INTUG

broadband

a global user perspective

Ewan Sutherland

Executive Director

International Telecommunications Users Group

ewan@intug.net

DoC, Johannesburg 1 vii 2004

www.INTUG.net

COMMUNICATIONS USERS ASSOCIATION OF SOUTH AFRICA

INTUG contents

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

CUASA
COMMUNICATIONS USERS
ASSOCIATION OF SOUTH AFRICA

INTUG what is INTUG?

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

CUASA
COMMUNICATIONS USERS
ASSOCIATION OF SOUTH AFRICA

INTUG our aims

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

CUASA
COMMUNICATIONS USERS
ASSOCIATION OF SOUTH AFRICA

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

COMMUNICATIONS USERS ASSOCIATION OF SOUTH AFRICA

INTUG broadband priorities

- 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

COMMUNICATIONS USERS ASSOCIATION OF SOUTH AFRICA

INTUG benchmarking

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

CUASA
COMMUNICATIONS USERS
ASSOCIATION OF SOUTH AFRICA

INTUG africa

- fixed network growth has been minimal
- GSM with pre-paid cards has driven growth,
  - but how could it migrate to broadband?
- traditionally long delays in adoption of new technologies and services
- high cost of International Internet Connectivity (IIC) because of:
  - lack of competition in international leased lines
  - incumbent operators overcharging or blocking access to submarine cables

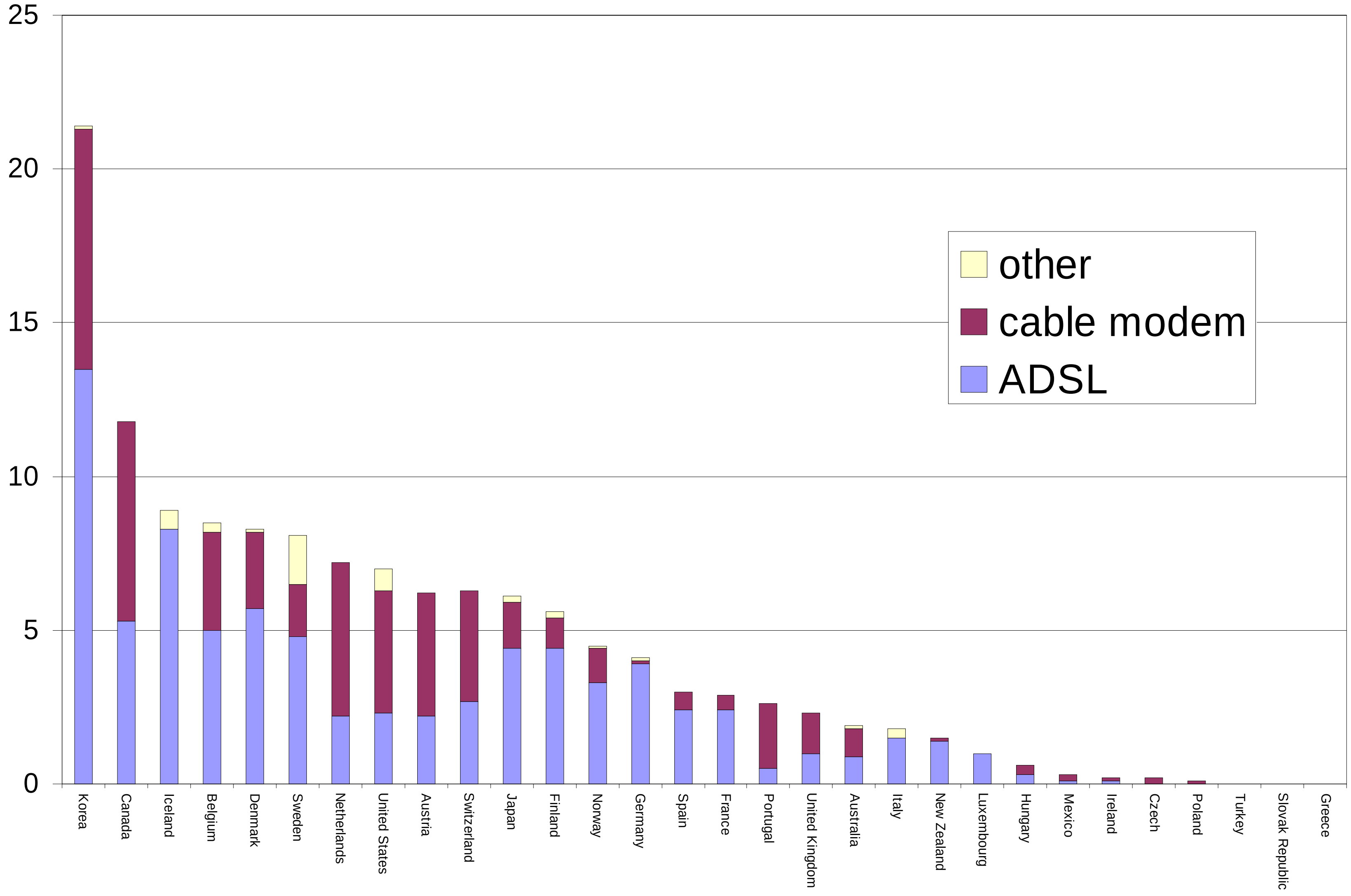
CUASA
COMMUNICATIONS USERS
ASSOCIATION OF SOUTH AFRICA

INTUG ADSL now available

- Morocco
  - Maroc Telecom and Wanadoo
- Algeria
  - Wanadoo & Asila (Telecom Algerie + Daewoo)
- Tunisia
  - TopNet ADSL and Tunet
- Egypt
  - Glory “Don't Slow Life” (DSL)
  - Mena ADSL and Internet Egypt ADSL
- Libya
- Senegal

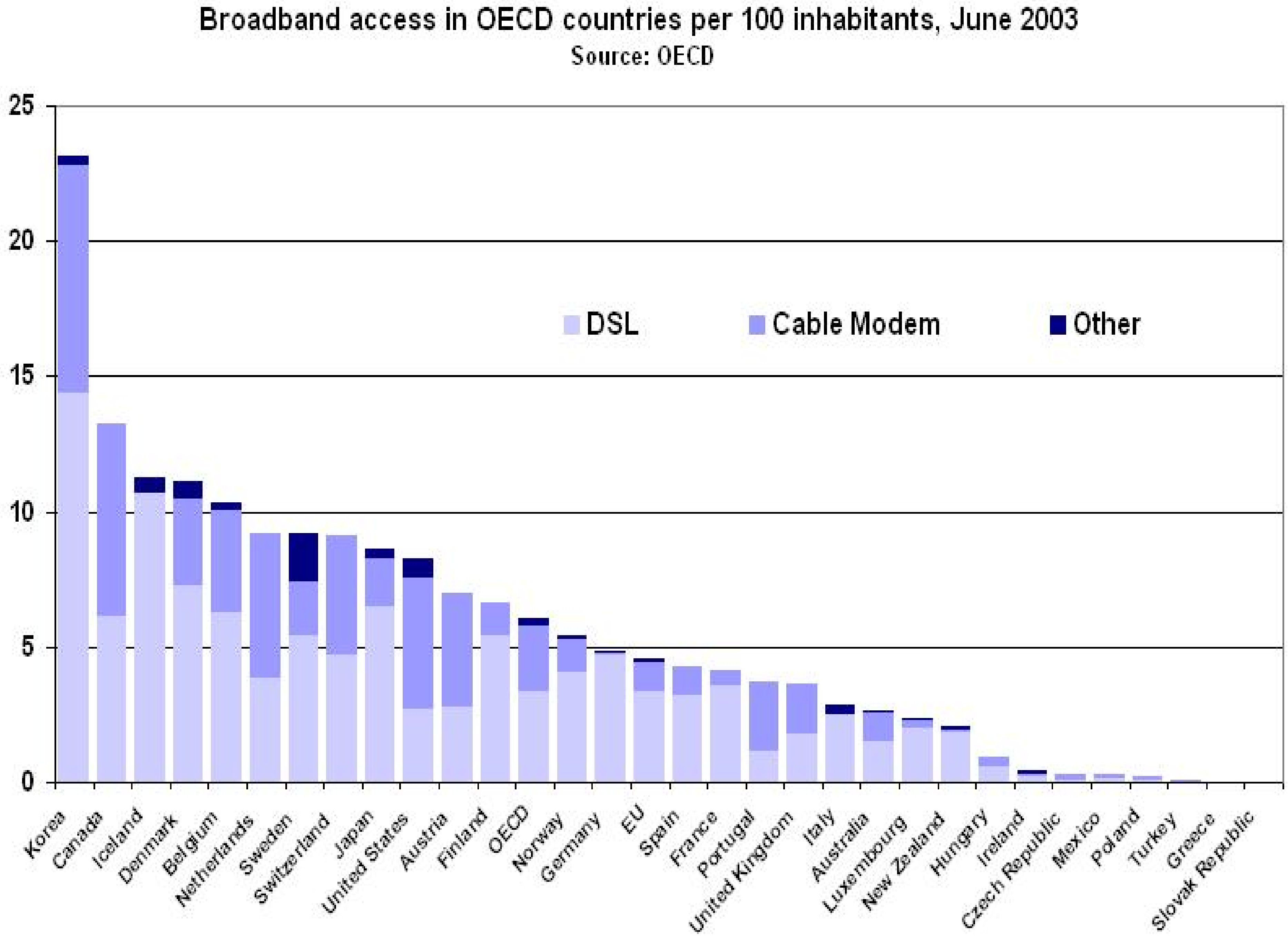
CUASA
COMMUNICATIONS USERS ASSOCIATION OF SOUTH AFRICA

INTUG OECD at end of 2002

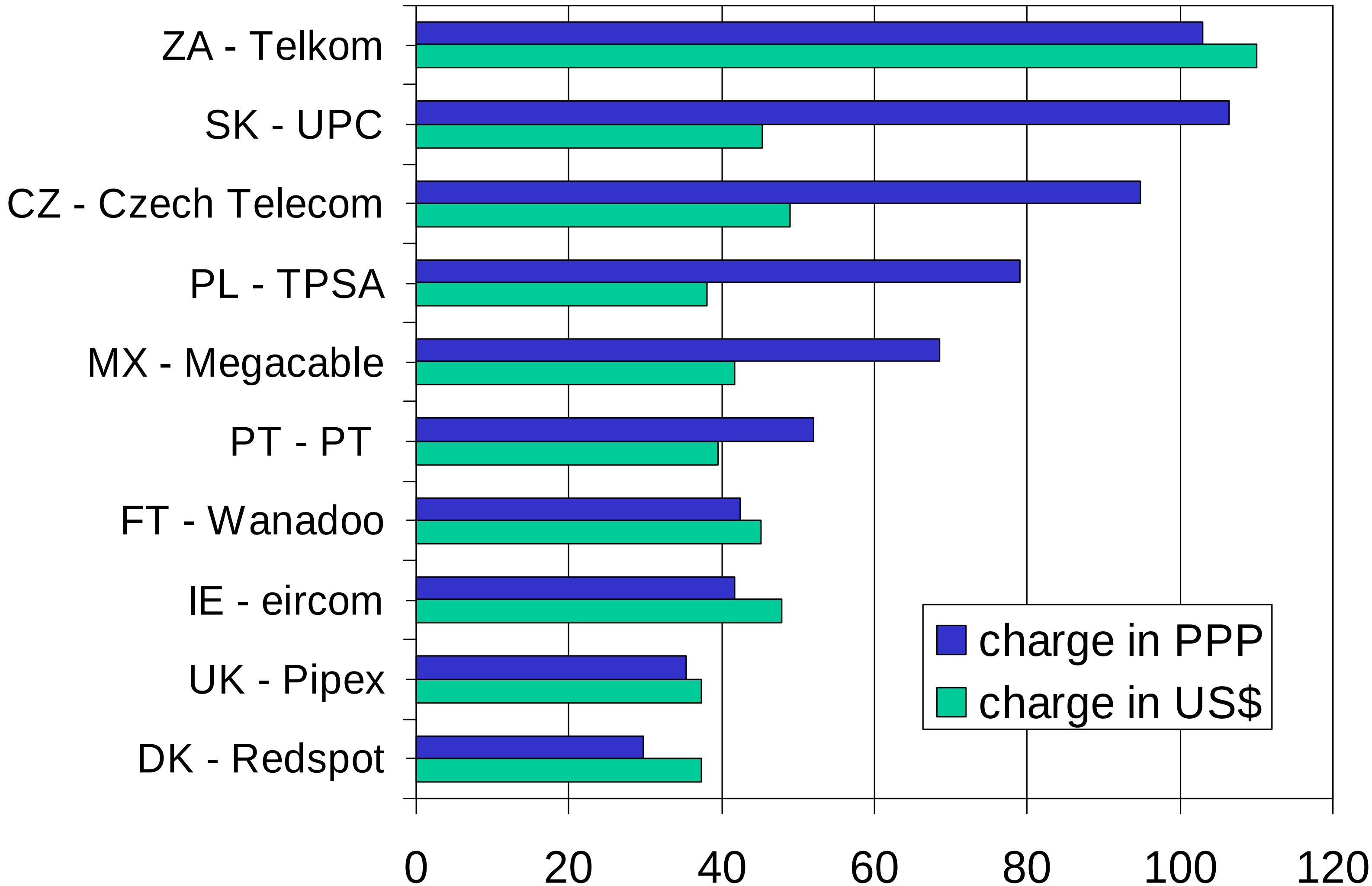


DoC, Johannesburg 1 vii 2004

www.INTUG.net


Broadband access in OECD countries per 100 inhabitants, June 2003
Source: OECD
25
20
15
10
5
0
DSL
Cable Modem
Other
Korea
Canada
Iceland
Denmark
Belgium
Netherlands
Sweden
Switzerland
Japan
United States
Austria
Finland
OECD
Norway
Germany
EU
Spain
France
Portugal
United Kingdom
Italy
Australia
Luxembourg
New Zealand
Hungary
Ireland
Czech Republic
Mexico
Poland
Turkey
Greece
Slovak Republic

INTUG 0.5Mbits/s charge per month



DoC, Johannesburg 1 vii 2004

www.INTUG.net

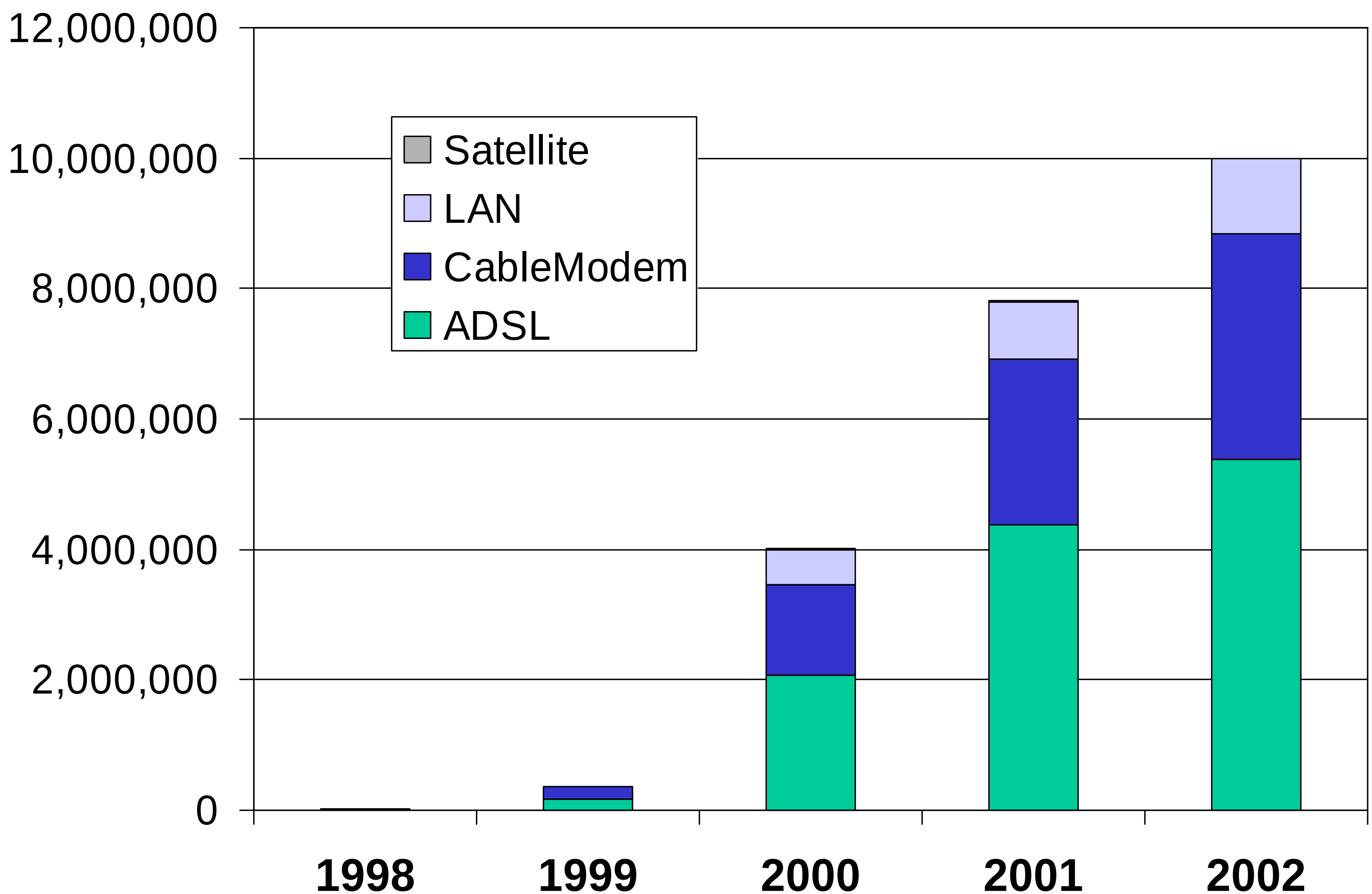
INTUG

Republic of Korea

- 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

CUASA
COMMUNICATIONS USERS ASSOCIATION OF SOUTH AFRICA

INTUG Korean broadband growth

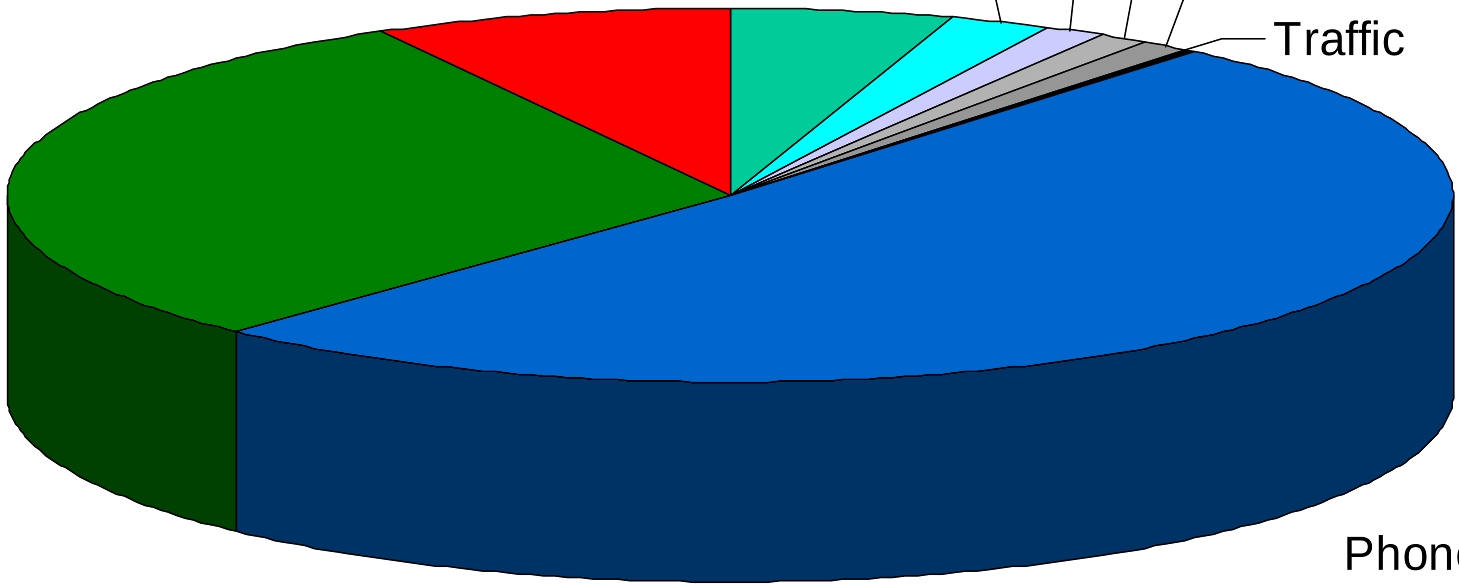


INTUG Korea next generation

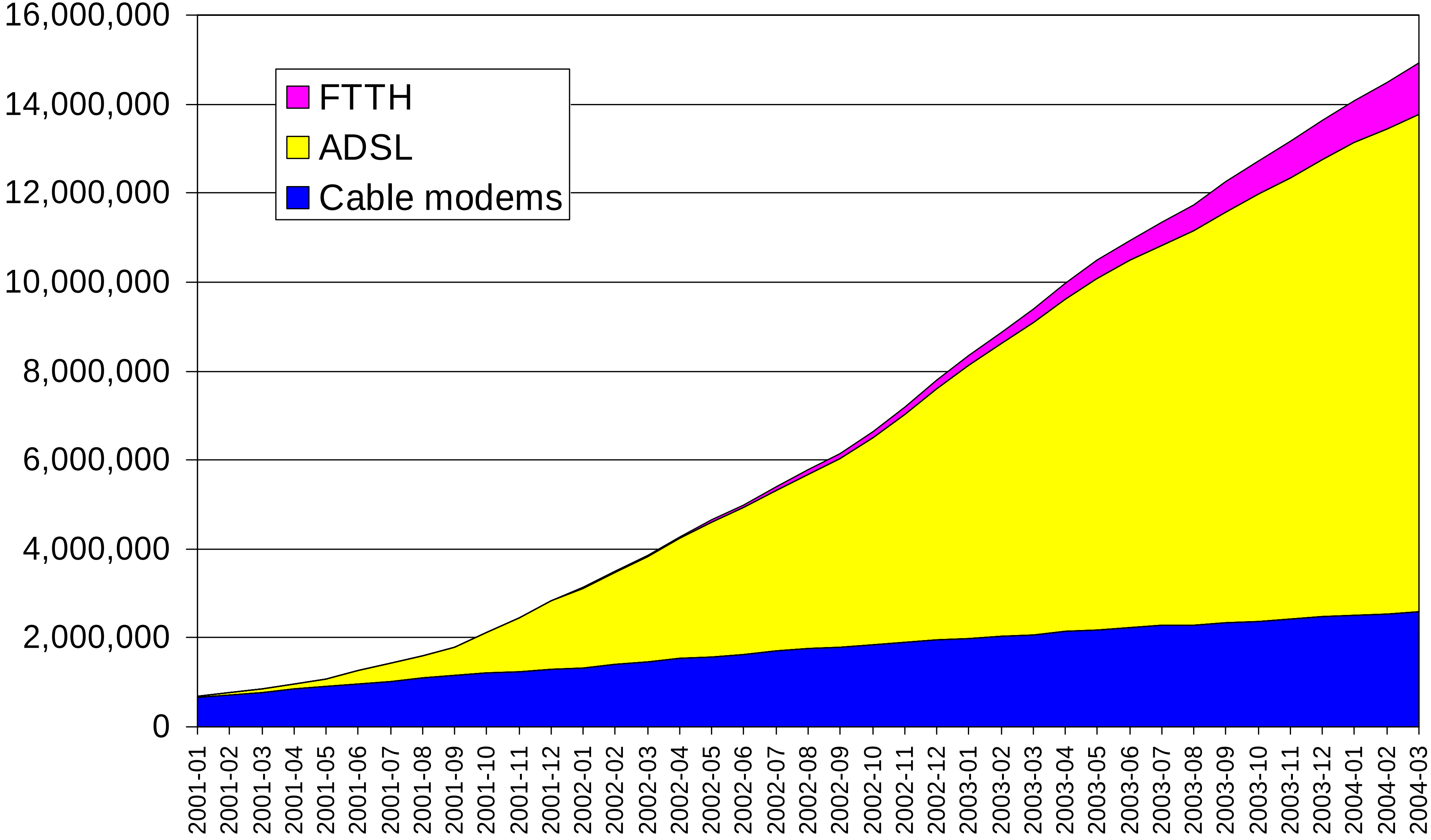
- 3G deployed and fully operational
- ADSL migrating to VideoDSL (20+ Mbps)
  - KT Megapass
    1.4M VDSL lines at end of 2003 (of 5.5M)
  - Hanaro Hanafos (20M down, 6M upstream)
    0.2M VDSL lines at Feb 2004 (of 2.7M)
- broadband convergence network:
  - radio on 2.3 GHz
  - 100Mbit/s
  - national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

CUASA
COMMUNICATIONS USERS
ASSOCIATION OF SOUTH AFRICA

INTUG SKTelecom "June" 3G hits

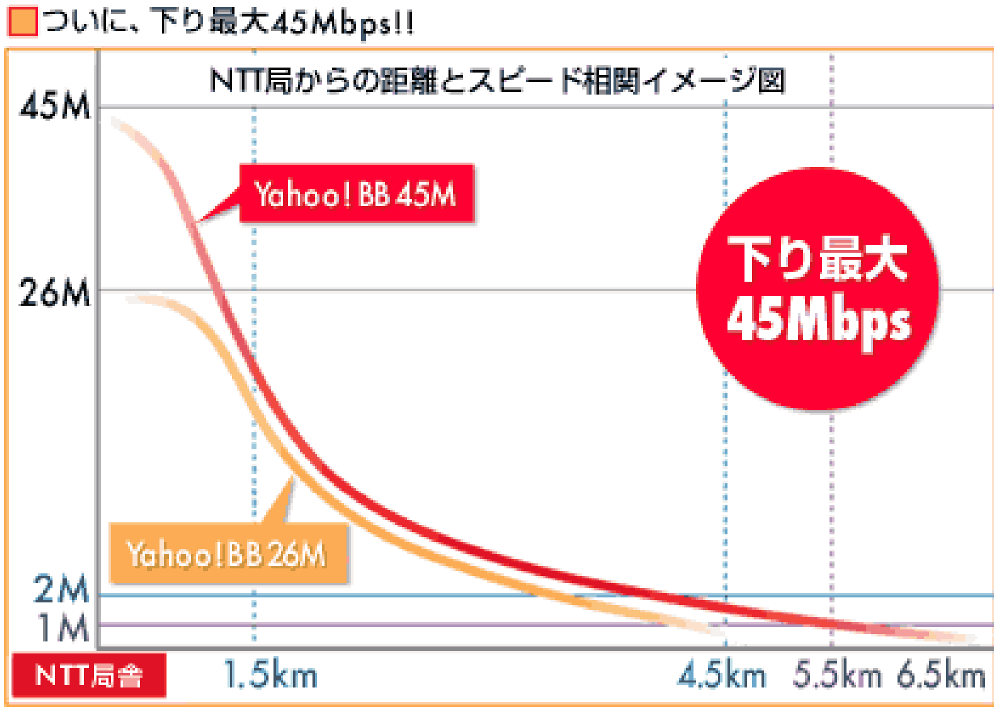


INTUG Japanese broadband



INTUG some monthly charges

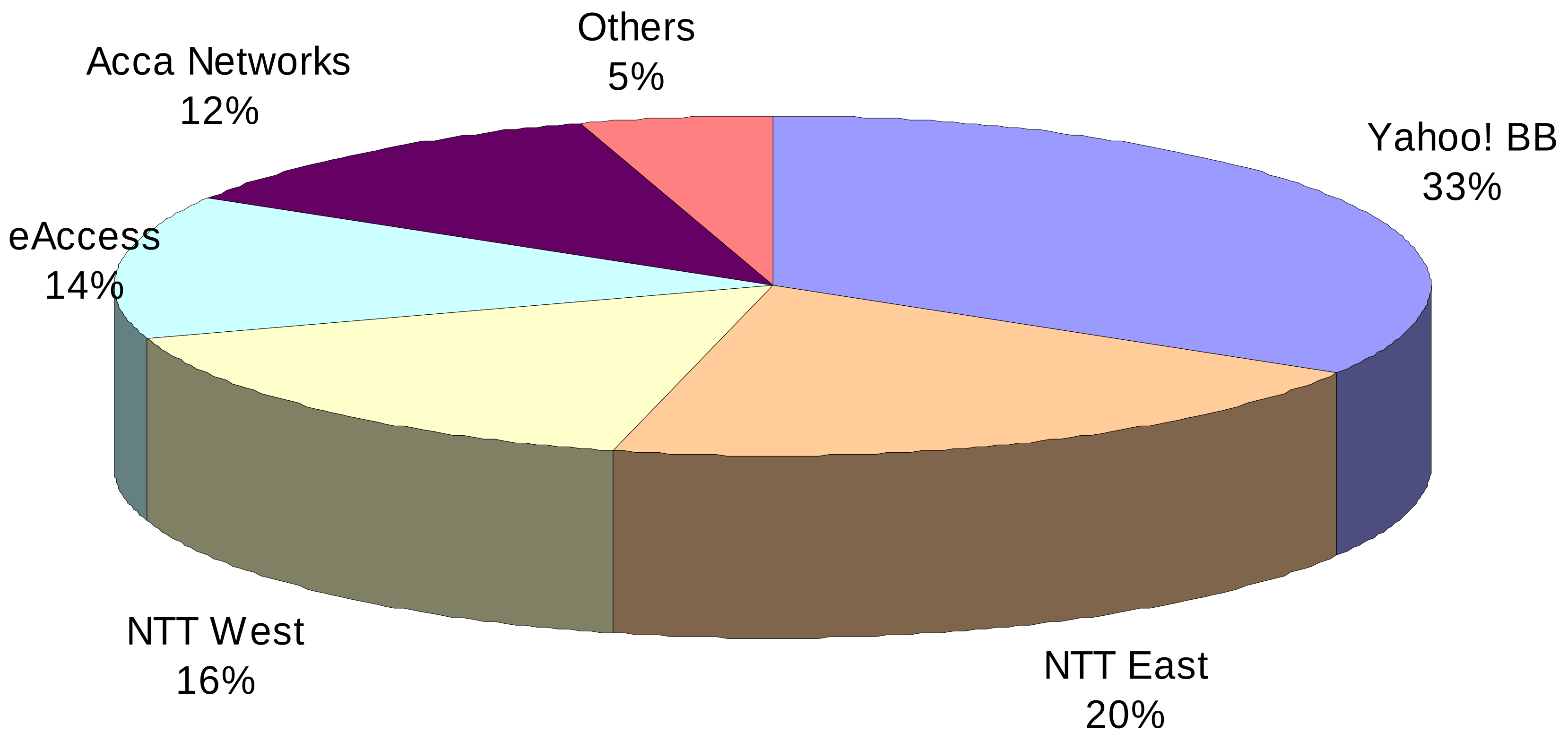
- Yahoo! BB ADSL
  - 45Mbps ¥ 3,938
  - 26Mbps ¥ 3,838
  - 12Mbps ¥ 3,538
  - 8Mbps ¥ 3,138
- eAccess + InterQ
  - 40Mbps ¥ 3,880
  - 8 Mbps ¥ 3,680



ZAR 1 = ¥ 17

CUASA
COMMUNICATIONS USERS ASSOCIATION OF SOUTH AFRICA

INTUG ADSL market shares



DoC, Johannesburg 1 vii 2004
www.INTUG.net

INTUG FTTx

- 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

ZAR 1 = ¥ 17

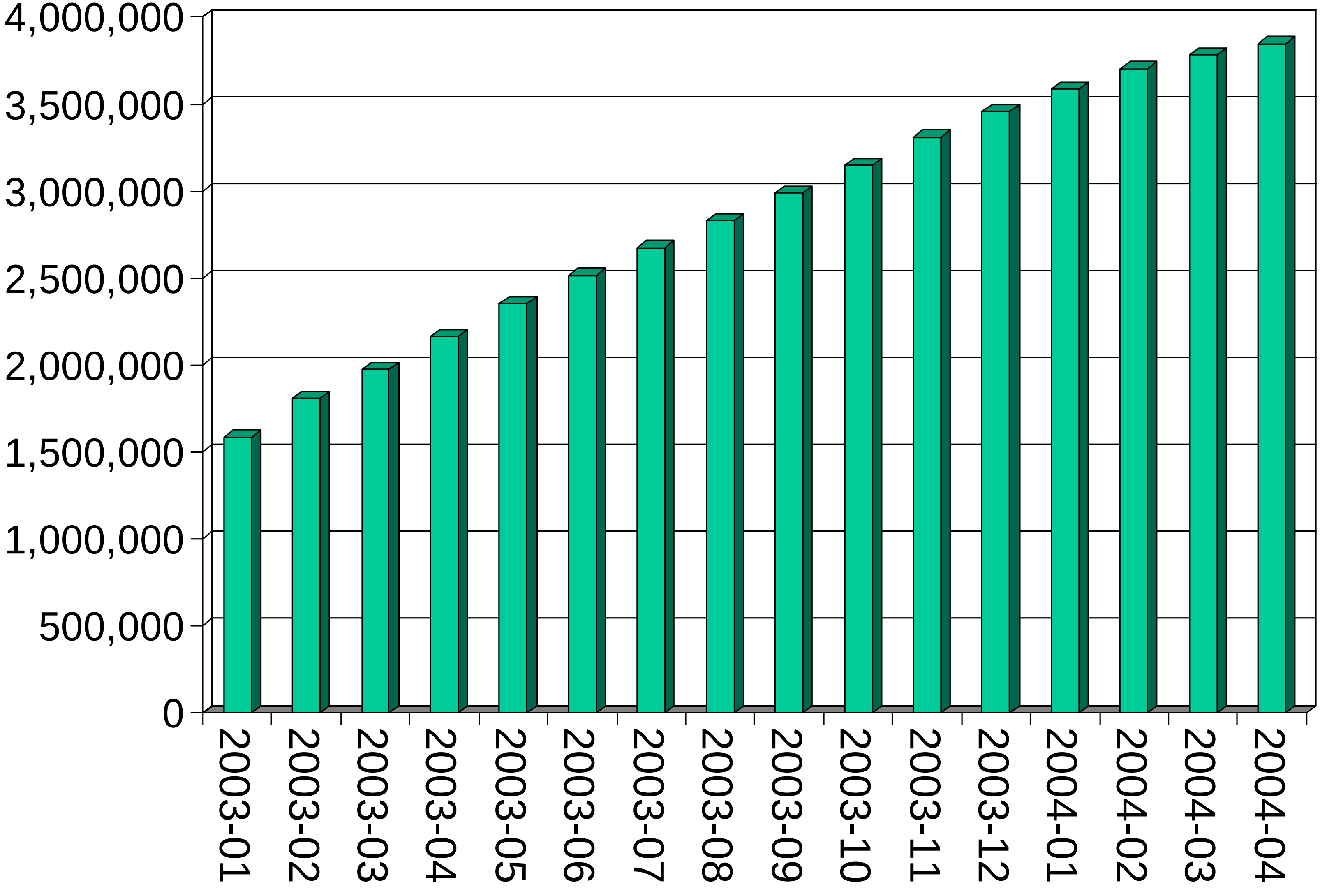
CUASA
COMMUNICATIONS USERS
ASSOCIATION OF SOUTH AFRICA

INTUG Voice over IP

- Yahoo! BB launched in August 2002
- NTT launched in February 2003
- some operators peering August 2003
- free on-net calls offer benefits for large operators
- special 050 number range
- cheap gateways to PSTN

CUASA
COMMUNICATIONS USERS
ASSOCIATION OF SOUTH AFRICA

INTUG Softbank BBphone (users)



INTUG japanese 3G

- Games, Gambling and Girls
- needs to be fast, given ADSL speeds
- anti-spam measures
- flat rate prices for data
- KDDI
  - up to 2.4 Mbps downlink and 144kbps or more uplink (best efforts)
- NTT DoCoMo Foma
- Vodafone KK
  - launch due soon

alternative is :
Greed, Gullibility and Grief

CUASA
COMMUNICATIONS USERS ASSOCIATION OF SOUTH AFRICA

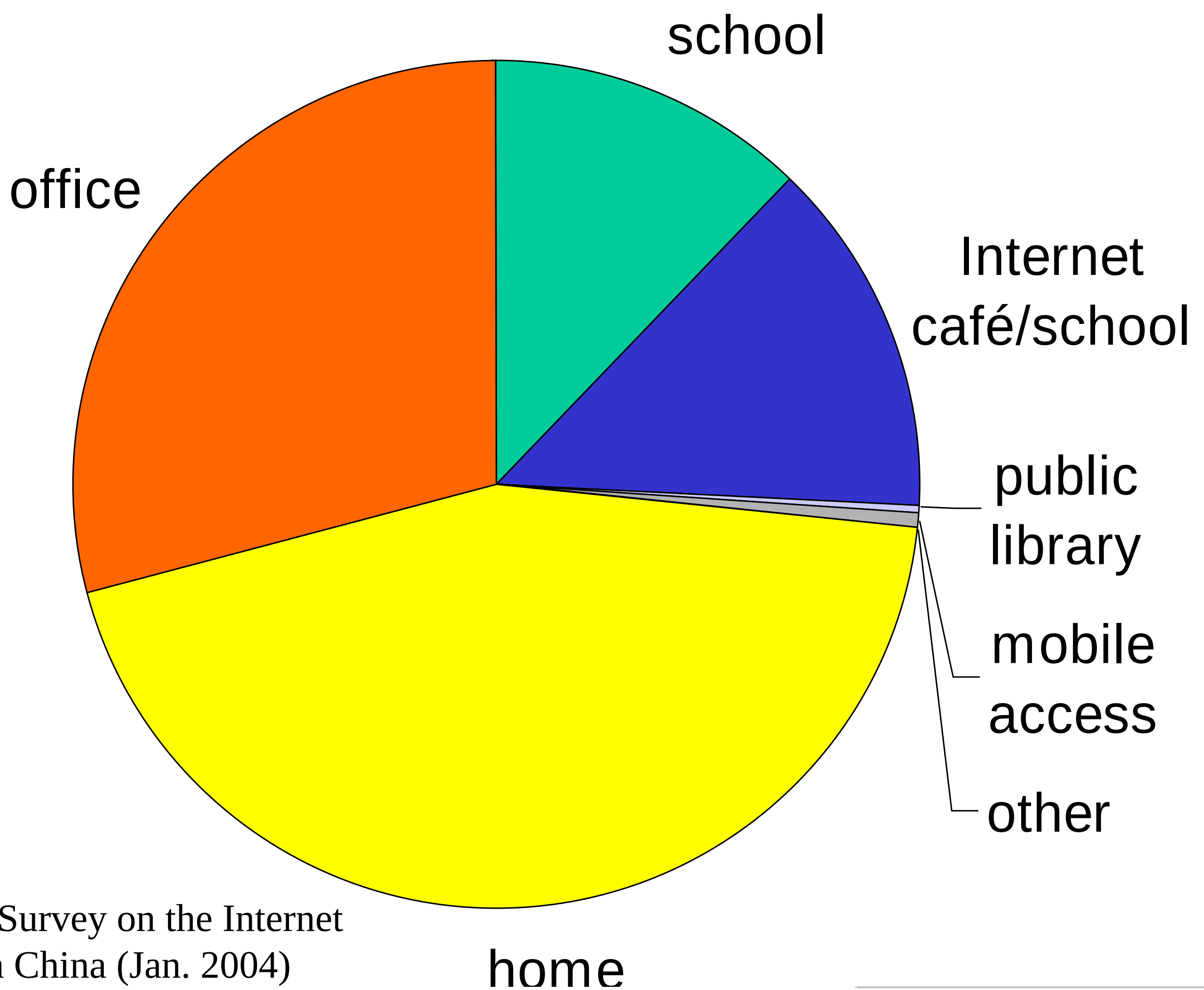
INTUG japan - overview

- 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

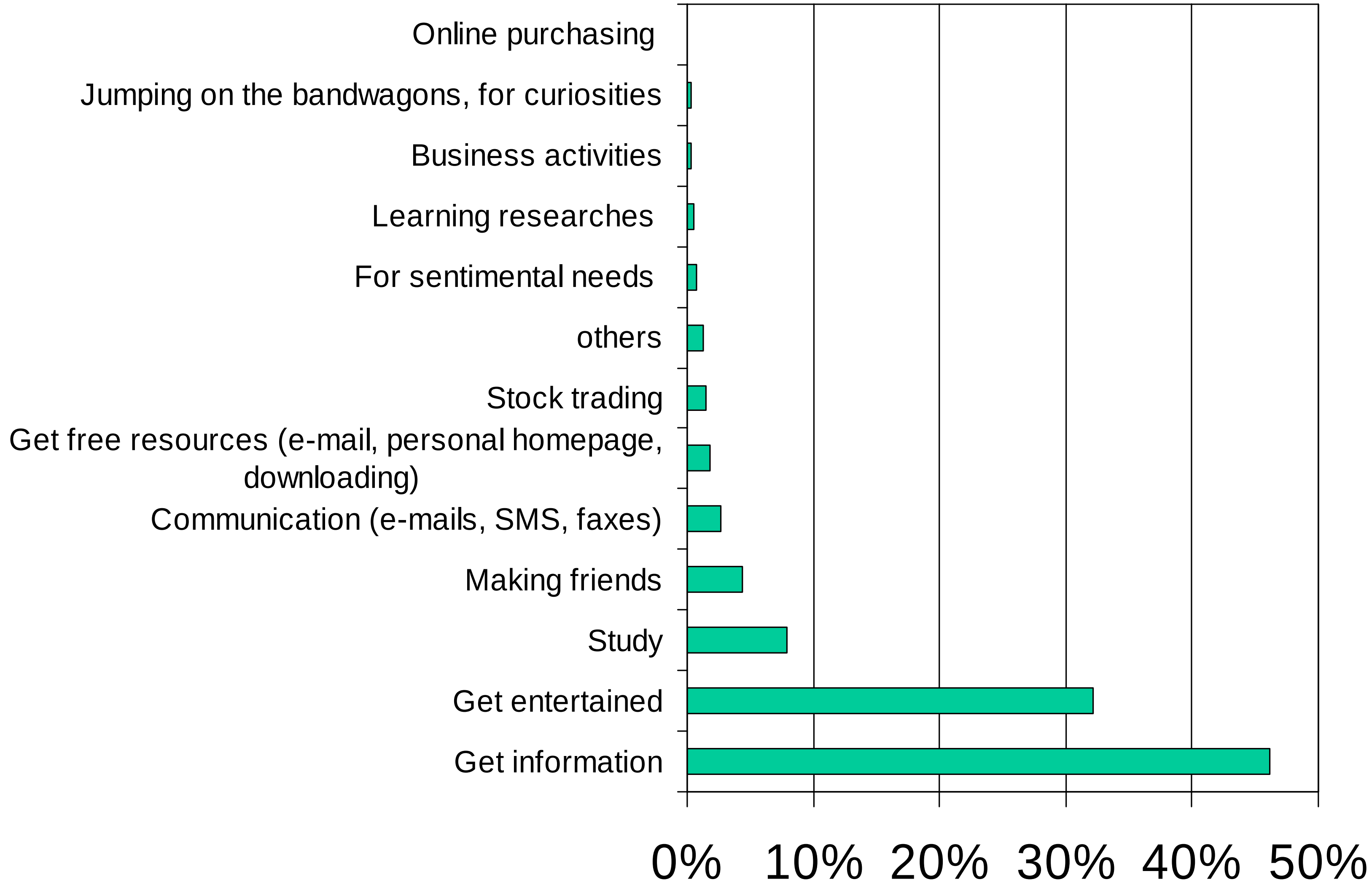
- very rapid growth
- huge economies of scale
- cheap domestically manufactured equipment
- using many different technologies
- multi-storey apartment blocks easily connected
- huge regional disparities

INTUG china - place of access



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

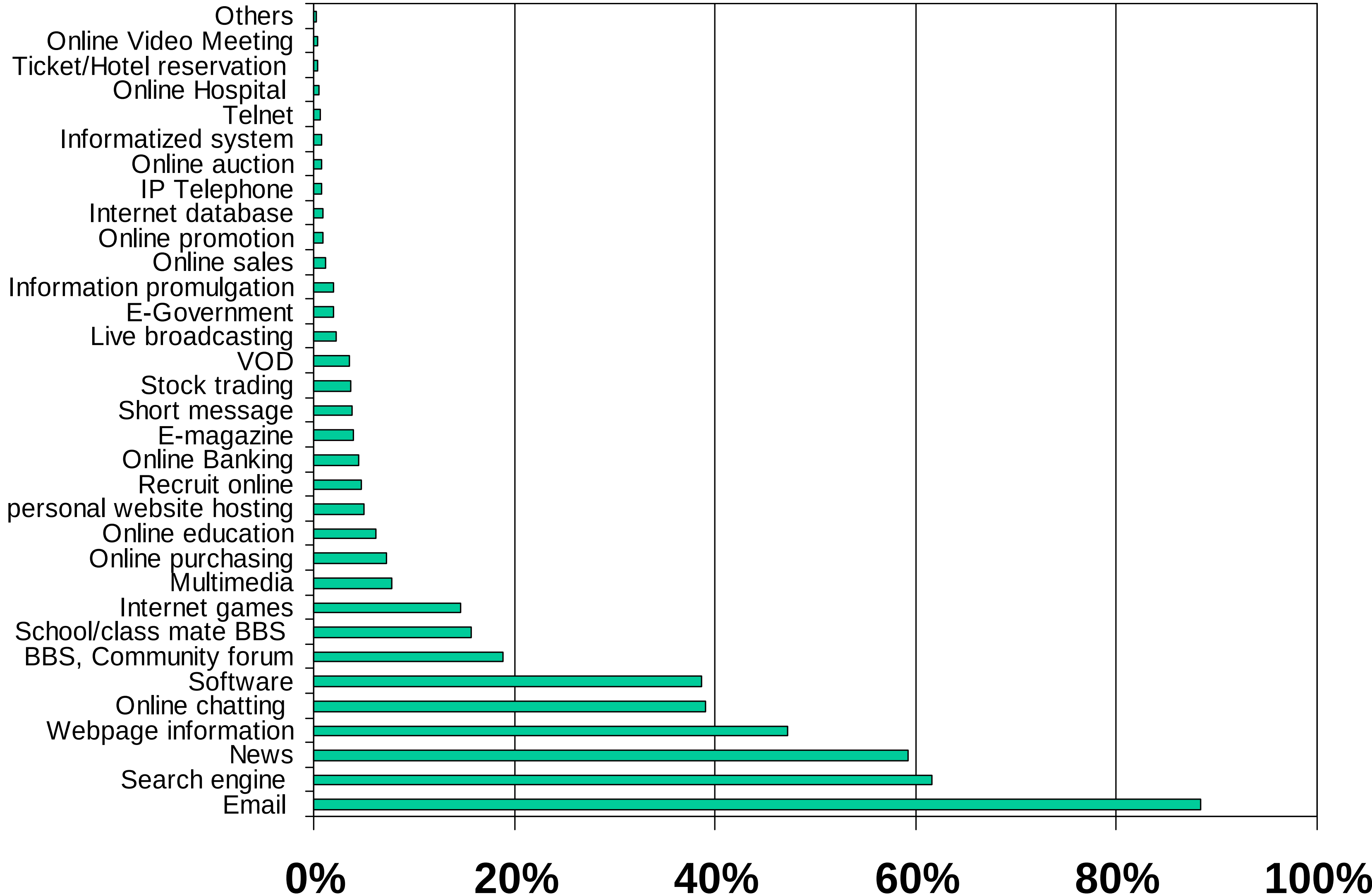
INTUG primary goal in accessing the Internet



DoC, Johannesburg 1 vii 2004

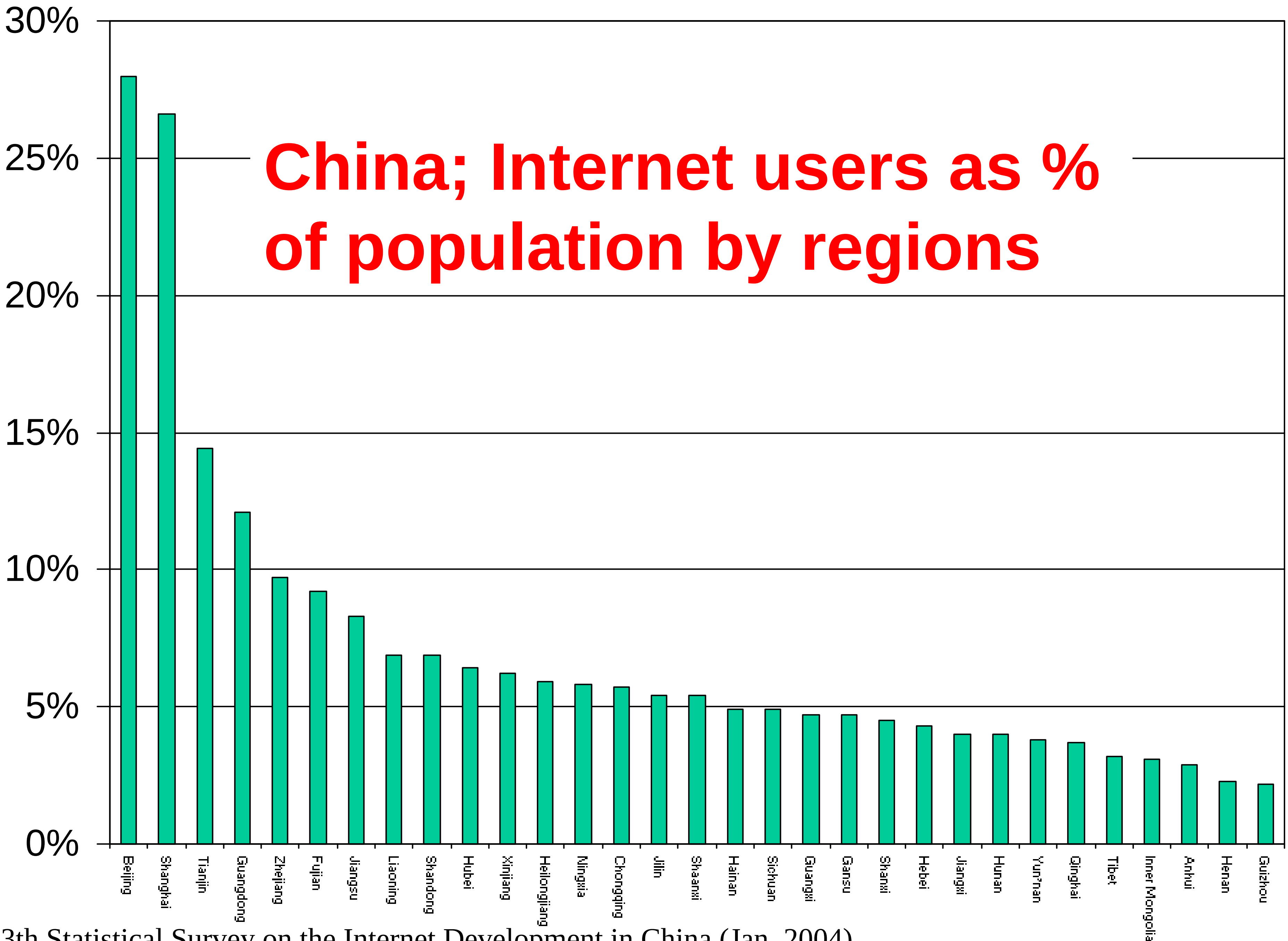
www.INTUG.net

INTUG most frequently used services (multiple choice)



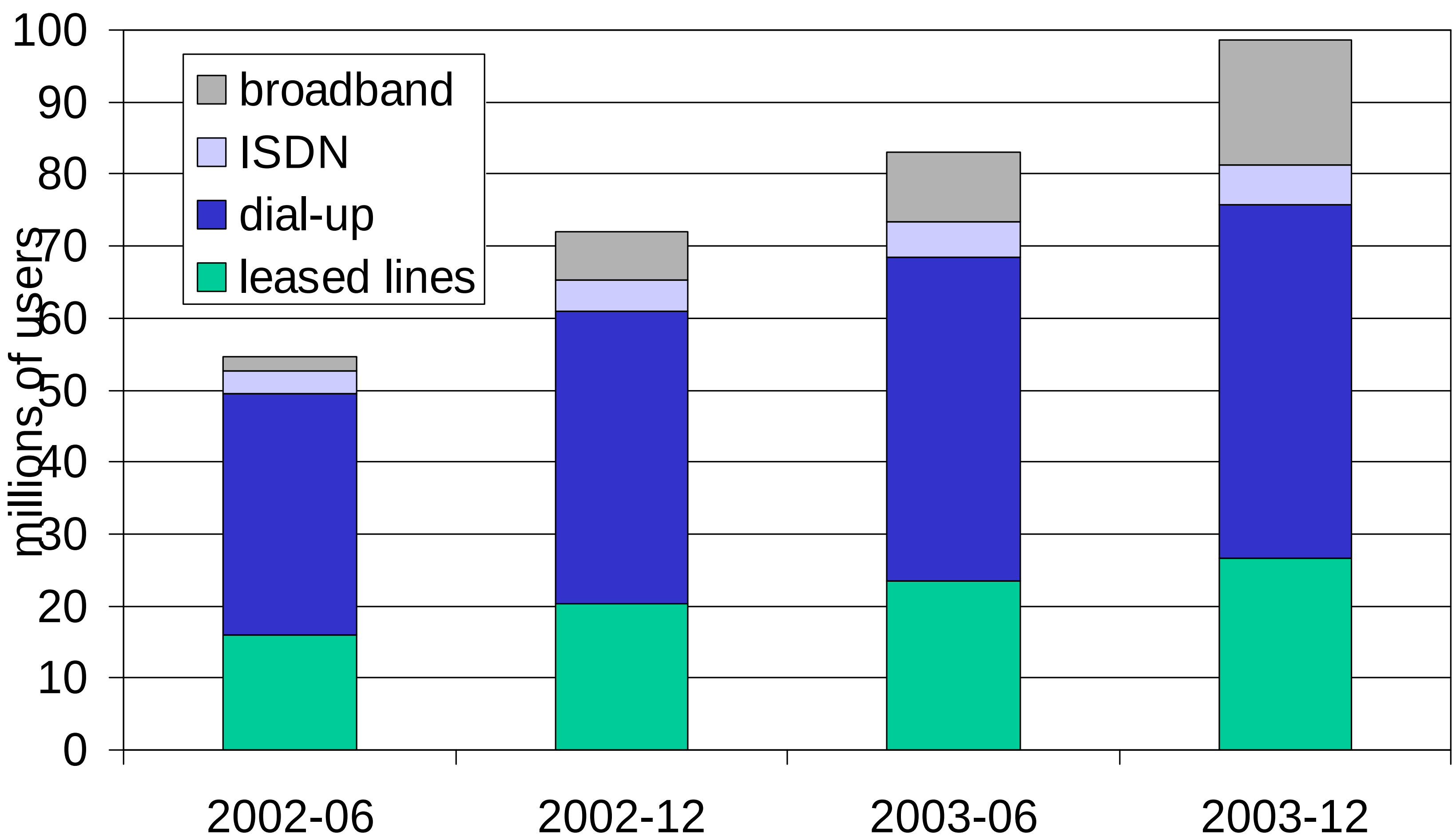
DoC, Johannesburg 1 vii 2004

www.INTUG.net



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

INTUG china – users' access methods



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

INTUG china broadband

- 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
- cable modems (1M?)
- BWA on 3.5GHz (1M “lines”?)
- still adding a lot of dial-up users
- immense growth potential

CUASA
COMMUNICATIONS USERS
ASSOCIATION OF SOUTH AFRICA

INTUG singapore

- early push on core infrastructure
- Singtel ADSL:
  - 256k SG$ 57.75 or 512k for SG$ 78.75
- Starhub cable modem:
  - 1.5M for $58.80 or 3M for $79.80
- government as Temasek Holdings controls:
  - SingTel
  - ST Telemedia which owns 50% of Starhub
  - a number of electricity and gas companies
  - MRT (railway company)
- cannot get competition

COMMUNICATIONS USERS ASSOCIATION OF SOUTH AFRICA

INTUG india

- rivalry with China
- competition worked with GSM (adding about 1.7M per month)
- likely to be repeated in broadband
- aiming at an initial 10 million lines
- ISPs authorised to build own last mile
- likely to be second largest English language broadband market by 2005
- now being chased by Pakistan

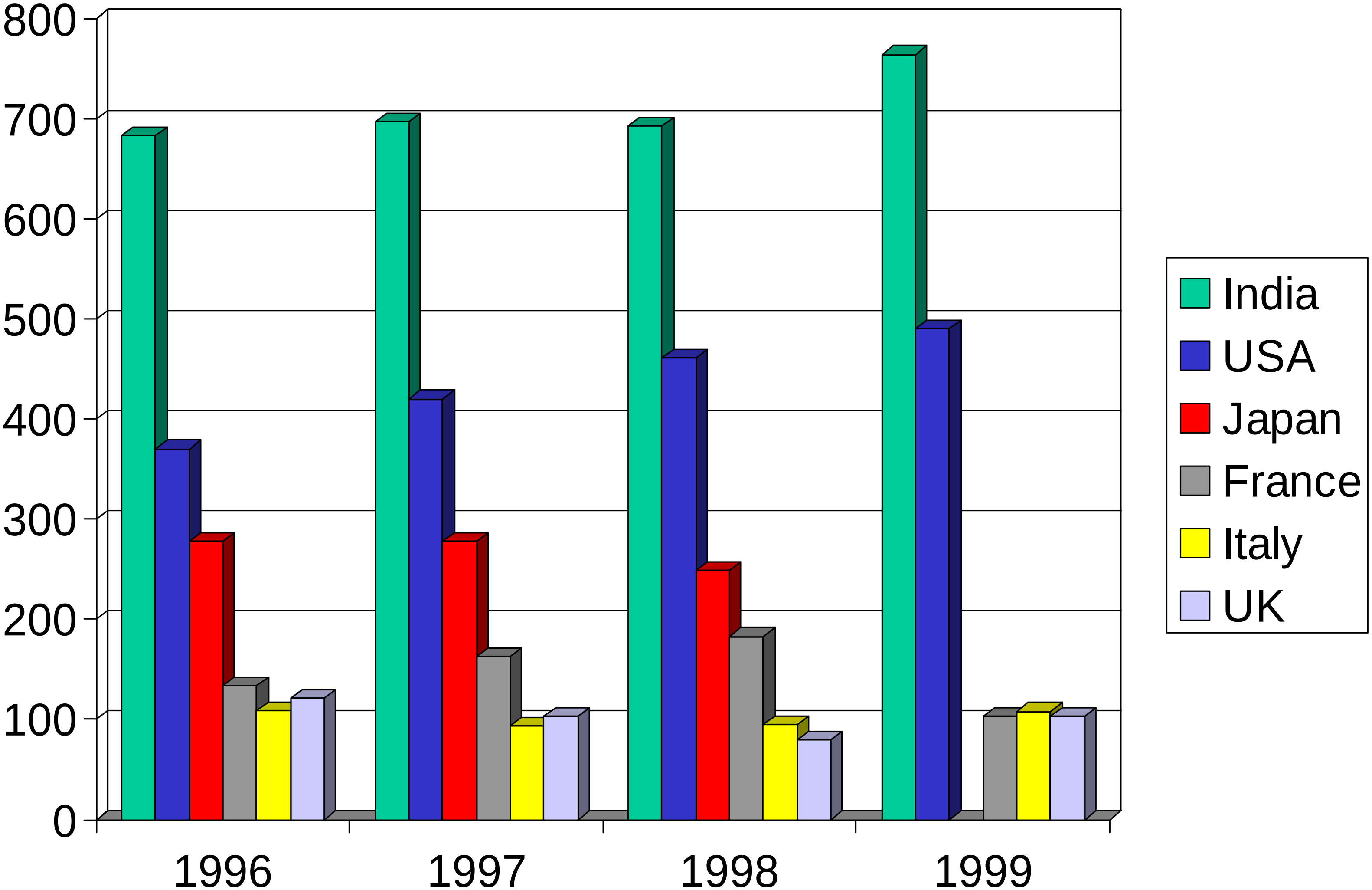
COMMUNICATIONS USERS ASSOCIATION OF SOUTH AFRICA

INTUG indian prospects

- new TRAI proposal
- supported by new government
- multiple retail players:
  - fixed incumbent and mobile operators
  - cable operators
  - ISPs
- national backhaul:
  - incumbent operators
  - IPStar (satellite)
  - Tata Power (carriers' carrier)
- international cable capacity
  - FLAG, i2i, SEA-ME-WE 4, etc
- truly massive content industry

CUASA
COMMUNICATIONS USERS
ASSOCIATION OF SOUTH AFRICA

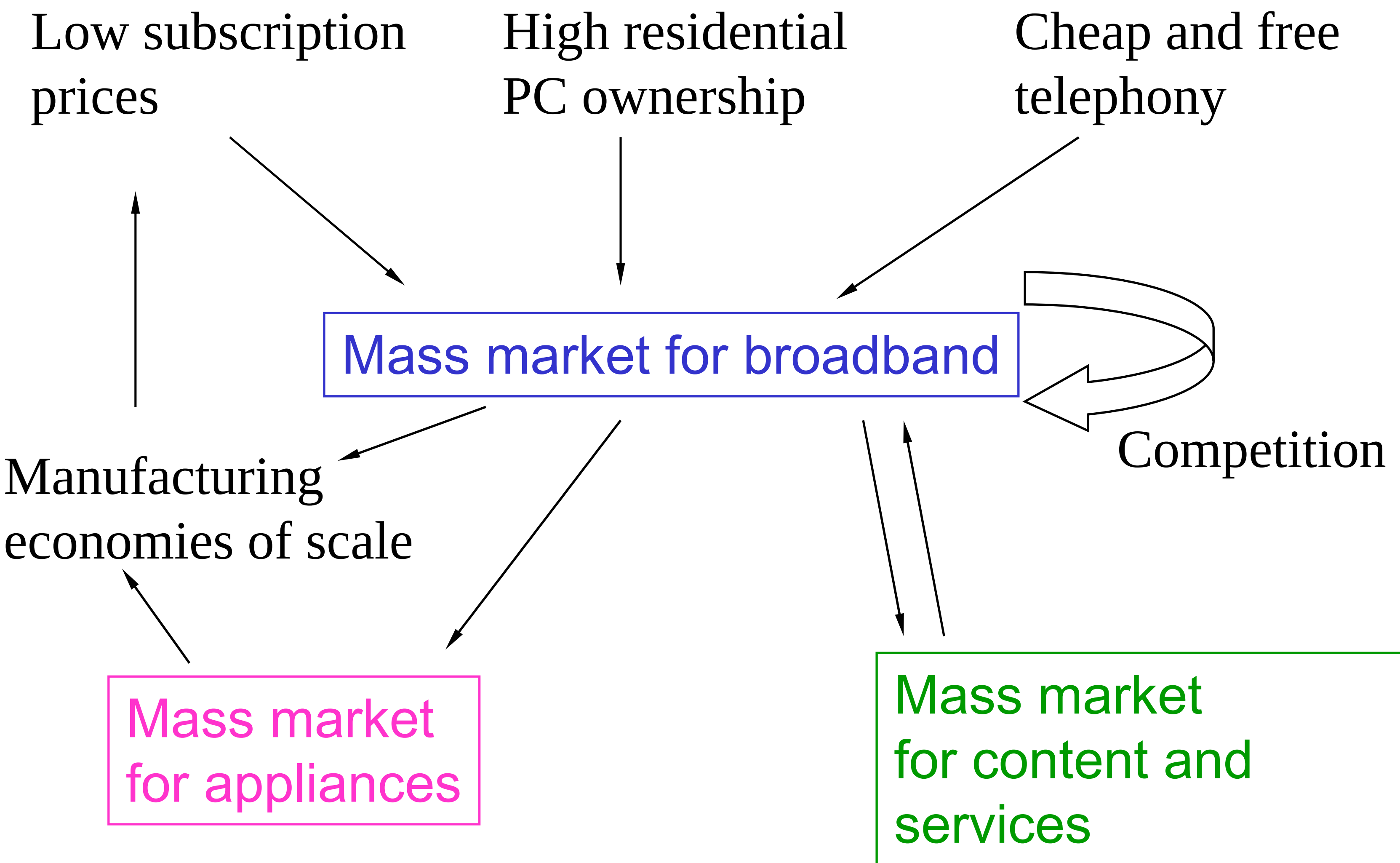
INTUG movie titles produced



Source: UNESCO.

DoC, Johannesburg 1 vii 2004
www.INTUG.net

INTUG drivers



INTUG Europe *versus* NE Asia

- mostly “bonsai" broadband: < 1Mbps
- protecting leased line revenues
- incumbents 3D deny/delay/degrade LLU for rivals
- incumbents bundle to block/stifle rivals
  - VoIP to protect telephony market share
  - content to control path to VDSL

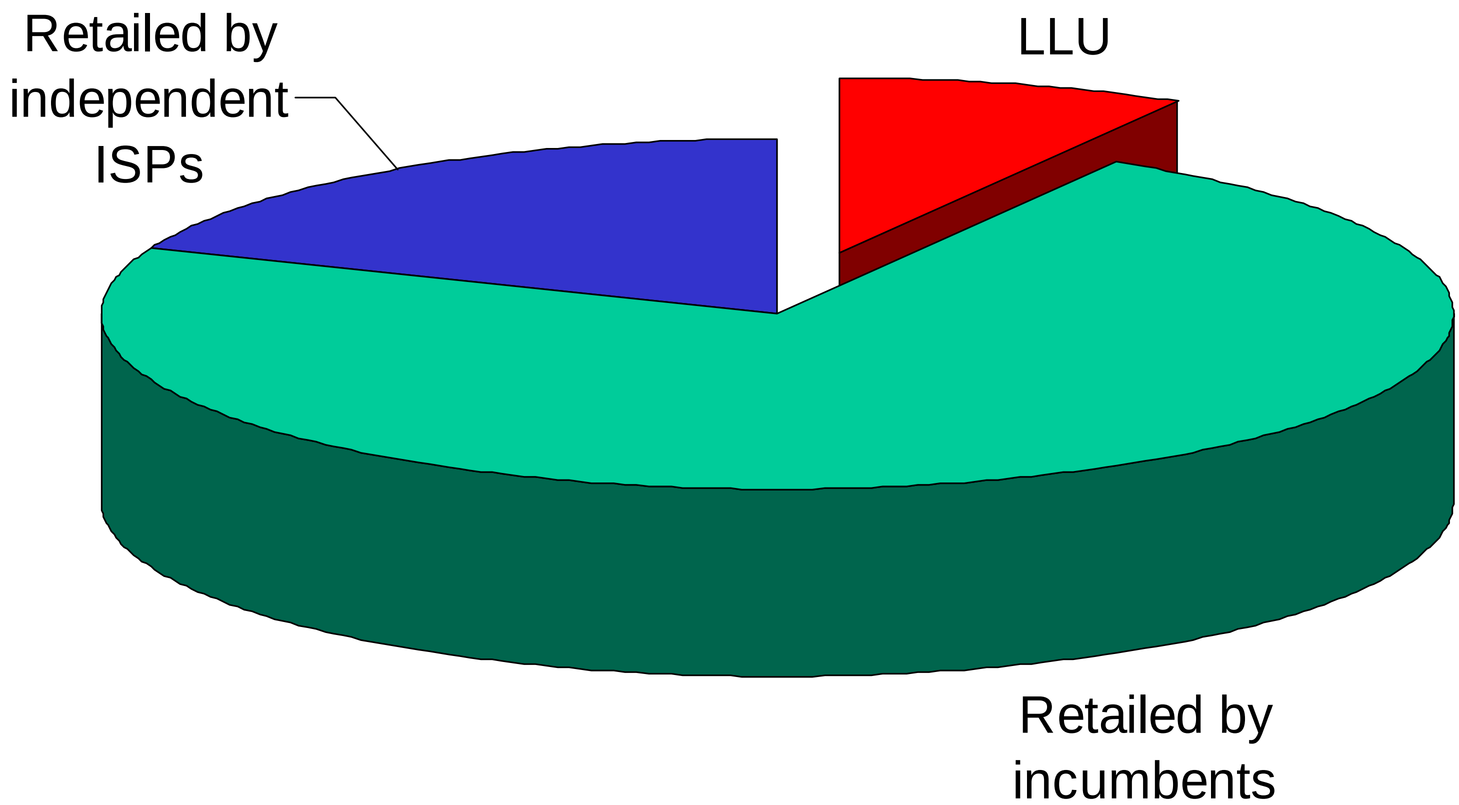
- very high bandwidth
- access
  - to all content
  - from all networks
- massive scale for
  - operators
  - manufacturers
  - service providers
- competitive market structure

CUASA
COMMUNICATIONS USERS ASSOCIATION OF SOUTH AFRICA

INTUG european union

- 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
- absence of cross-border market entry
- new regulatory framework very slowly being put into place

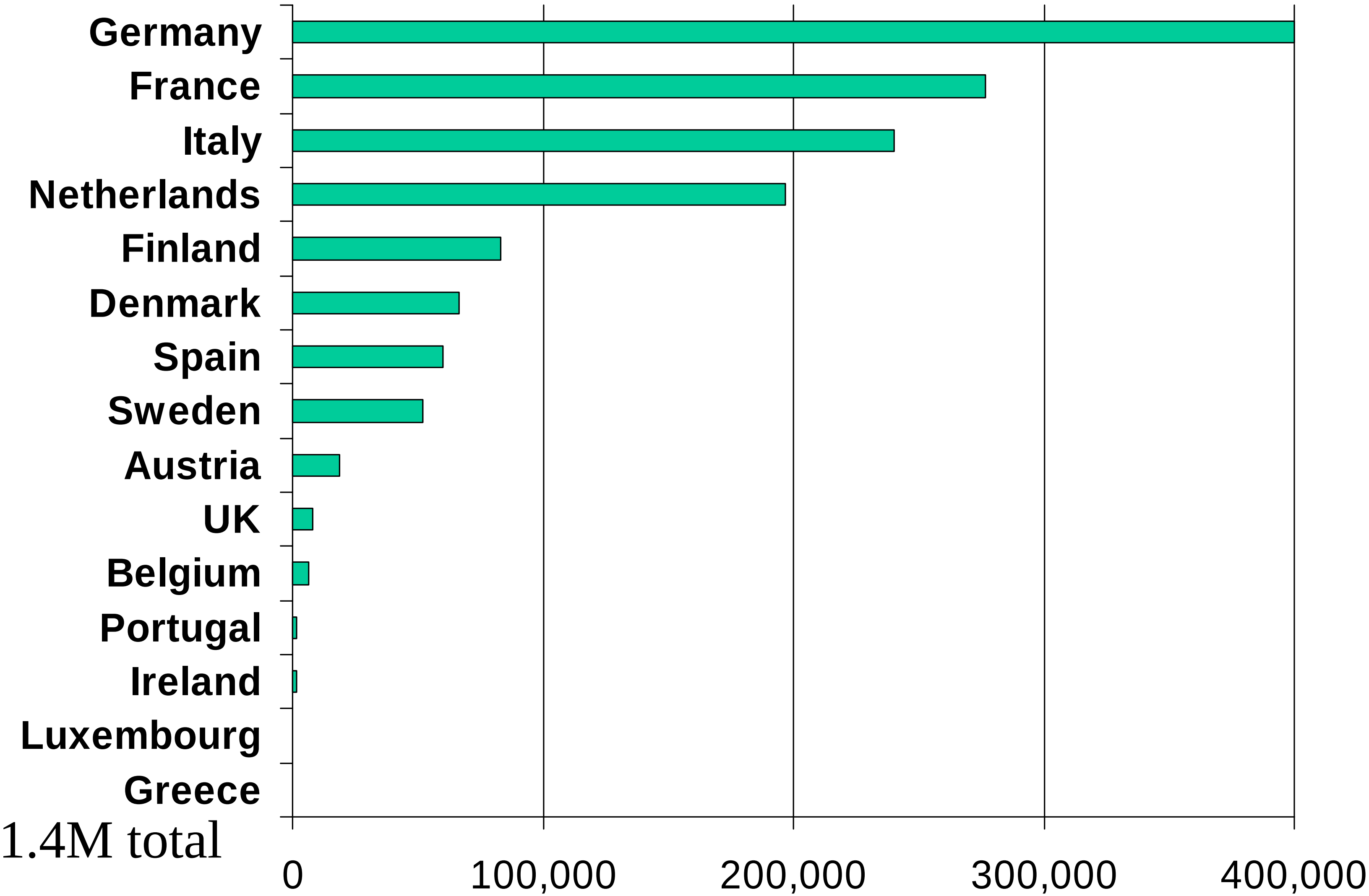
INTUG EU-15 ADSL



Source: ECTA.

COMMUNICATIONS USERS ASSOCIATION OF SOUTH AFRICA

INTUG unbundled lines in EU15

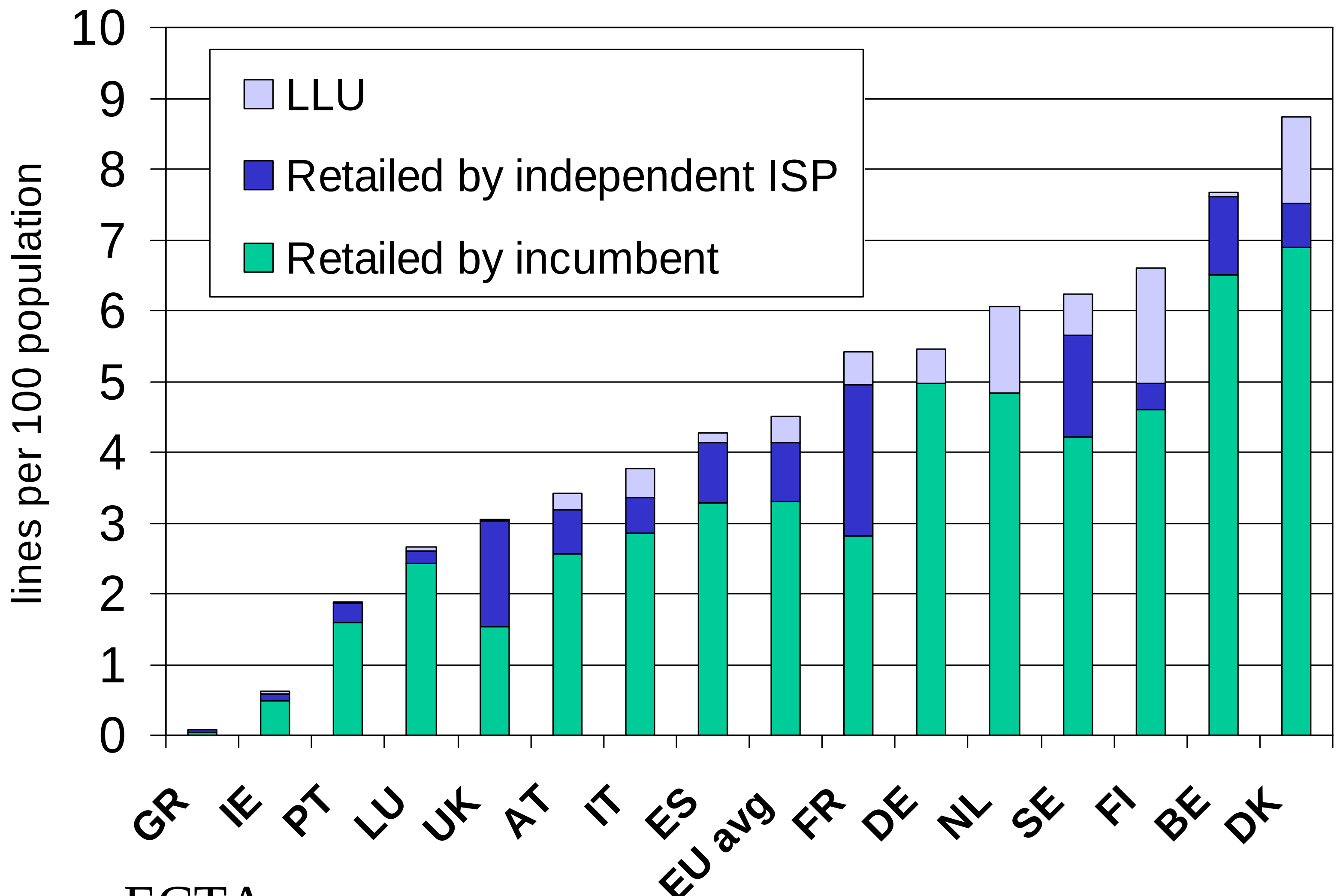


1.4M total

DoC, Johannesburg 1 vii 2004

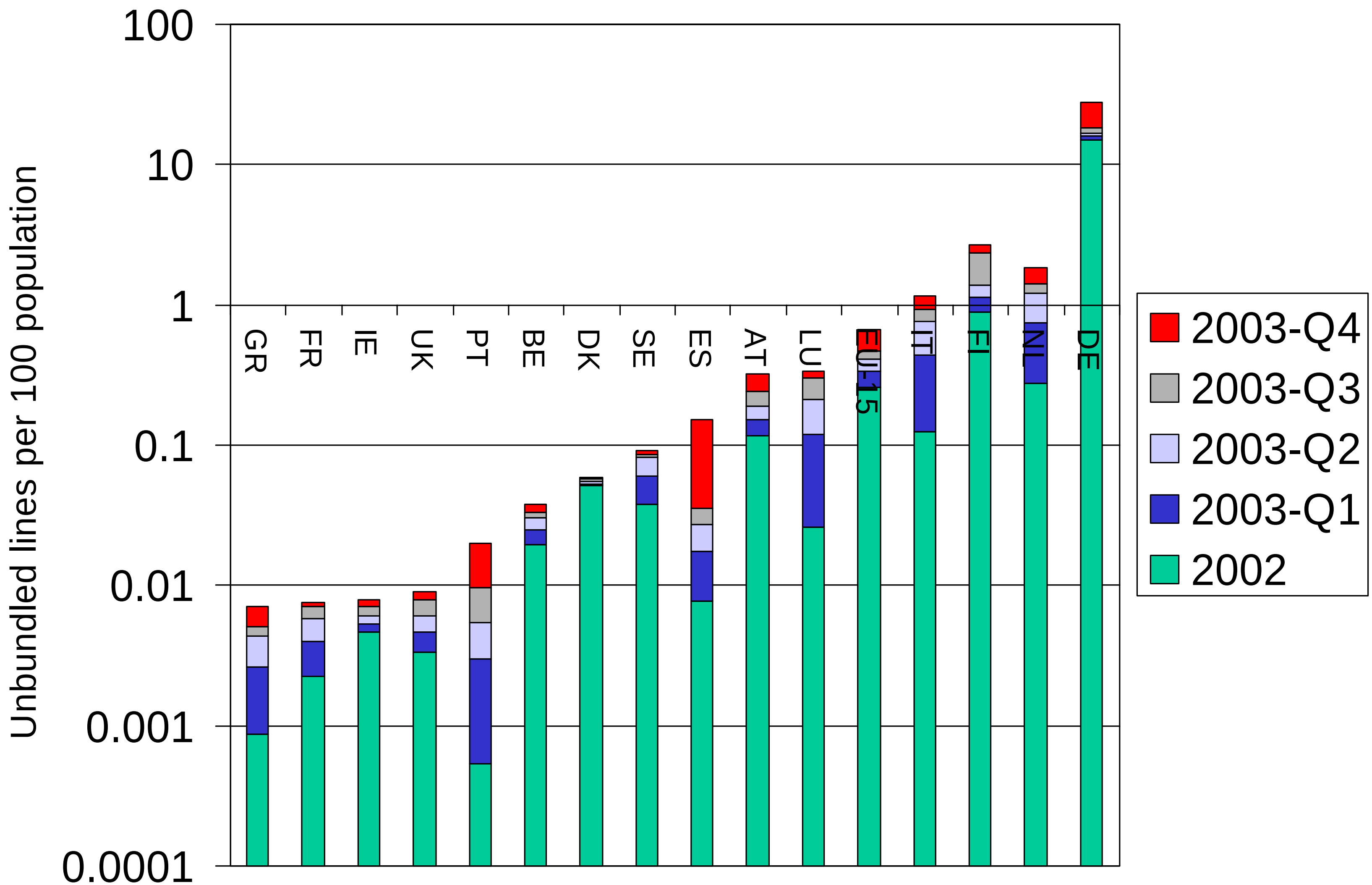
www.INTUG.net

INTUG EU-15 ADSL by country



Source: ECTA

INTUG growth of LLU in EU-15



DoC, Johannesburg 1 vii 2004
www.INTUG.net

INTUG european union

- no trace or hope of a single market
- 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 (recently upgraded to 512kbits/s)
  - some interesting municipal initiatives
- Sweden
  - Bostream 26Mbits/s ADSL
  - Bredbandsverlaget 10 and 100Mbits/s
  - TeliaSonera now speeding up
- Italy
  - Fastweb FTTB in major cities

CUASA
COMMUNICATIONS USERS
ASSOCIATION OF SOUTH AFRICA

INTUG rural and remote

- very little patience
- yet no clear target!
  (technology, speed, market structure, etc)
- no business model yet
- wild enthusiasm for money from governments
- OECD report says let markets work
- increasing evidence of success of Wireless ISPs
  - technology works
  - business models still early

CUASA
COMMUNICATIONS USERS ASSOCIATION OF SOUTH AFRICA

INTUG IP telephony

- not one technology or one service
- intrinsically “nomadic”
- already heavily deployed
  - operators’ core networks
  - corporate networks
  - some retail services
  - some peer-to-peer applications
- users benefit through reduced prices only if there is competition

CUASA
COMMUNICATIONS USERS
ASSOCIATION OF SOUTH AFRICA

INTUG VoIP plus broadband

- an obvious incumbent response is to bundle in order to conceal rates:
  - “all you can eat” national calls
  - DSL plus “telephony” (plus video)
  - but not fixed-to-mobile
- incumbent operators wait for others to launch the service
- but they benefit from economies of scale
  - free on-net calls
  - Metcalf’s law

INTUG VoIP and wireless

- makes fixed-to-mobile look yet more expensive
- voice over Wi-Fi already works:
  - early adopters
    - special handsets
    - softphones
  - corporate campuses
  - some developing countries (e.g., Bhutan)
- eventually a way to overcome international mobile roaming charges

INTUG towards 100Mbits/s

- 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 ~80,000 per month
- some high capacity radio technologies are already being deployed

CUASA
COMMUNICATIONS USERS
ASSOCIATION OF SOUTH AFRICA

INTUG Fibre To The Home

- 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
- market opening for utility companies
- how do you regulate access regime;
  - “must carry”
  - “must have”

COMMUNICATIONS USERS ASSOCIATION OF SOUTH AFRICA

INTUG conclusions

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
- peer-to-peer

CUASA
COMMUNICATIONS USERS ASSOCIATION OF SOUTH AFRICA

INTUG government roles

- national ICT strategy
- ensuring **real** competition
- raising PC ownership in homes
- supporting local and linguistic content
- keeping a steady course

CUASA
COMMUNICATIONS USERS
ASSOCIATION OF SOUTH AFRICA

INTUG looking ahead

- 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 (250Mbits/s and more)
- revenue from content and services
- jobs and economic growth

CUASA
COMMUNICATIONS USERS
ASSOCIATION OF SOUTH AFRICA

INTUG thank you

Ewan Sutherland

International Telecommunications Users Group

Reyerslaan 80

B-1030 Brussels

Belgium

+32.2.706.8255

ewan@intug.net

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

CUASA

COMMUNICATIONS USERS ASSOCIATION OF SOUTH AFRICA