadband Summit, DC 20 iv 2004

[www.INTUG.net](http://www.INTUG.net)

- 3G deployed and fully operational
- ADSL migrating to VideoDSL (20+ Mbps)
  - KT Megapass  
1.4M VDSL lines at end of 2003 (of 5.5M)
  - Hanaro Hanafos (20M down, 6M up)  
0.2M VDSL lines at Feb 2004 (of 2.7M)
- broadband convergence networks
  - 2.3 GHz
  - 100Mbit/s
  - national coverage by 2008?

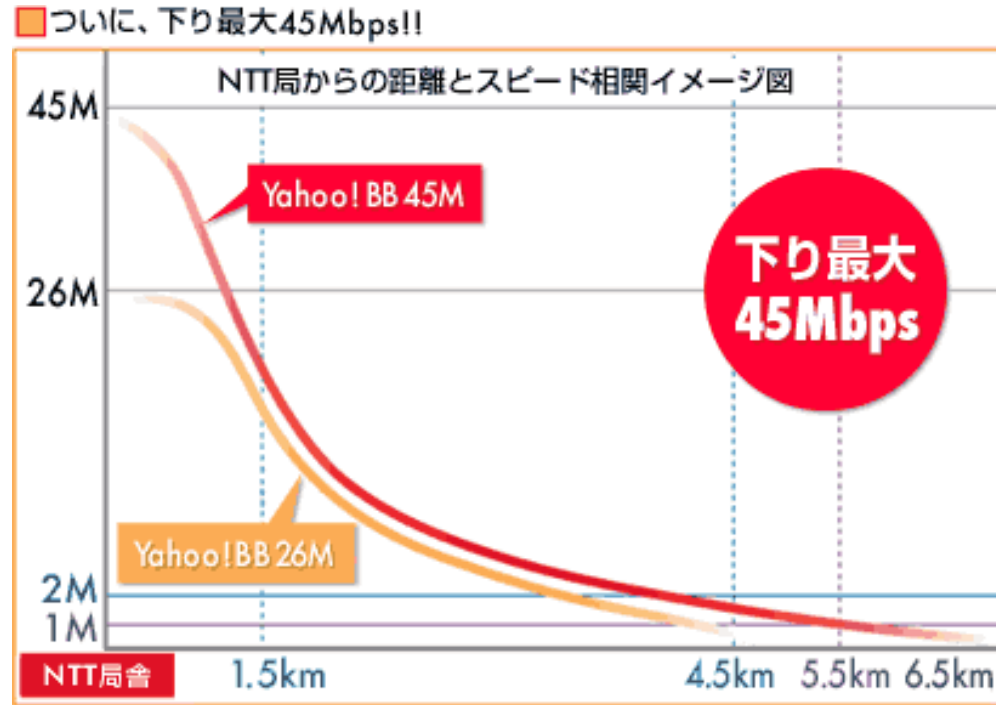
# INTUG Japanese broadband





# INTUG some monthly charges

- Yahoo! BB ADSL
  - 45Mbps ¥ 3,938
  - 26Mbps ¥ 3,838
  - 12Mbps ¥ 3,538
  - 8Mbps ¥ 3,138
- eAccess + InterQ
  - 40Mbps ¥ 3,880
  - 8 Mbps ¥ 3,680

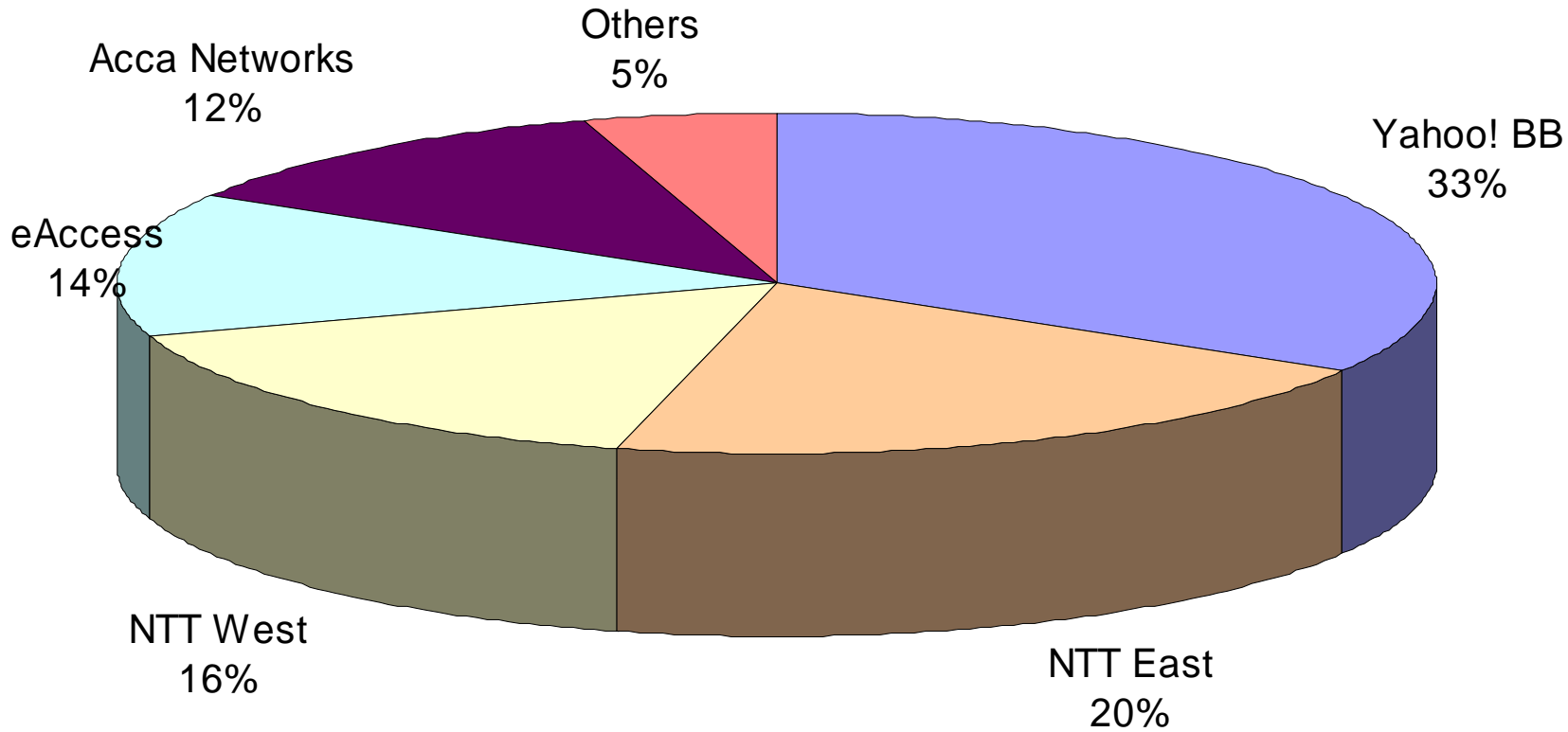


US\$ 1 = ¥105.2

# INTUG ADSL market shares

Broadband Summit, DC 20 iv 2004

[www.INTUG.net](http://www.INTUG.net)



# INTUG FTTx

Broadband Summit, DC 20 iv 2004

[www.INTUG.net](http://www.INTUG.net)

- fibre in incumbent backhaul network opened to competitors
- Fibre To The Home (FTTH)
- Fibre To The Building (FTTB)
- entry of TEPCO  
Tokyo Electric Power Company
  - 100Mbps
  - FTTH ¥6,480 per month

US\$ 1 = ¥105.2

# INTUG Japan

Broadband Summit, DC 20 iv 2004

[www.INTUG.net](http://www.INTUG.net)

- chasing Korea very hard
- economies of scale:
  - network operators
  - manufacturers
    - modems
    - broadband appliances
  - application and service providers
- finding out what innovative customers and service providers are doing
- creating an economic cluster

# INTUG China

Broadband Summit, DC 20 iv 2004

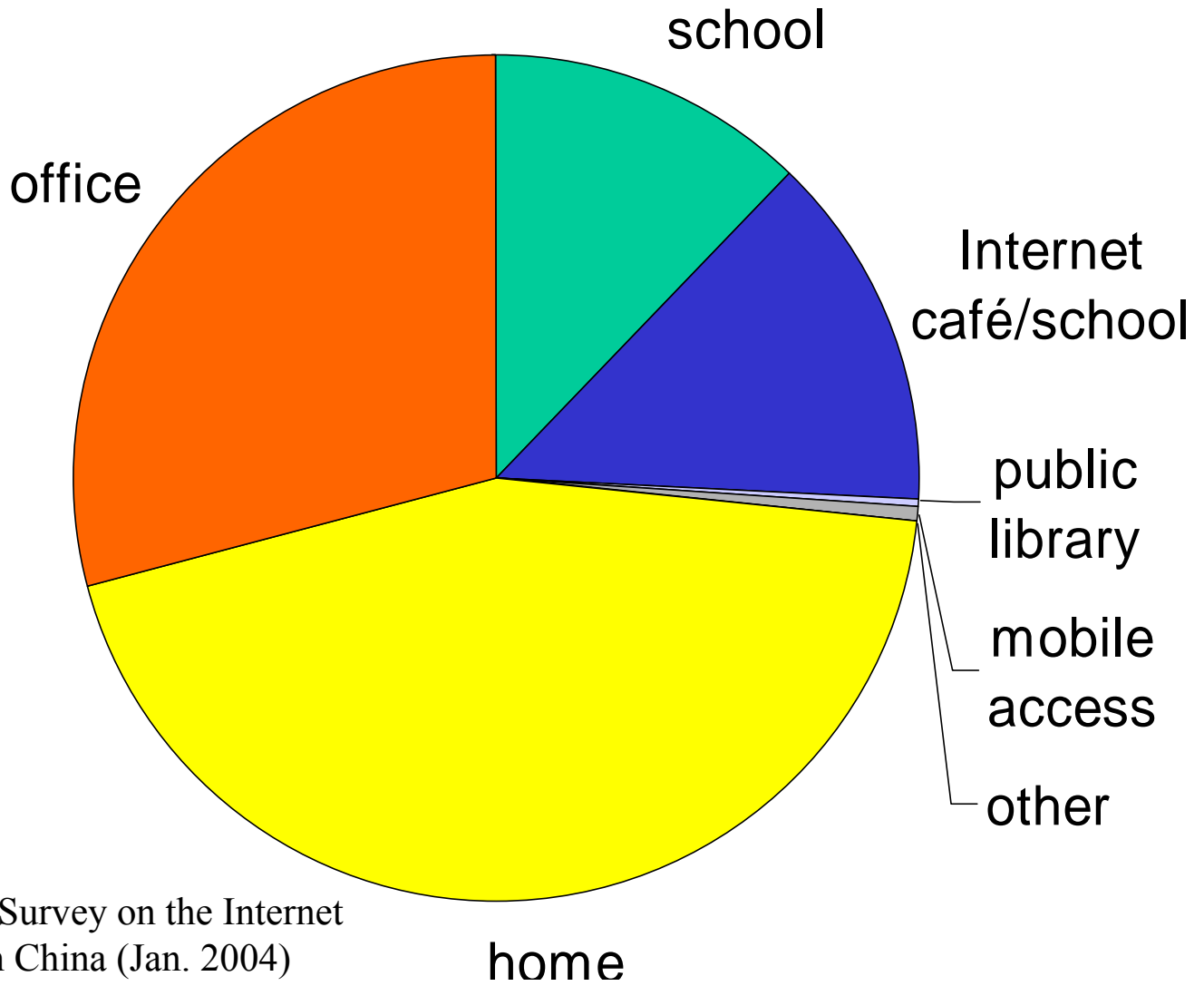
[www.INTUG.net](http://www.INTUG.net)

- very rapid growth
- huge economies of scale
- cheap domestically manufactured equipment
- using many different technologies
- multi-storey apartment blocks easily connected
- huge regional disparities

# INTUG China - place of access

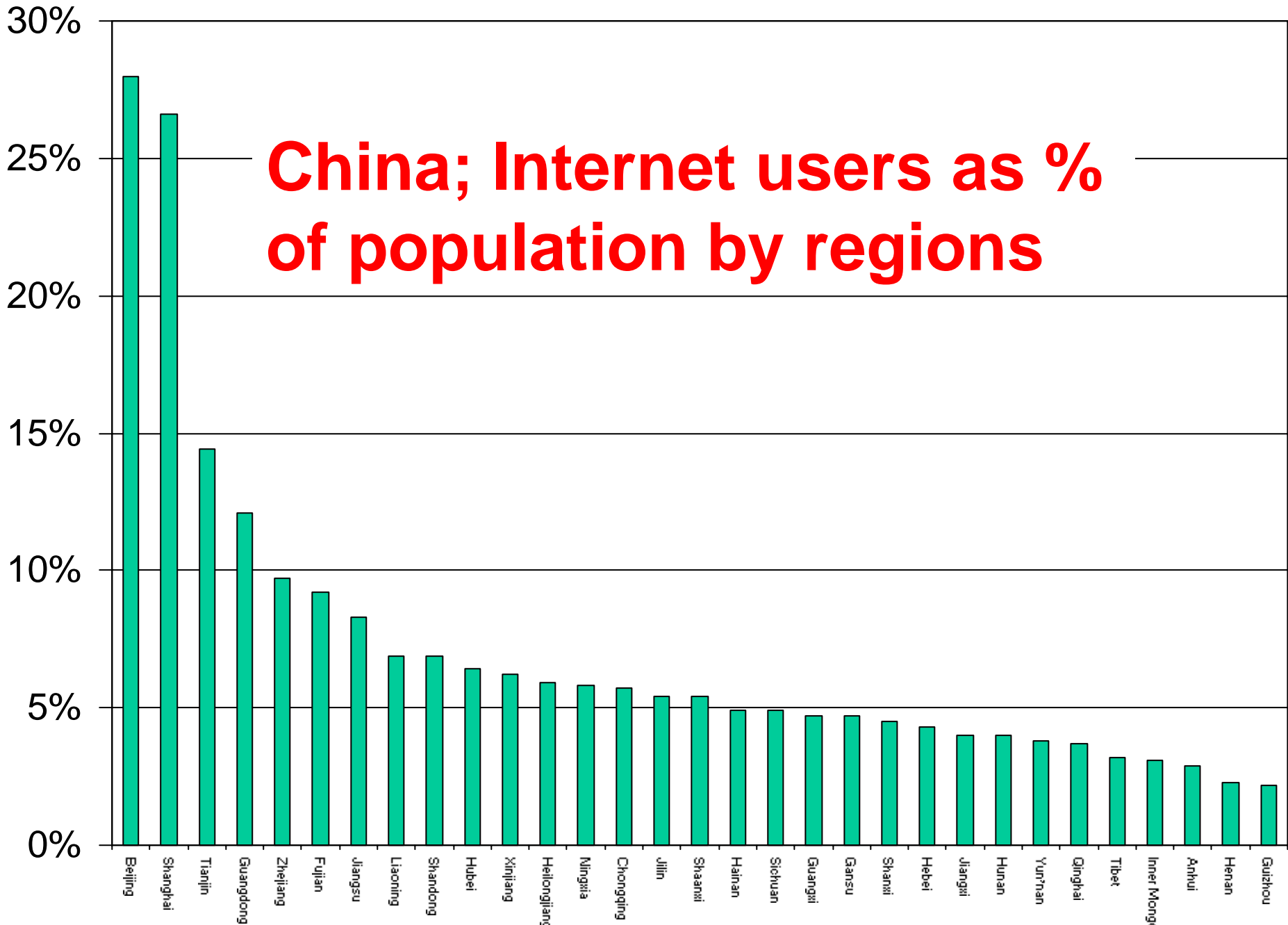
Broadband Summit, DC 20 iv 2004

[www.INTUG.net](http://www.INTUG.net)

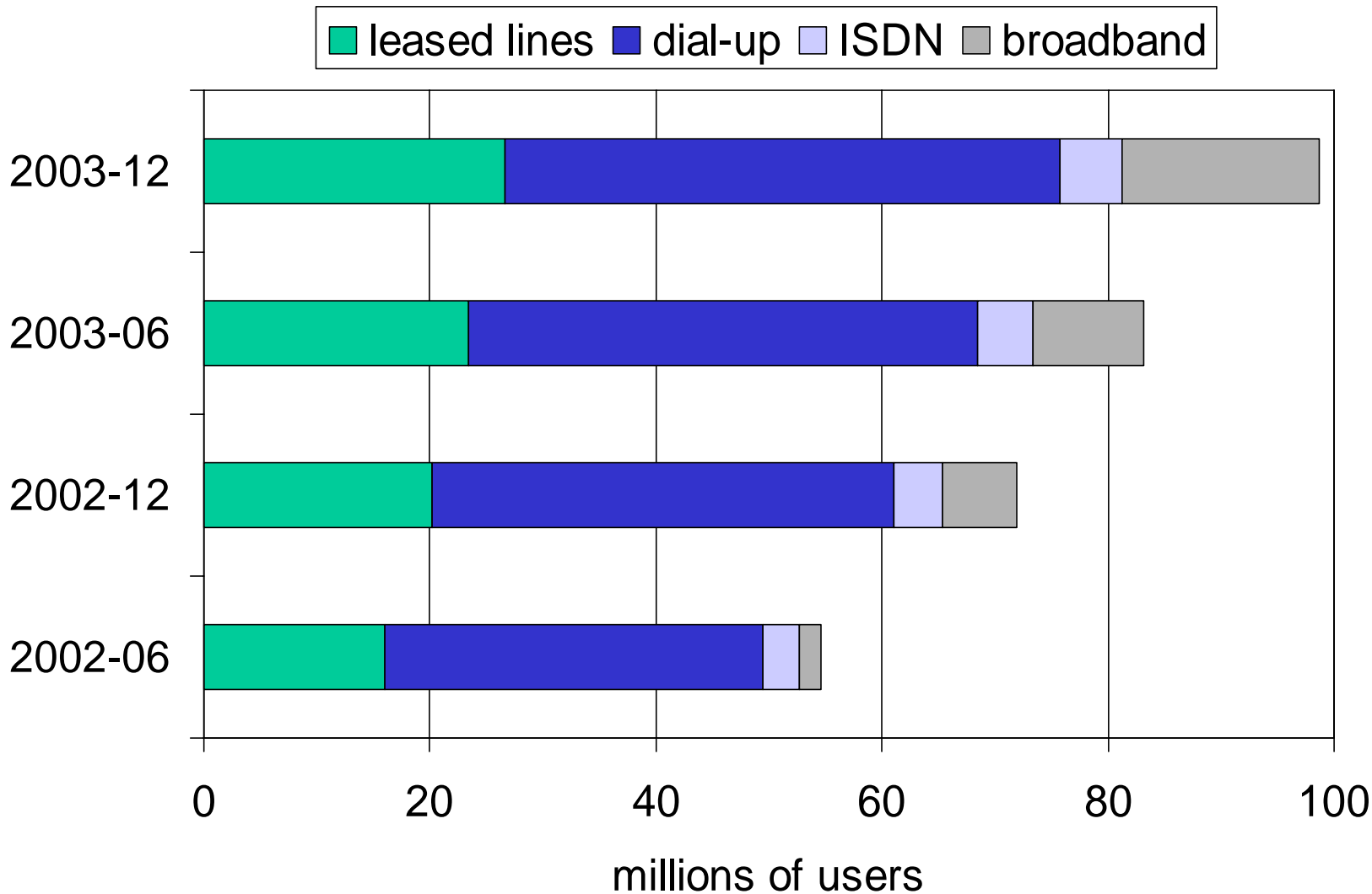


13th Statistical Survey on the Internet Development in China (Jan. 2004)

# China; Internet users as % of population by regions



13th Statistical Survey on the Internet Development in China (Jan. 2004)



10th to 13th Statistical Survey on the Internet Development in China (Jan. 2004)



# INTUG china broadband

Broadband Summit, DC 20 iv 2004

[www.INTUG.net](http://www.INTUG.net)

- 11 million ADSL lines at end of 2003:
  - 7.4M China Telecom Group
  - 3.5M China Netcom
  - 0.3M China Railcom
- will add:
  - 11 million in 2004
  - 15-20 million in 2005
- launching FWA on 3.5GHz
- still adding a lot of dial-up users

# INTUG India

Broadband Summit, DC 20 iv 2004

[www.INTUG.net](http://www.INTUG.net)

- rivalry with China
- competition worked with cellphones (adding about 1.5M GSM per month)
- will be repeated in broadband
- ISPs authorised to build own last mile
- aiming at an initial 10 million lines
- likely to be second largest English language broadband market by 2005

# INTUG Indian prospects

Broadband Summit, DC 20 iv 2004

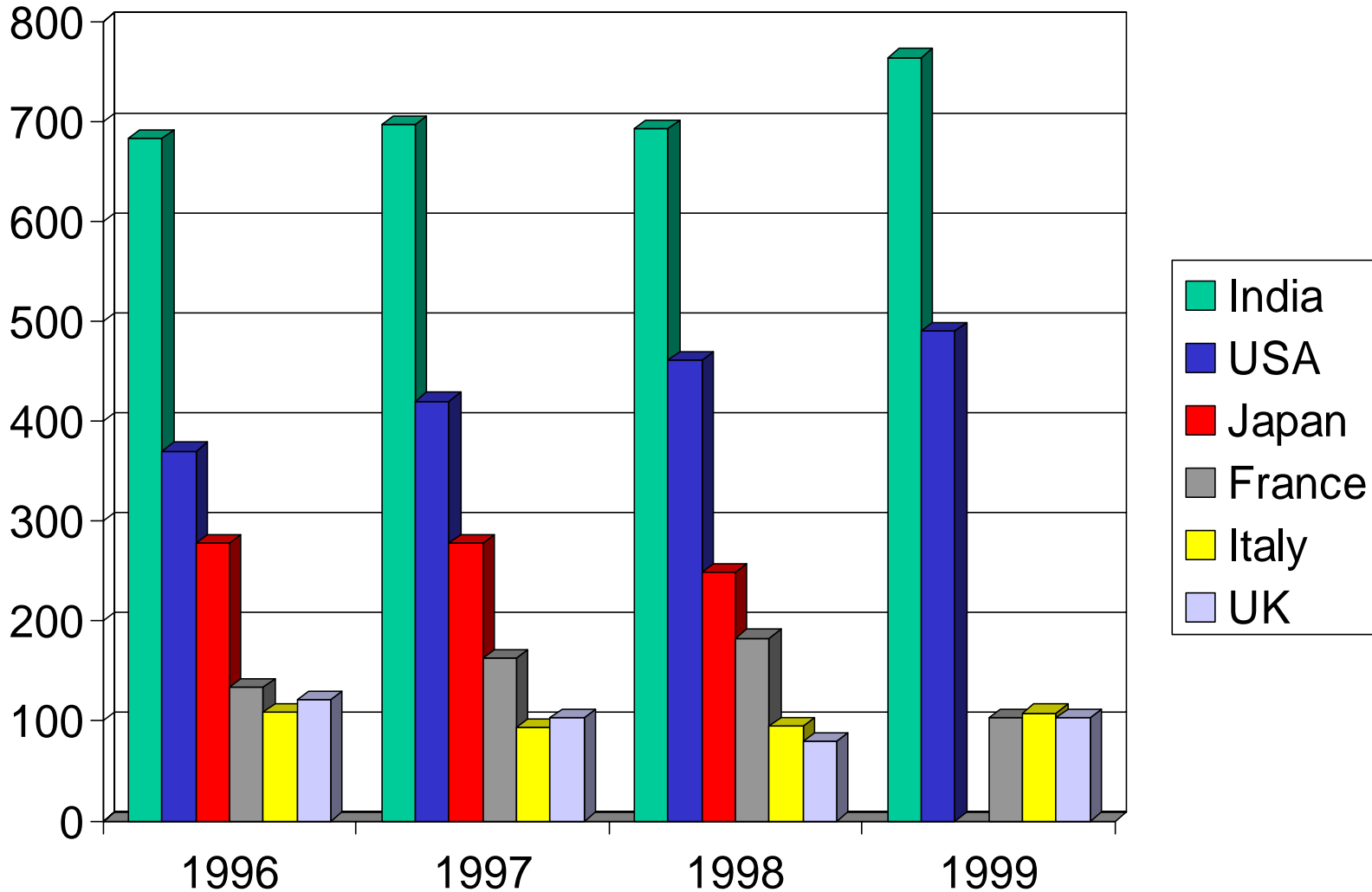
[www.INTUG.net](http://www.INTUG.net)

- fixed incumbent and mobile operators
- cable operators
- ISPs
- national backhaul:
  - incumbent operators
  - IPStar (satellite)
  - Tata Power (carriers' carrier)
- international cable capacity
  - FLAG, i2i and SEA-ME-WE 4
- truly massive content industry

# INTUG movie titles produced

Broadband Summit, DC 20 iv 2004

[www.INTUG.net](http://www.INTUG.net)

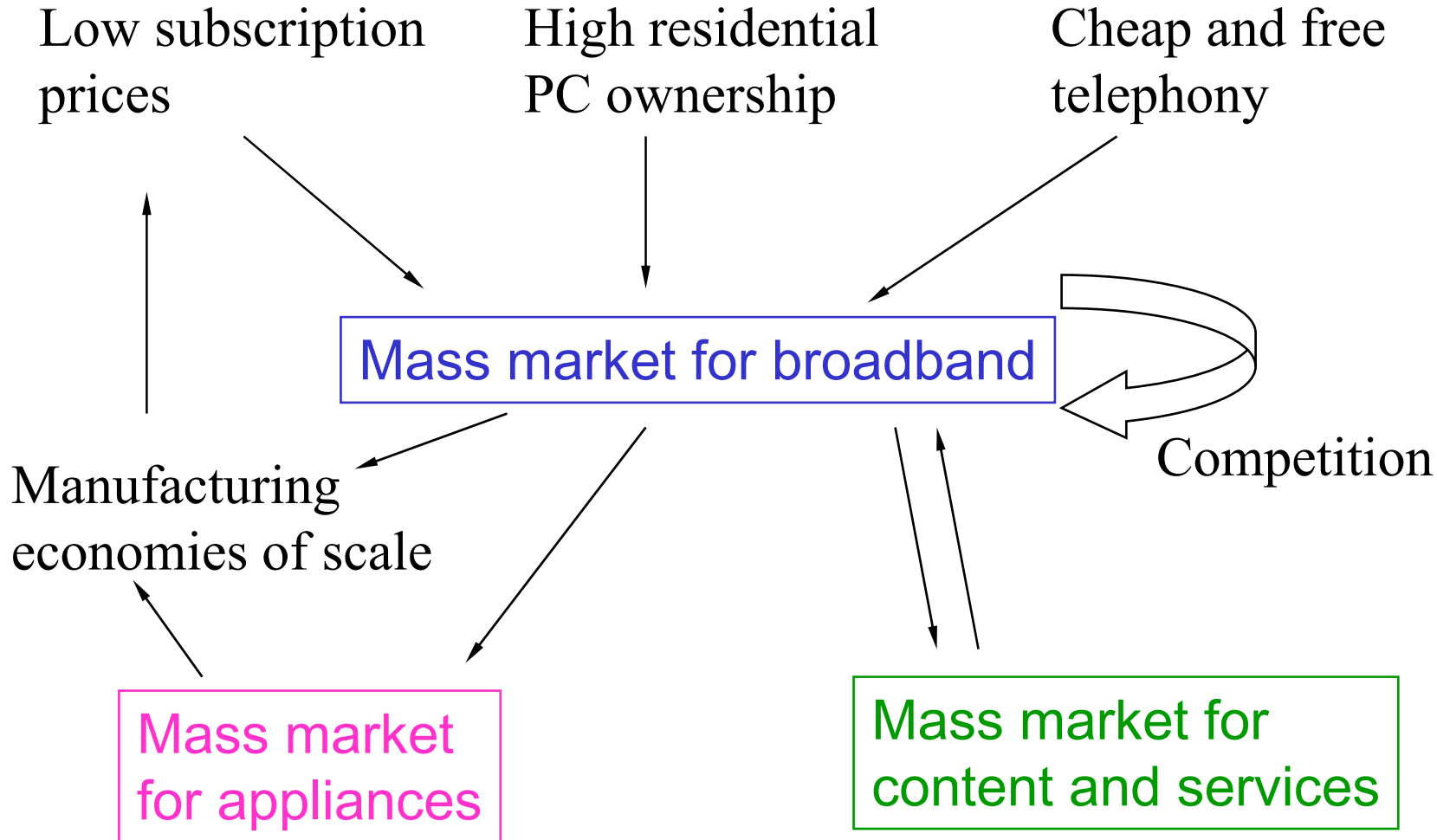


Source: UNESCO.

# INTUG drivers

Broadband Summit, DC 20 iv 2004

[www.INTUG.net](http://www.INTUG.net)

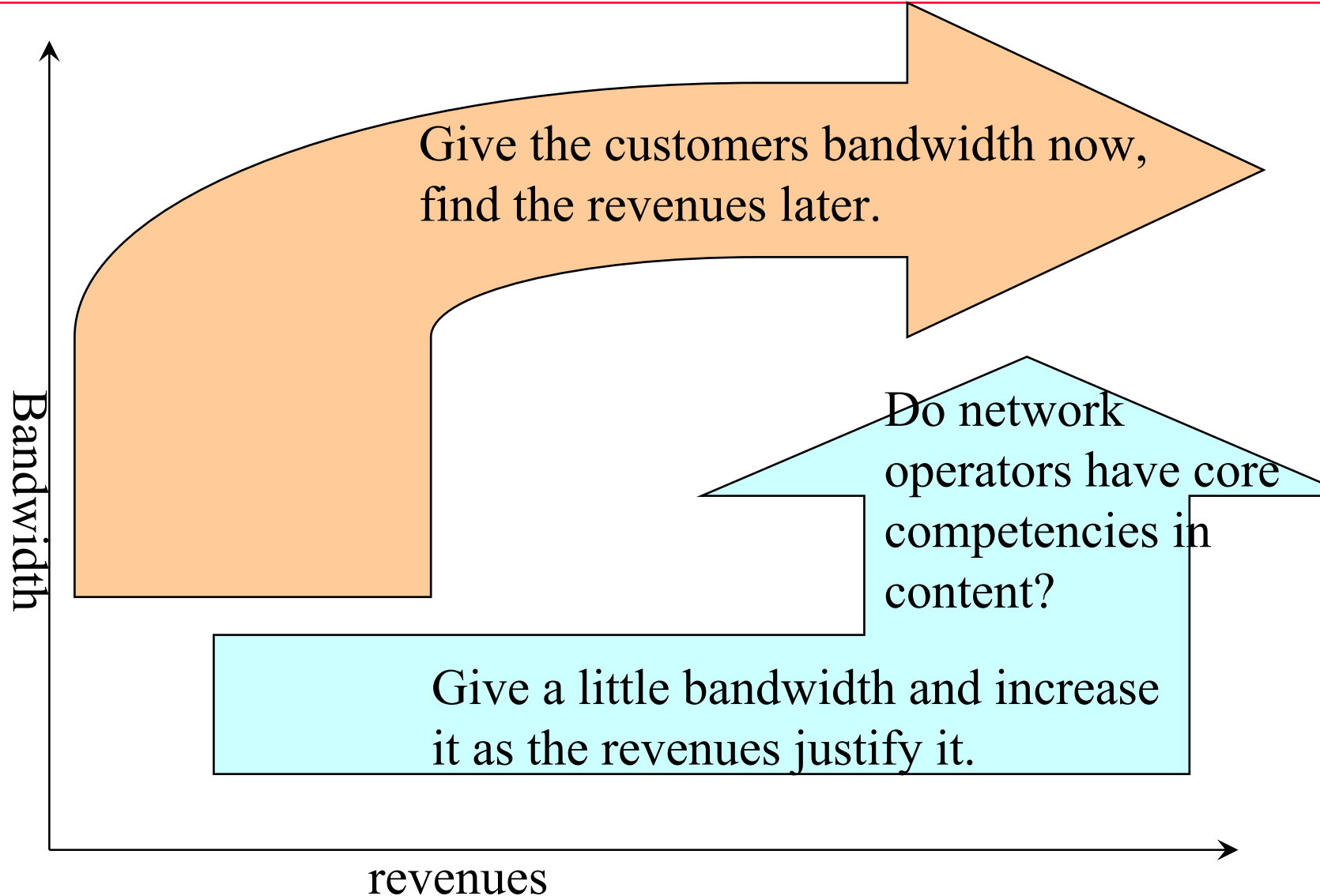


# which comes first bandwidth or revenues?

# INTUG

Broadband Summit, DC 20 iv 2004

[www.INTUG.net](http://www.INTUG.net)



# INTUG European Union

Broadband Summit, DC 20 iv 2004

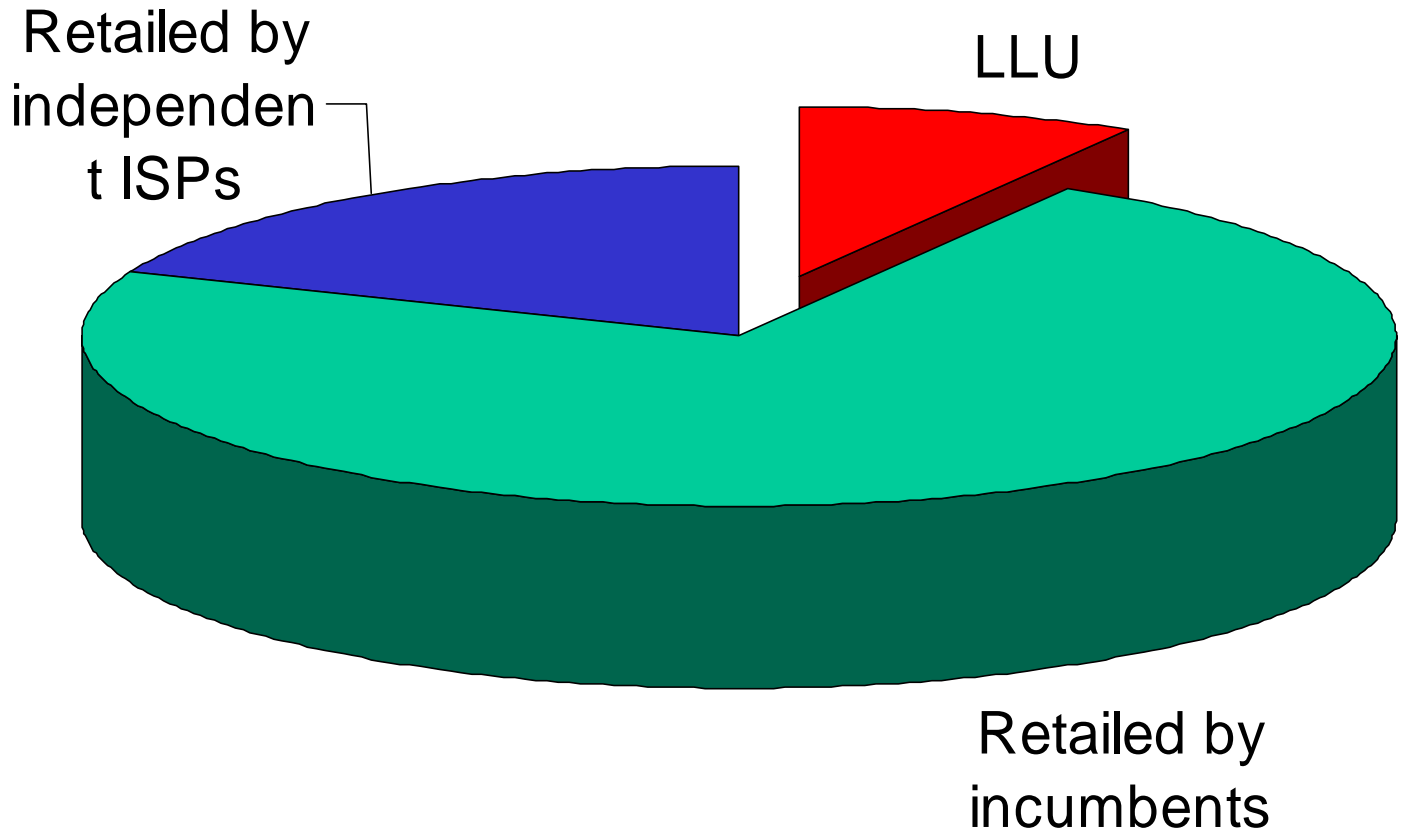
[www.INTUG.net](http://www.INTUG.net)

- goal is to be the most dynamic knowledge-based economy
- local loops unbundled in January 2002
- results mediated by performance of
  - (weak) national regulatory authorities
  - (strong) incumbent operators
- new regulatory framework slowly being put into place

# INTUG EU-15 ADSL

Broadband Summit, DC 20 iv 2004

[www.INTUG.net](http://www.INTUG.net)

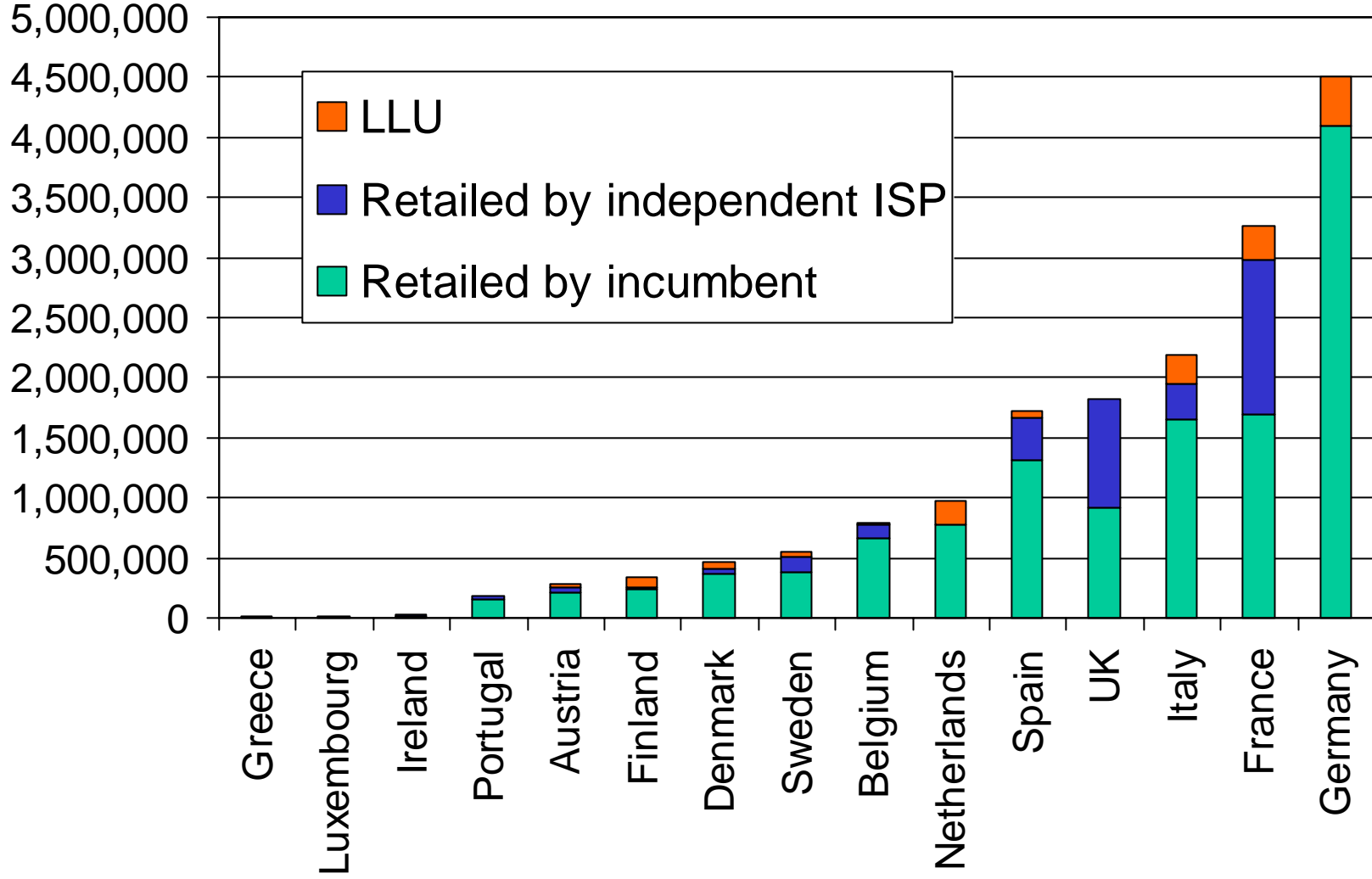




# INTUG EU15 - ADSL by country

Broadband Summit, DC 20 iv 2004

[www.INTUG.net](http://www.INTUG.net)



# INTUG European Union

Broadband Summit, DC 20 iv 2004

[www.INTUG.net](http://www.INTUG.net)

- some countries slow-starters or no-shows
- few countries have robust competition
- deeply divided national markets and regulation
- minimal cross-border market entry
- mostly “bonsai” broadband
  - 256k or 512k offers
  - EUR 15 to EUR 25 per month
- steep price gradient to higher speeds
- price competition rather than line speed competition

# INTUG the good boys

- Belgium
  - 3Mbits/s ADSL and 4Mbits/s cable modems
- Denmark
  - lots of “bonsai” broadband 256kbits/s
  - some interesting municipal initiatives
- Sweden
  - Bostream 26Mbits/s ADSL
  - Bredbandsverket 10 and 100Mbits/s
- Italy
  - Fastweb FTTB in some major cities

# INTUG towards 100Mbits/s

Broadband Summit, DC 20 iv 2004

[www.INTUG.net](http://www.INTUG.net)

- it will not be one specific technology
- it will not be one network
- Korea is already pushing ahead with Video-DSL 20-50Mbits/s (2M lines)
- Japan has 1M FTTH lines 100Mbits/s and growing at ~70,000 per month
- some high capacity radio technologies are being deployed

# INTUG Fibre To The Home

Broadband Summit, DC 20 iv 2004

[www.INTUG.net](http://www.INTUG.net)

- cannot consider this alone
  - interacts with ADSL and radio
  - tricky questions of fibre in the PSTN
- will it be competitive?:
  - not in rural areas
  - not if incumbent operators can help it
- opening for utility companies
- (how) do you regulate the access regime; “must carry” and “must have”

# INTUG OECD Council Recommendation

Broadband Summit, DC 20 iv 2004

[www.INTUG.net](http://www.INTUG.net)

- effective competition and continued liberalisation
- encourage investment
- technologically neutral policy and regulation
- primary role of the private sector
- a culture of security to enhance trust in the use of ICT
- both supply-based approaches to encourage infrastructure, content, and service provision and demand-based approaches, such as demand aggregation in sparsely populated areas, as a virtuous cycle to promote take-up and effective use of broadband services.
- promote access on fair terms and at competitive prices
- assess market-driven diffusion of broadband services to determine whether government initiatives are appropriate
- balance the interests of suppliers and users
- encourage research and development in the field of ICT

# INTUG conclusions

Broadband Summit, DC 20 iv 2004

[www.INTUG.net](http://www.INTUG.net)

leadership around East

China Sea:

- Korea (11M)
- China (11M + 11M)
- Japan (14M + 5M)

economic clusters:

- hardware
- applications
- services
- research

drivers:

- growth
- low prices
- content
- VoIP
- broadband appliances
- network effects

# INTUG looking ahead

Broadband Summit, DC 20 iv 2004

[www.INTUG.net](http://www.INTUG.net)

- target is **not** ADSL
- but the stage after!  
(and the one after that)
- certainly **not** 0.25 to 2Mbit/s
- ubiquitous networks
  - wireline and wireless
  - 50 to 100 Mbits/s (and more)
- revenue from content and services
- where are Africa and Latin America?



# INTUG thank you

Ewan Sutherland

International Telecommunications Users Group

Reyerslaan 80

B-1030 Brussels

Belgium

+32.2.706.8255

[ewan@intug.net](mailto:ewan@intug.net)

<http://www.intug.net/ewan.html>