Broadband

aspiring to be world class

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http://www.3wan.net/

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World-class broadband

- Competition:
  - speed
  - price
  - diversity of offers
  - combination with other services
- Multi-play offers:
  1. Internet access
  2. Voice telephony
  3. Television
  4. Mobile/cellular

- Hong Kong: HKBN
  - 1,000 Mbps
  - free movies
  - HK$1,680 per month (ZAR ???)
- Singapore has announced:
  - 1Gbps as a target
  - 100Mbps as an interim measure

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ZAR ? = HK$ 6

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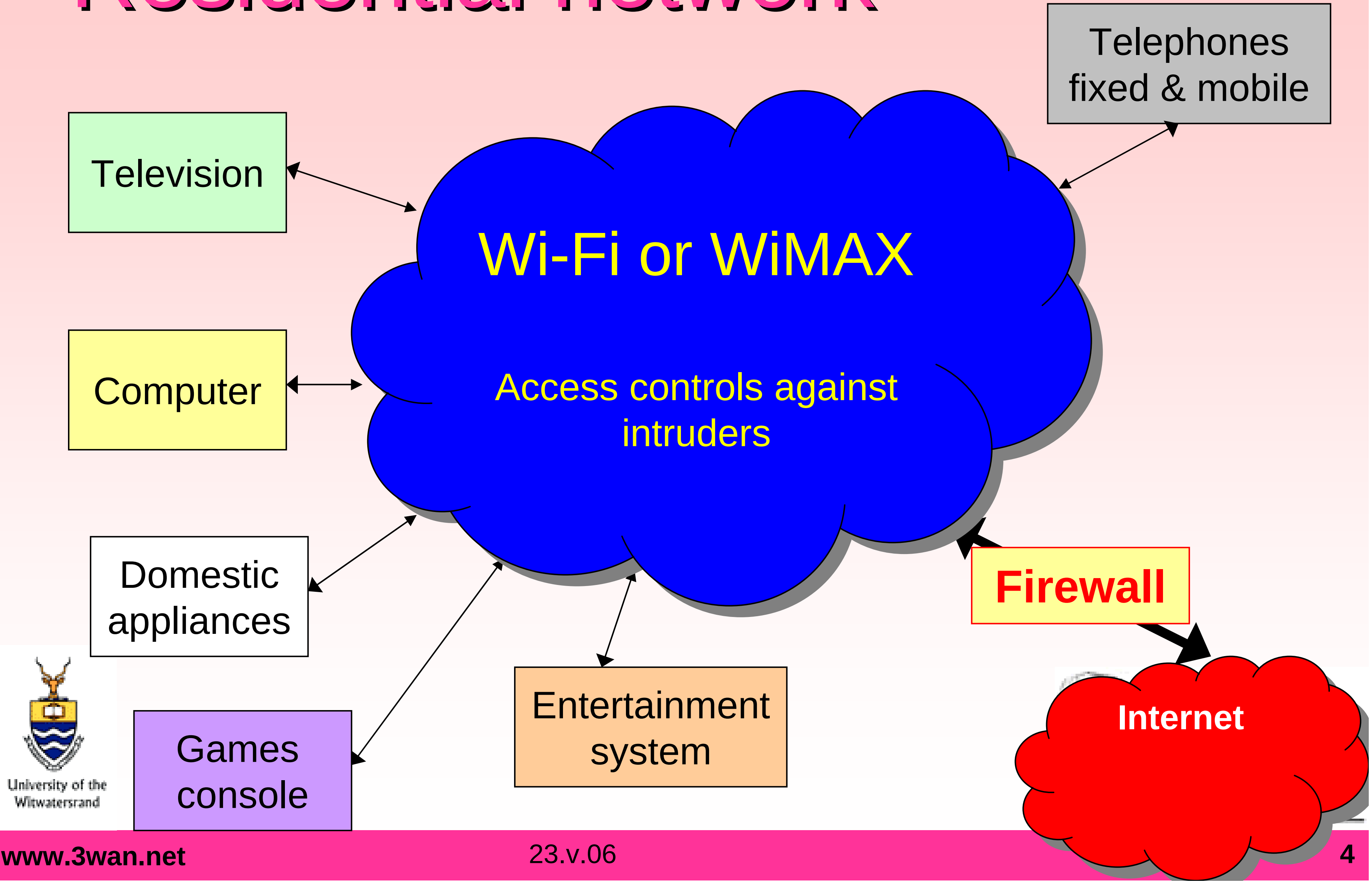
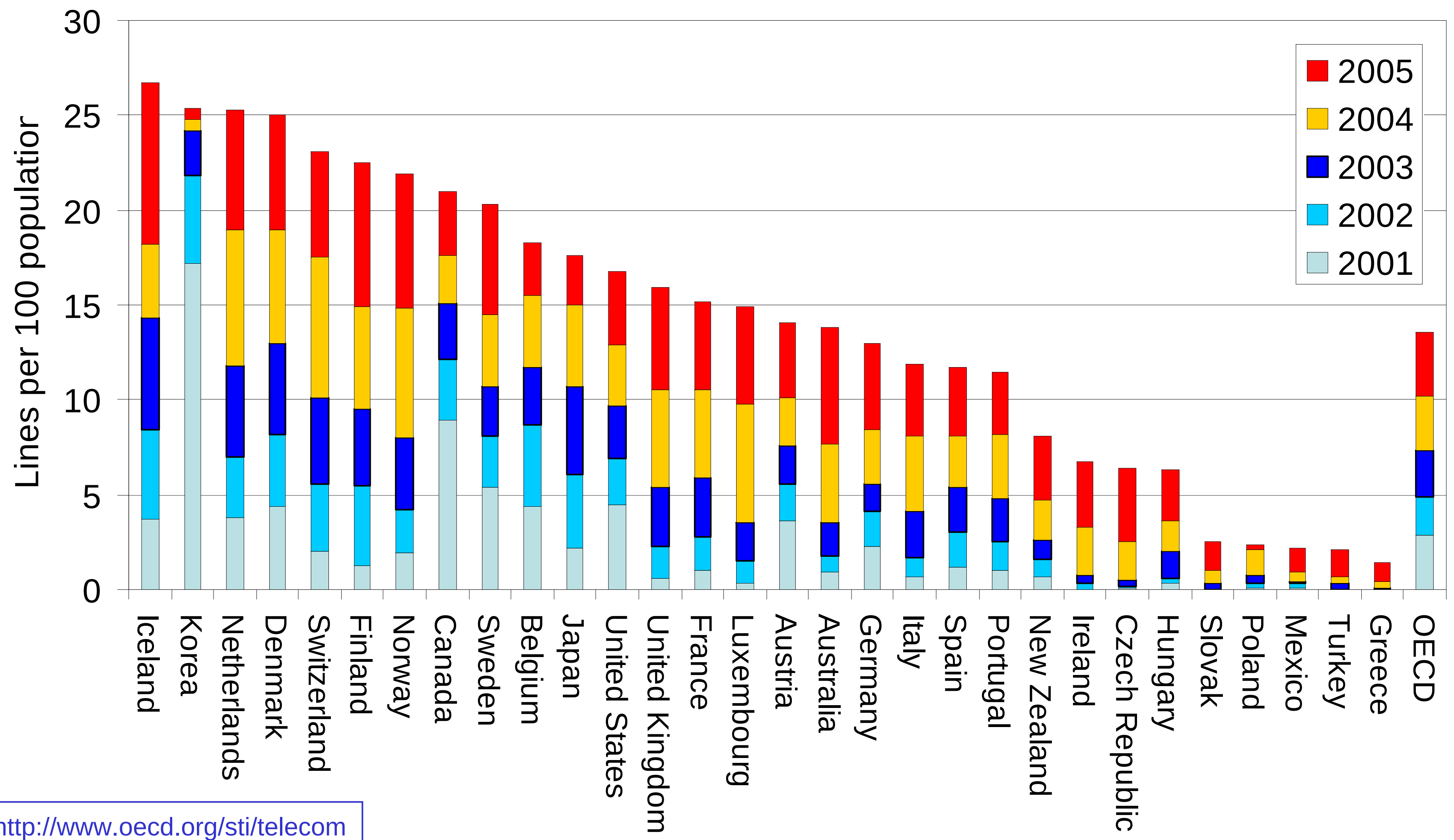
Residential network

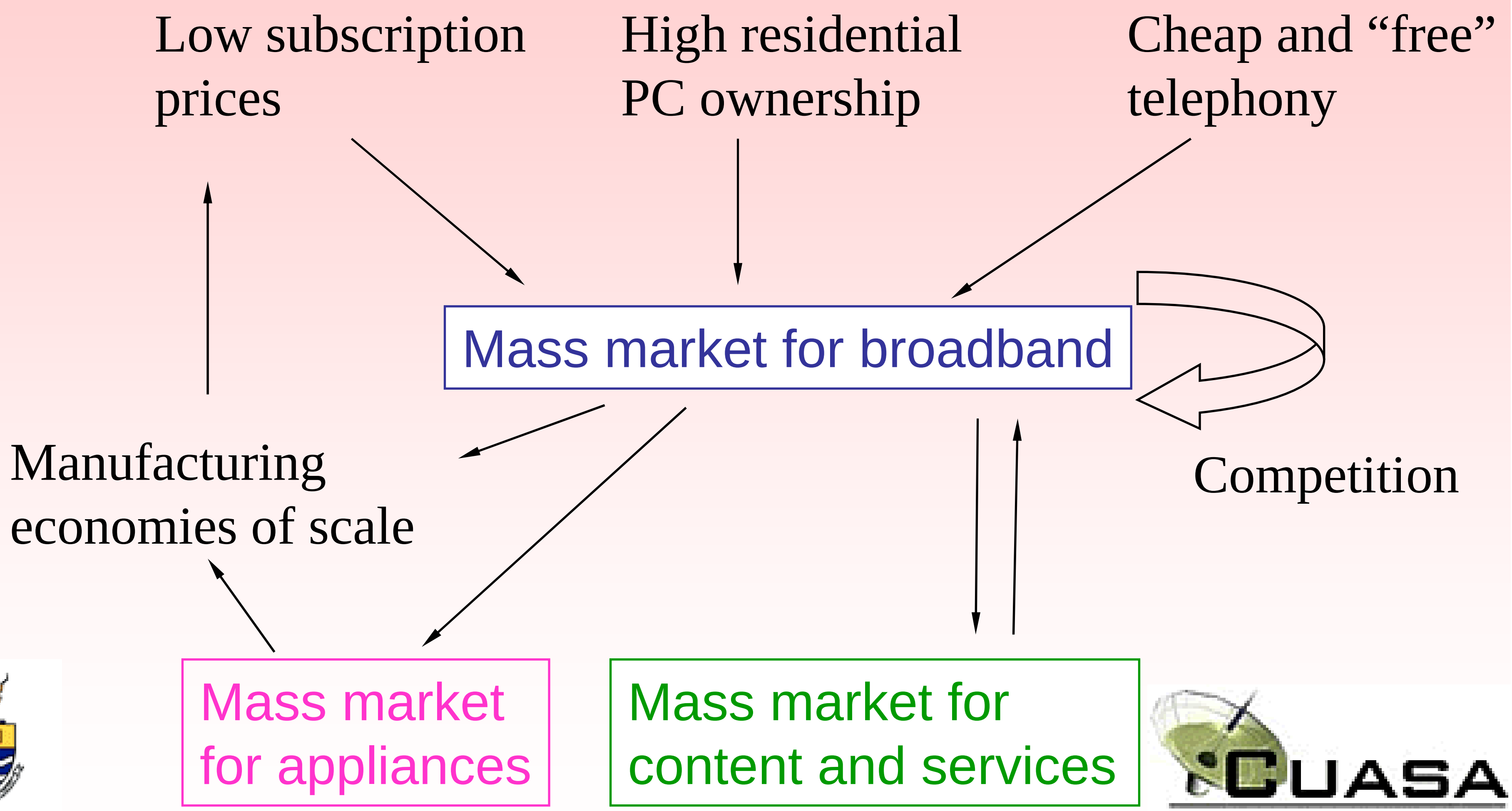


OECD broadband growth



http://www.oecd.org/sti/telecom

Drivers



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Japan

- NTT market shares:
  - 37.5% of retail DSL
  - 33.9% of FTTB
  - 77.8% of FTTH
- Yahoo! BB:
  - 50 Mbps down, 12.5 Mbps up
  - ¥ 4,500 per month (ZAR 265)
  - also VoIP and television
- Hikari FTTx:
  - symmetric 100 Mbps
  - from ¥ 6,000 per month (ZAR 353)

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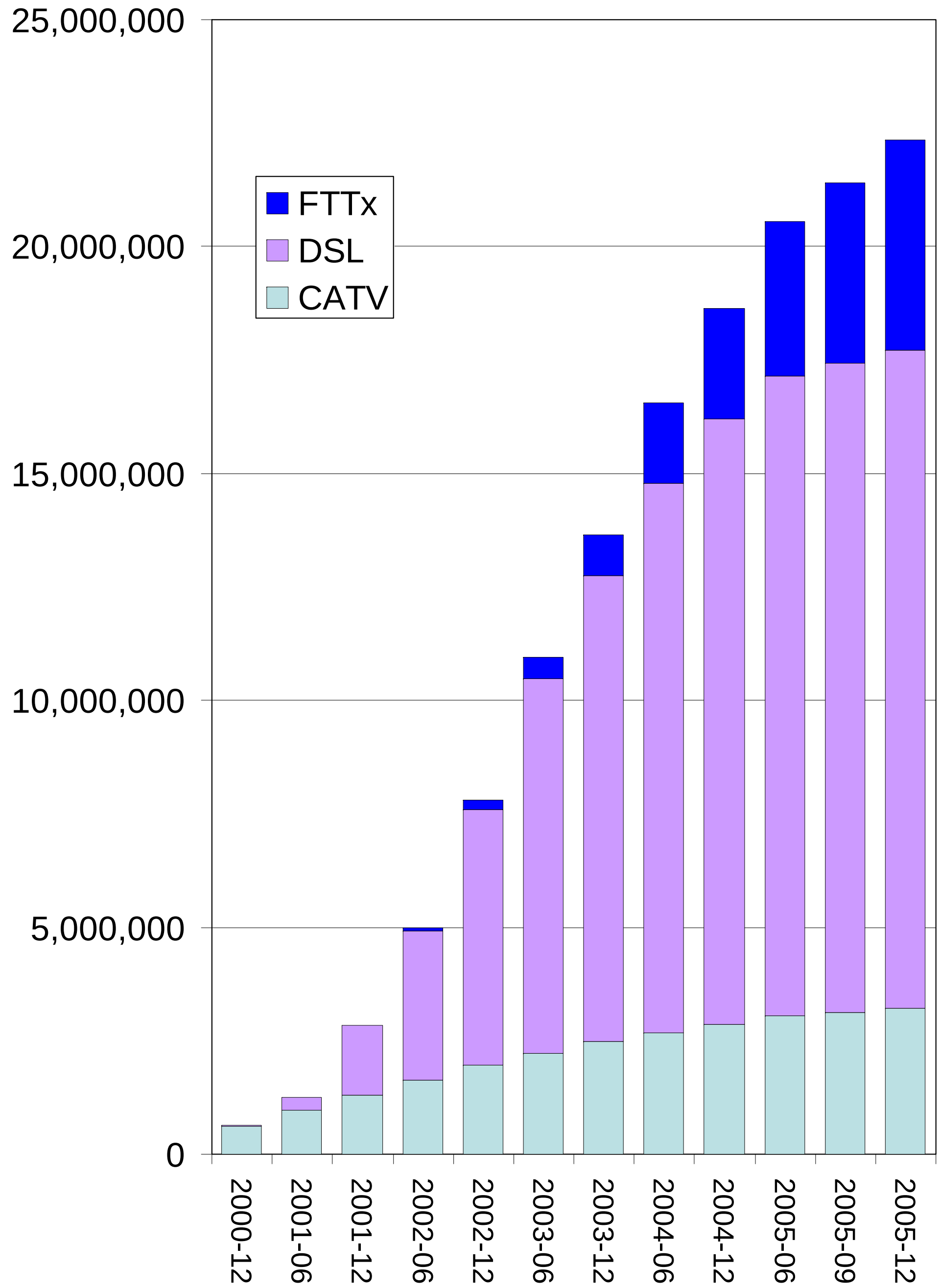
ZAR 1 = JPY 17



The growth of “heavy hitters”

http://www.nanog.org/mtg-0602/pdf/cho.pdf

France

- Free.fr
  - 24 Mbps for € 29.99
    - includes calls to fixed networks in France, Australia and other countries
    - plus TV channels
  - 20 Mbps for € 14.90
  - both offers are uncapped
- Neuf.fr
  - 20 Mbps for € 14.90
  - 20 Mbps for € 29.90 including line rental and calls to the fixed network
- Wanadoo.fr
  - 18 Mbps for € 39.90

Telecom Italia – Alice brand

- **Italy** € 36.95 for 20 Mbps
- **Germany** € 49.90 for 20 Mbps including calls to the fixed network
- **France** € 29.95 for 20 Mbps also includes all calls to the fixed network and digital TV channels

ZAR 8.31 = EUR 1

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Wireless VoIP

France Iliad “free.fr”

- Any Wi-Fi hotspot with “freebox”:
  - your home
  - your neighbours
  - people in the next street, village or town
- Free calls to fixed networks in:
  - France
  - 14 other countries

Nokia E-Series handsets

- Wi-Fi when in:
  - corporate offices worldwide
  - home
- SIP client to connect to corporate SIP server
- otherwise GSM
- Being combined with iPASS, a global Wi-Fi supplier

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SIP = Session Initiation Protocol

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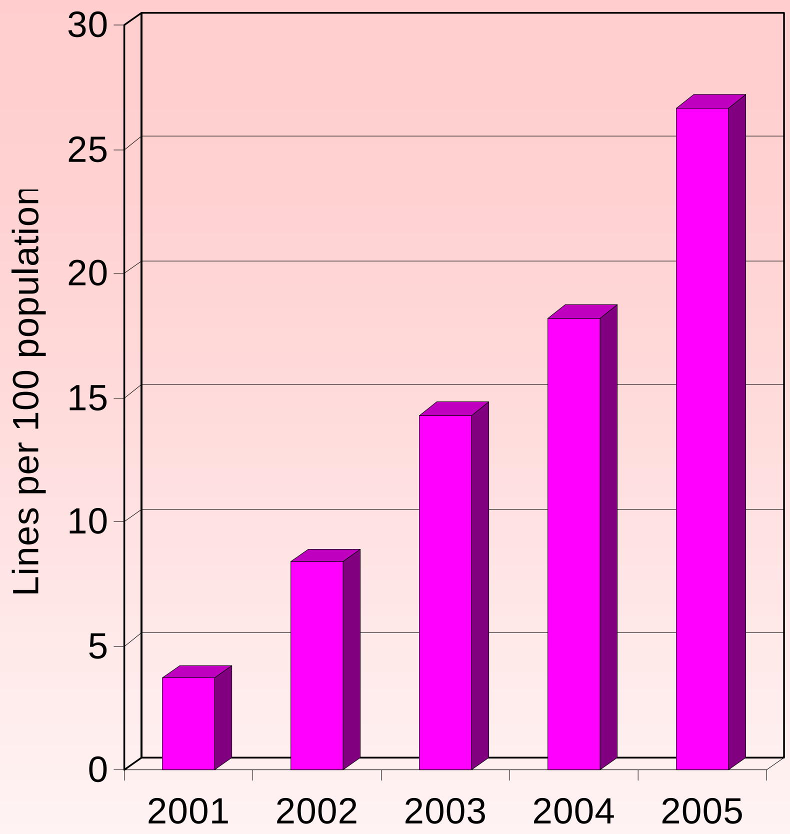
Iceland

- A volcanic island in the North Atlantic
- Now leads the OECD on broadband penetration
- Overtook South Korea in 2005
- 300,000 people on 100,000 km^2



Iceland should be ranked among nations enjoying the most efficient, secure, accessible and innovative electronic communications services.
Iceland Telecom Policy Statement 2005-2010

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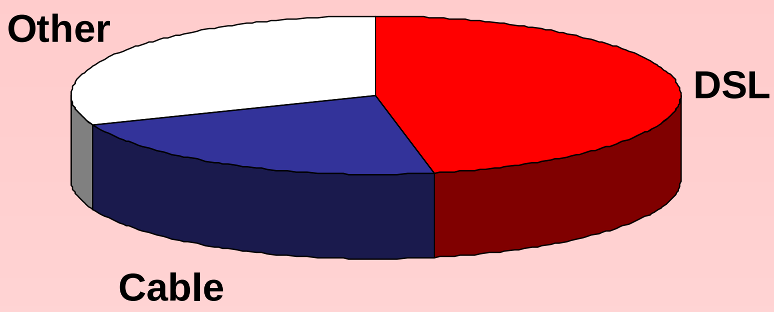
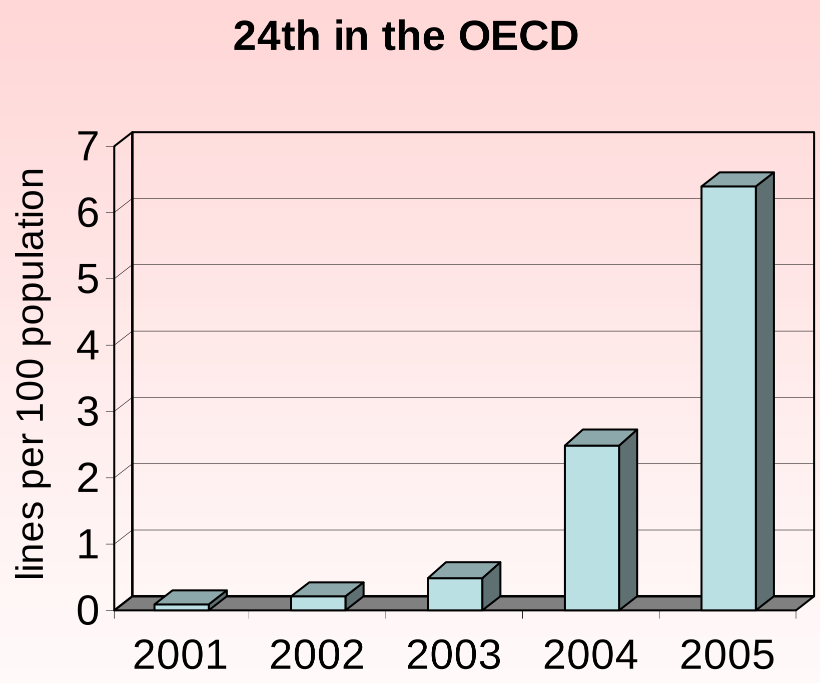
Czech republic





- Broadband is a type of access for users which does not limit end-users in terms of what they wish to do and when they wish to do it
- Modest copper network due to lack of development before 1990
- Subsequently growth in NMT and GSM
- NMT converted to cdma450 1X EV-DO (up to 800 kbps)

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http://www.micr.cz/files/2185/MICR_brozura_en.pdf

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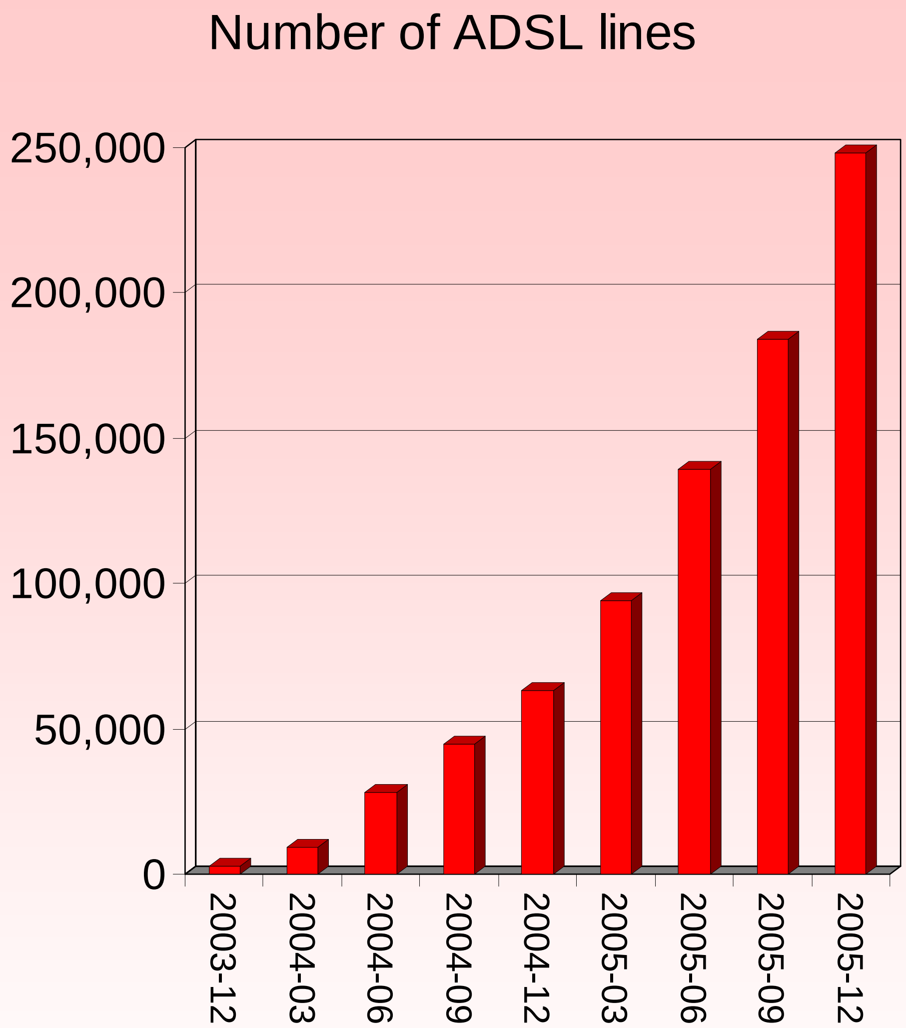
Morocco

- The leader in Africa
- 31 million population
- US$ 1,677 GDP per capita
- Menara:
  - 4 Mbps for MAD 799 (ZAR 596)
  - 0.512 Mbps MAD 399 (ZAR 298)
  - 0.256 Mbps MAD 299 (ZAR 223)
  - no download cap



ZAR 1 = MAD 1.34

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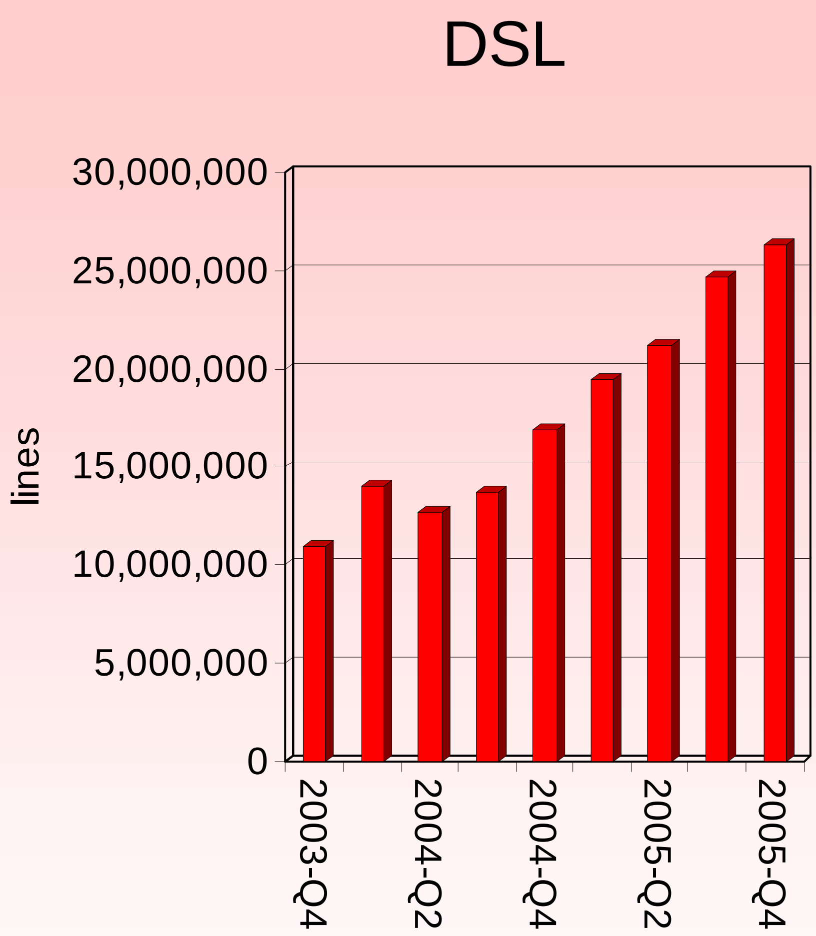
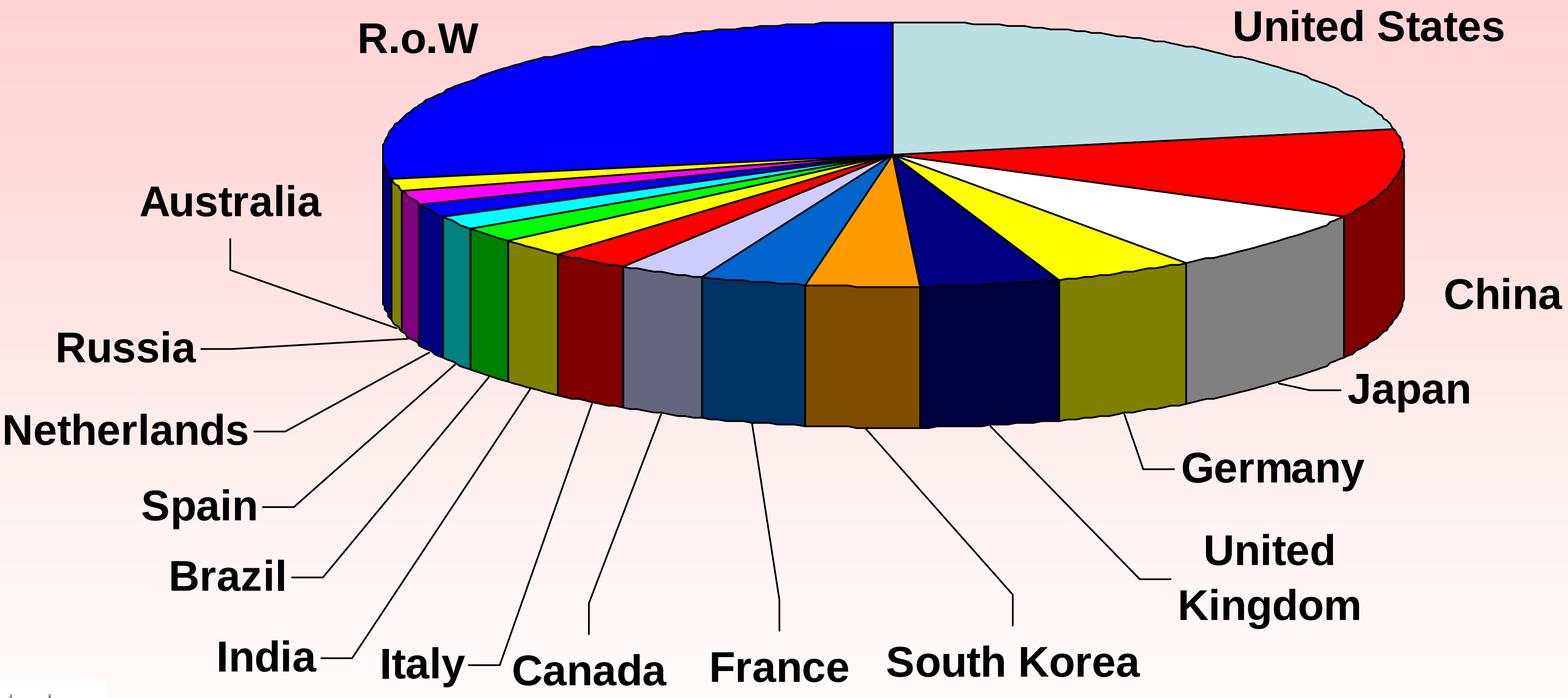
China

- Range of technologies:
  - DSL
  - cable modems
  - wireless
  - fibre to the premises
- Massive growth (~1 million each month)
- Now probably a larger market than the USA
- Complements mobile:
  - 400 million 2G
  - soon 100 million 3G



Internet population



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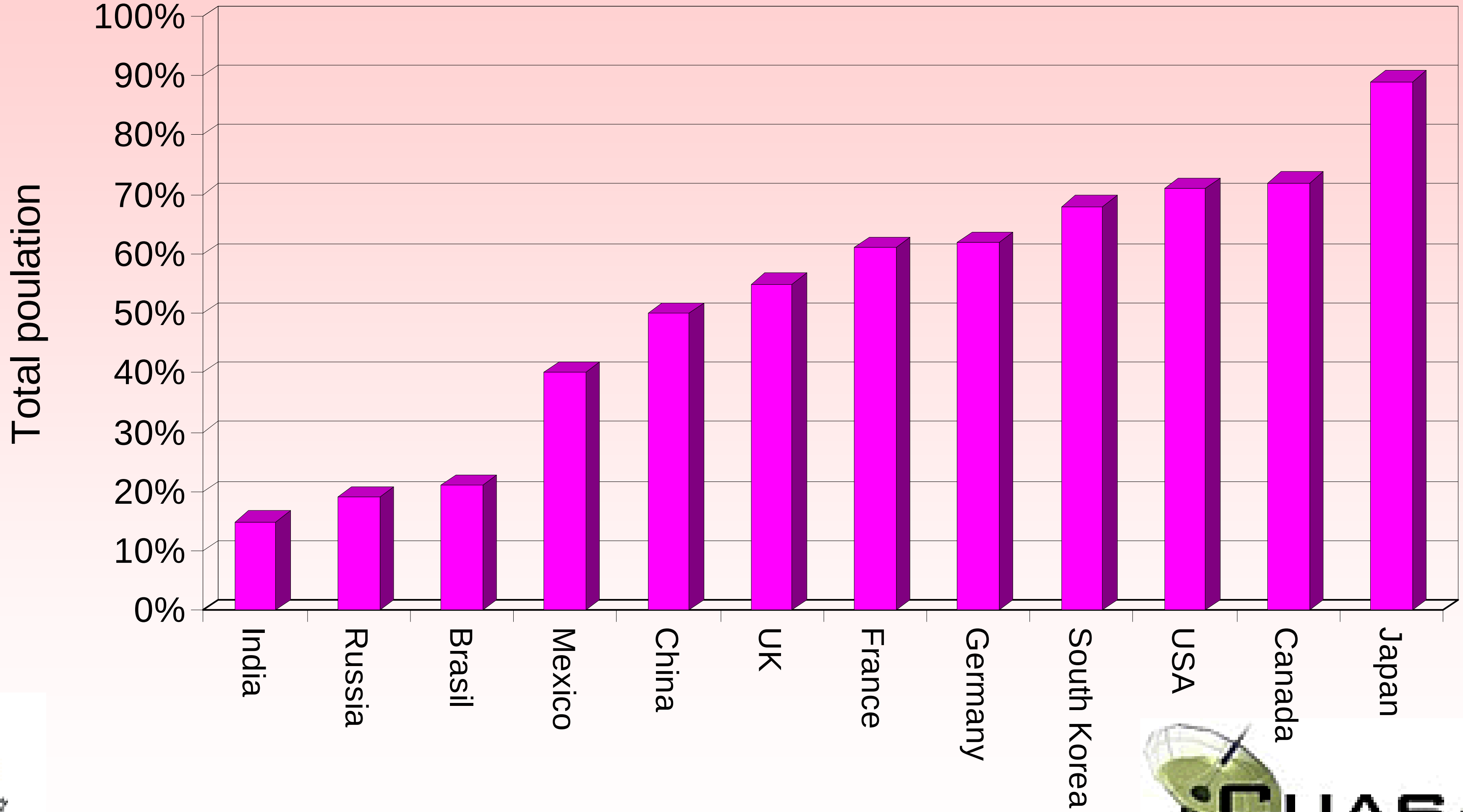
Internet usage in last 30 days



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http://www.ipsos-na.com/news/pressrelease.cfm?id=3030

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An Internet of things

- Any time, any place, any network, any object
- Adding objects to the Internet:
  - sensors
  - RFID tags
- Now we can have:
  - person to person
  - person to machine
  - person to object
  - machine to machine
  - machine to object

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Japan-Korea

- Ubiquitous Network Society (UNS)
- An evolving government-industry consensus
- A major economic driver
- Creation of a range of new:
  - devices
  - services
- The necessity of competing with China

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Ladders of investment

- Start small and build up:
  - customers
  - brand
  - revenue
- However, ladders change rapidly with:
  - time (voice to ADSL to fibre)
  - geography (city to rural, each country is different)
- They are also differences between business and consumer markets

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Significant risk of regulatory capture. When NRAS believe in their “products”, they become a “supplier” to new(er) entrants.

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Pimp my loop

- Blatant opportunism of the incumbent operators
- They are asking governments to shelter them from competition
- Some governments actively pander to their incumbent operators
- Are incumbents abusing their market power?
- Will they drive innovation to other networks and other countries?
- Do Telcos have a record of innovation and partnerships with innovators?

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http://www.mtv.com/onair/dyn/pimp_my_ride/series.jhtml

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Asking for more

- Will consumers not pay enough to recover the investment?
- Is the Internet peering and transit model broken?
- Does it need to be a two-sided market?

"They don't have any fiber out there. They don't have any wires. They don't have anything ... they use my lines for free -- and that's bull. For a Google or a Yahoo! or a Vonage or anybody to expect to use these pipes for free is nuts!" Edward Whitacre, CEO

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America de-unbundles

- Telecommunications Act 1996 created unbundled network elements (UNE)
- FCC ran into severe problems in the courts
- It withdrew unbundling obligations for “deep fibre” and then for copper
- The outcome of this is still uncertain
- xDSL market has heavily consolidated
- USA has been unusual in having cable modem suppliers with more than 50% of broadband
- Nonetheless, it is a high risk strategy

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Microsoft bundles

- A long and complex problem in competition law, through bundling of:
  - browsers
  - music players
- Clearly Microsoft is very dominant, but does it abuse that position?
- United States *versus* Microsoft
- European Commission *versus* Microsoft
- South Korea *versus* Microsoft
- Japan *versus* Microsoft
- Cases that take years, even decades to resolve, by which time most of the competitors are out of business

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New Zealand

- Vertically integrated incumbent operator from the shores of Australia and the USA to the rural farmhouse
- Weak and unchallenging competitors
- Ineffective and slow politico-regulatory regime
- No evidence of competitive entrants, because:
  - there are no economies of scale for rivals
  - there are no neighbours
  - the market is small and remote
- The problem is not regulation or its absence, but uncompetitive market structures
- One (expensive) option would be to renationalise TCNZ
- Alternatively they could move to a regulated monopoly
- Local loop unbundling comes so late it could be irrelevant:
  - the only hope lies in quadruple play from Vodafone
- Without a dramatic change in the market the prospects of moving up the rankings are all bleak

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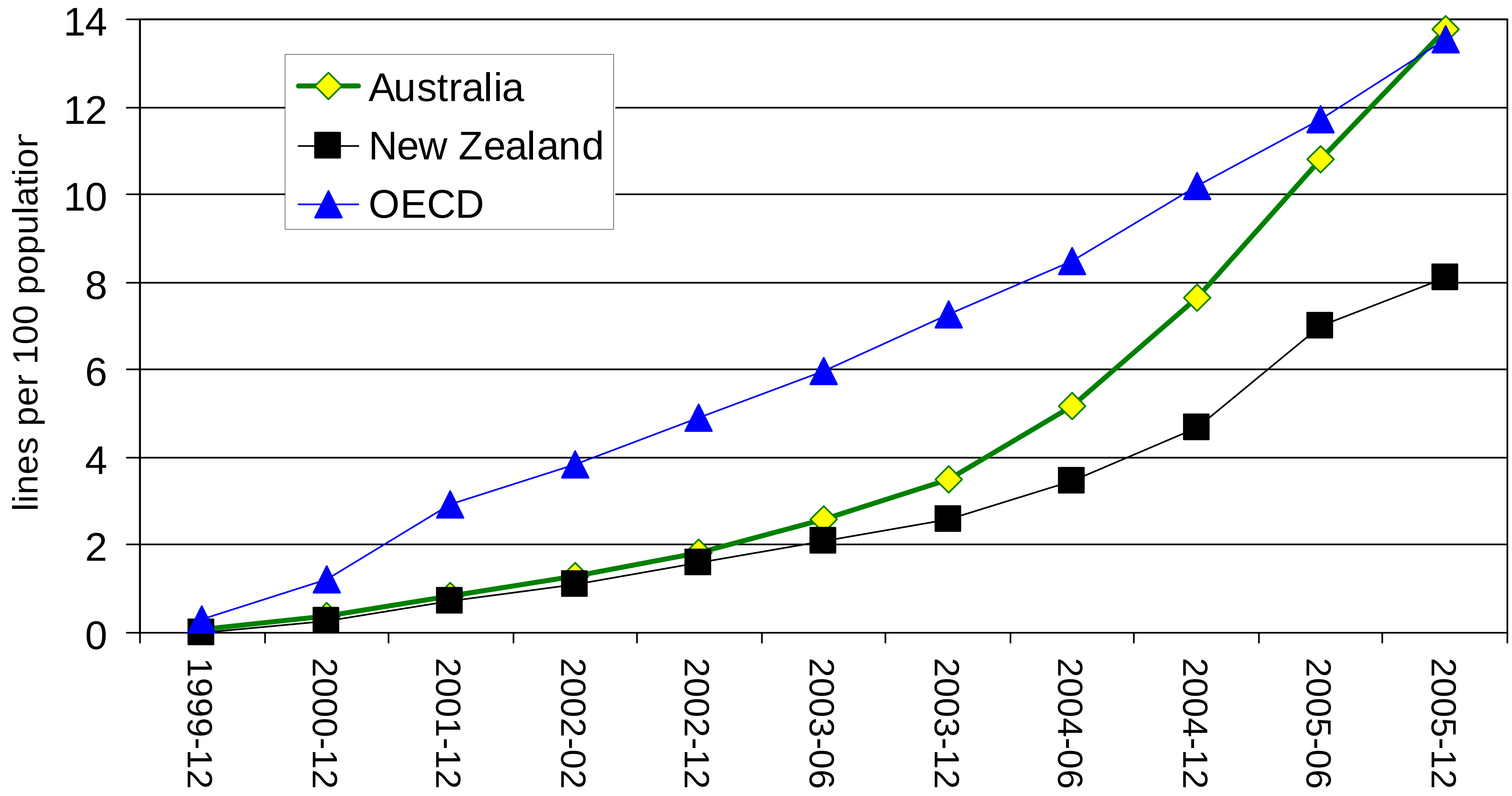
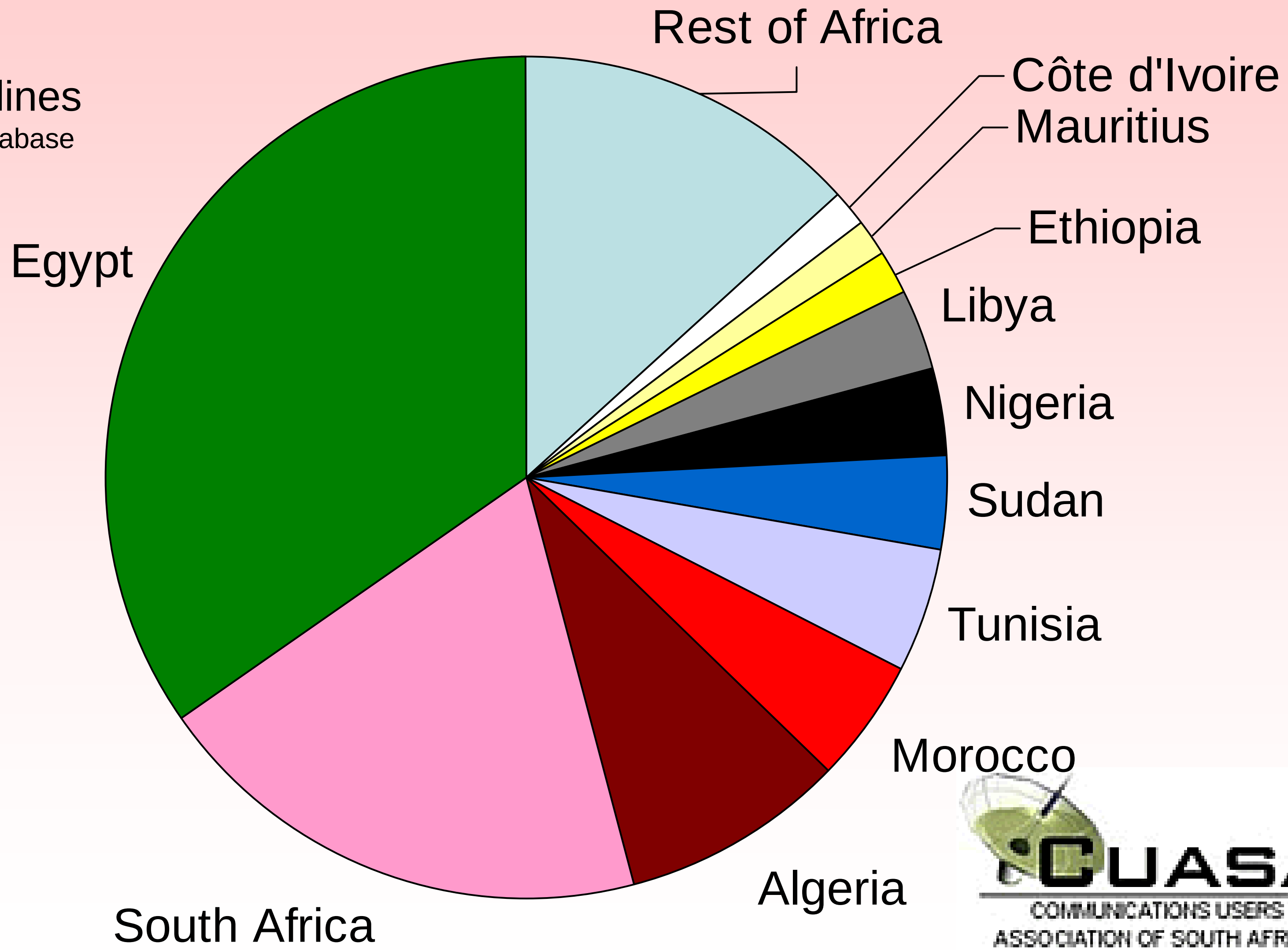
Trans-Tasman comparison



Africa fixed networks

Total 25,250,000 lines
Source: ITU Telecoms Database



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If not existing copper then what?

- Lay more copper wires:
  - is there a business case?
- Fibre:
  - needs economies of scale
  - expensive
  - uncertain business models
- Wireless services:
  - cellular (beyond 2G)
  - Wireless Local Loop (WLL)
  - Fixed Wireless Access (FWA)
  - WiMAX and WiBro

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450 MHz

- Mostly CDMA, also some FLASH-OFDM
- Wider coverage
- Fewer base stations
- Lower cost
- Better in-building penetration

- Czech Republic - Eurotel
- Romania – ZAPP (with pre-paid pricing)
- Russia – VolgaTelecom
- Argentina – Cotecal
- Indonesia – Mobisel

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There is no business model

- African telecommunications is dominated by one business model:
  - pre-paid voice and SMS
  - high inbound call termination rates
- But voice is moving towards flat rate charges
  - all your calls for EUR 7 per month
- Will customers pay:
  - a reasonable monthly fee?
  - for additional services?
- Who is experimenting with new business models?

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Conclusions

- Countries continue to show wide variations in broadband performance
- Some are slipping back
- Competitive markets get faster speeds and more attractive bundles
- There is no “one size fits all” model of competition
- Fibre is being deployed near the home and is changing consumer behaviour
- Incumbent operators are still trying cheap political games to wound, to maim and to kill their competitors

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World class

- Cheap and affordable
- 1 Gbps to the home
- Wireless networks in the home to redistribute
- WiMAX when nomadic
- 3G when on the move
- Flat rate or bundled VoIP
- RfID tags and ubiquitous sensor networks
- It is all of the above, not just one

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Thank you

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