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CUASA, Johannesburg 22 X 2002

www.INTUG.net

Broadband and VoIP regulatory issues

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INTUG contents

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broadband

- basic competition had been achieved
  - core networks
  - Carrier Selection and Carrier Pre-Selection
- wanted something more
- major policy push to competition into the local loop
  - USA
  - European Union
- has become a very fast race

INTUG problems

- complex arguments and delays, e.g.,
  - insurance
  - security
  - price levels
- price squeeze complaints:
  - retail offer of incumbent too close or below wholesale offcer
- very few customers getting broadband over LLU/UNEP
  - exception is Denmark

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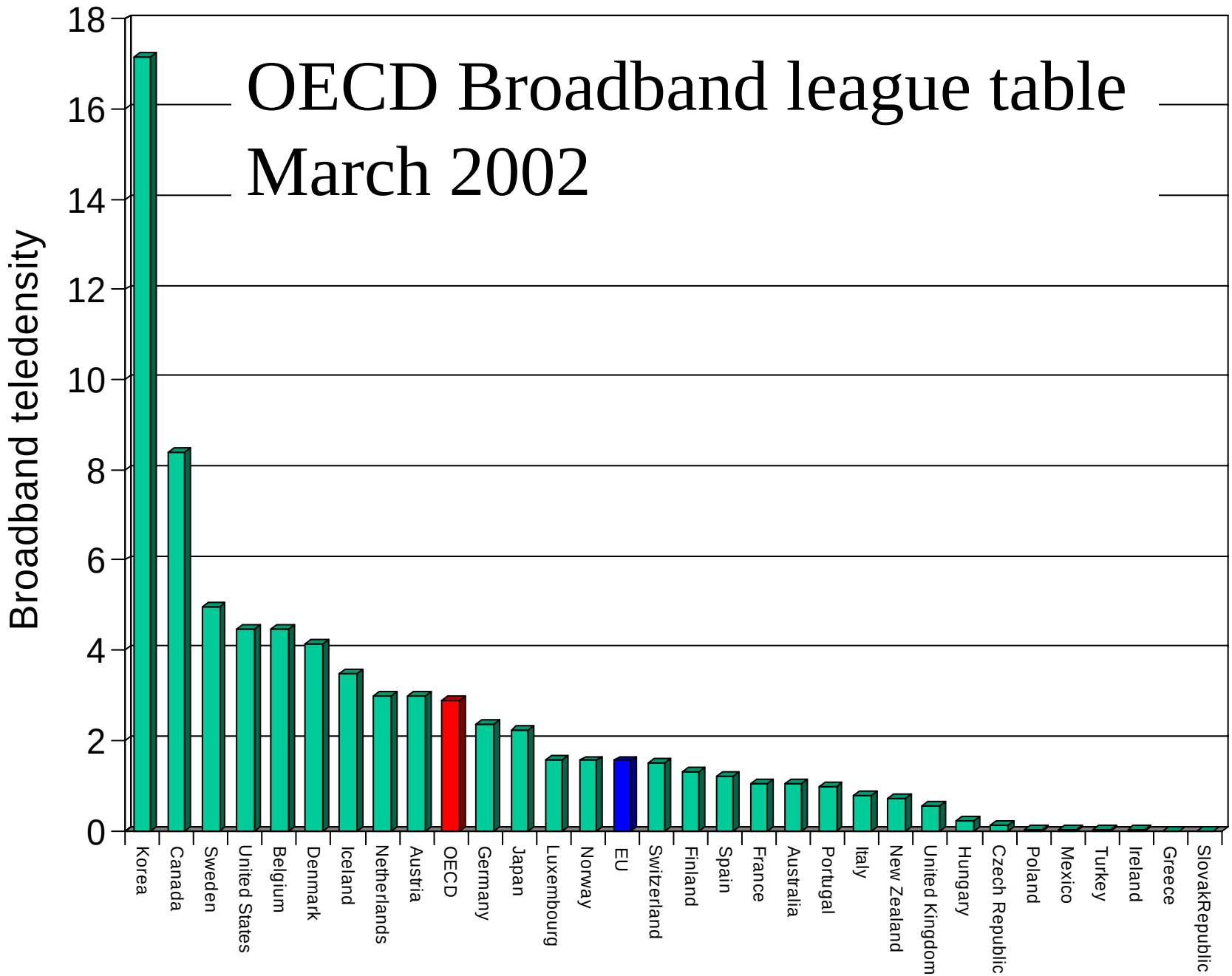
OECD Broadband league table
March 2002
Broadband teledensity
0
2
4
6
8
10
12
14
16
18
Korea
Canada
Sweden
United States
Belgium
Denmark
Iceland
Netherlands
Austria
OECD
Germany
Japan
Luxembourg
Norway
EU
Switzerland
Finland
Spain
France
Australia
Portugal
Italy
New Zealand
United Kingdom
Hungary
Czech Republic
Poland
Mexico
Turkey
Ireland
Greece
SlovakRepublic

South Korea

- world leader, seemingly from nowhere
  - wireless with CDMA 2000
  - broadband
    - Cable modems
    - xDSL
- same GDP/capita as Egypt in 1950s
- wireless equipment has overtaken cars as second most important export
- strong industrial policy

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Korean industry policy

- 10,000,000 broadband users by end of 2002
  - 1M bps is ADSLite
  - 4M bps for video on demand
- policy target is "20M bps to the home by 2008"
- building a networked games industry
- extensive e-government services

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infrastructure competition between PSTN and cable

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- is the ownership of cable networks and the PSTN fully separated?
- is the incumbent telco offering broadband services?
- are the cable television companies offering broadband services?
- can more cable television licences or franchises be issued?

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other technologies?

- has the spectrum been assigned and licences granted for FWA/WLL?
- have rights of way issues been resolved to allow ETTH/ETTB?
- have rules for cables in shared buildings been reviewed?
- has spectrum for WLAN been made freely available?
- will services on 3G integrate with fixed broadband?

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INTUG is the market dynamic?

- does the incumbent telco dominate the wholesale DSL market?
- are SDSL, VDSL, etc being rolled out?
- are incumbent operators using price squeezes and other anti-competitive practices?

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INTUG content

- is there a need to support content creation?
- are minority languages and cultures adequately represented?
- is Hollywood correct is denouncing Silicon Valley as the purveyor of piracy as the killer application for its hardware?

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economic benefits

- do we have case studies?
- do we have time-series data?
- is it all speculation and guesswork?
- are we better sticking to POTS?

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VoIP basic issues

- few, if any, laws or rules written for IP concepts
- not included in WTO commitments
- there are many different forms of IP telephony
- no single, stable definition
- not easy to ensure consumer protection (e.g. QoS)
- rapid changes in technologies and markets
- adds to existing problems of traffic exchange and interconnection for
  - PSTN
  - Internet

advanced regulatory issues

- conference calls (may be web-assisted)
- video-calls (does one video frame count?)
- Instant Messaging (IM)
- voice over IEEE 802.11
- Internet access calls change the loading on the PSTN affecting other regulation:
  - tariff re-balancing
  - network design
- taxation

INTUG issues for NRAs

- does IP telephony need to be regulated?
- do secondary effects require regulation?
- are all forms of IP Telephony the same?
- do existing obligations apply? (e.g. QoS)
- how do you ensure access by police?
- do you need special telephone numbers?
- do you need special class(es) of licence?
- how do you regulate interconnection?

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ITU special forum 2001

- noted effects of cheaper tariffs on operator revenues
- sought to avoid additional load on PSTN networks when connected to IP networks
- asked how to meet the performance metrics, and traffic identifications when IP and PSTN interwork
- asked how to generate the investment for IP networks
- raised numbering and addressing issues

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INTUG ITU-BDT advice

- evaluate broader policy goals before determining regulation for a converged market
- competitive models have attracted capital investment for telecommunications
- customer benefits are greatest where there are no limits on the number of suppliers and services
- where the market does not provide services to a certain subset of users, government-sponsored universal access/service programs may be helpful.

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ITU-BDT policy advice

- allowing choice of technology by users among different prices and qualities are more likely to encourage investment and stimulate development
- in competitive markets, consider taking a technology neutral approach
- allow the coexistence of multiple network technology platforms and encourage their interconnection

ITU-BDT quality

- three quality classes at the end-to-end of IP telephone service have been defined as
- Class A- level to fixed telephones
- Class B - level to mobile telephones
- Class C - quality below Class B, but acceptable for voice communication

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United States of America

- regulates "telecommunications services" as common carrier:
  - local telephony
  - long distance telephony
- does not regulate "information services" including:
  - electronic mail
  - Internet access
- based on the history of these sectors

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Stevens Report - 1998

- where both ends are telephones, IP telephony has many characteristics of a telecommunications service; however, work on a case-by-case basis.
- where at least one end is a computer, IP telephony should not be viewed (at present) as a telecommunications service.
- IP telephony does not directly contribute to the Universal Service Fund (USF), but underlying components (e.g., private lines) do; thus, IP telephony does not necessarily generate a net reduction in the USF.

IP telephony serves the public interest by placing significant downward pressure on international settlement rates and consumer prices.

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Florida Public Service Commission

Due to the increased Internet traffic and the evolution of new applications, such as Voice over Internet Protocol (VoIP), new pricing challenges now exist in the telecommunications industry. As the clarity and quality of VoIP approaches that of the Public Switched Telephone Network (PSTN), this technology will be increasingly used as a substitute for traditional telephone service. The pricing of this service will ultimately determine the degree to which this service emerges as a threat to traditional telephone service. With consumer choice between PSTN and VoIP, the competitive effects of current pricing regulations need to be examined to ensure the growth of new technologies as well as existing networks.

White Paper on Internet Pricing: Regulatory Implications and Future Issues. September 25, 2000

USA - VoIP

- unregulated and thus avoids:
  - paying RBOCs ~2.5c/min access charge for call origination
  - direct contributions to universal service
- strong advocacy against regulation
- RBOCs lobbying to preserve revenues
- included in House bills (n.b. HR 1542) aimed at a “level playing field”

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INTUG existing EU position

- Internet voice services could, in principle, not be considered as voice telephony, because they do not meet *simultaneously* the elements of the definition in the Services Directive:
  - voice telephony is offered commercially
  - it is provided for the public,
  - it is provided to and from public switched network termination points, and
  - it involves direct speech transport and switching of speech in real time at the same reliability and quality as produced by the PSTN
- consultation in 2000 left this unchanged

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UK - OFTEL

- VoIP should be regulated as public voice telephony if *any* of the following apply:
  - marketed as a substitute for traditional PSTN voice services; or
  - appears to the customer to be a substitute for public voice telephony; or
  - provides the customer's sole means of access to the traditional circuit switched PSTN.
- However, where VoIP is clearly an adjunct to a traditional PSTN or a secondary service, it is likely not to be considered as public voice telephony.

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INTUG new EU legislation

- from 25 July 2003
- defined markets ***not*** technologies:
  - call origination
  - call termination
  - access
- excludes “emerging markets”
  n.b. not emerging technologies
- extremely unclear where IP fits

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ITU on developing countries

While some developing countries have policies prohibiting IP Telephony, others have policies embracing it. Some do not regulate IP Telephony at all, while others have chosen to include it in a positive manner within their telecommunications regulatory framework.

INTUG developing countries

- long running problems with alternative calling procedures
  - callback
- IP telephony seen as a real threat
  - no alternative source of hard currency
  - being resisted by many countries
- powerful arguments on digital divide

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INTUG Sri Lanka

When VOIP started in Sri Lanka other voice telephone operators lost their revenue. Therefore they took legal action against data operators. But in Sri Lankan regulatory structure VOIP is not indicated in the legislative framework. It was a crucial issue at that time… When VOIP [was] introduced most of the people went towards VOIP from voice telephones because it is much cheaper, specially in case of international calls.

TRC of Sri Lanka to ITU-T SG1 Q.10 Sep. 2002

INTUG India

- Indian Telegraph Act 1885
- liberalisation of a sort in March 2002
  - out-bound VoIP
  - in-bound and out-bound SIP
- ISPs were required to obtain new licences with possible future obligations:
  - “revenue sharing” i.e. a tax
  - Quality of Service
- yet VoIP cannot be distinguished from voice over/with instant messaging

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universal and rural access

- major political concerns:
  - universal service
  - service in rural areas
- generally “funded” by the incumbent
- telephony settlement rates are a major source of revenue
- IP telephony may reduce already very limited capacity to develop the network
- but can also reduce the costs

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Internet connectivity

- a.k.a. International Charging Arrangements for Internet Settlement (ICAIS)
- developing countries looking for money
- continuing debate and dispute at:
  - ITU
  - CITEL
  - APECTEL
- stark contrast between PSTN and Internet models

PSTN *versus* Internet

- old established principles
- massive net payments ***to*** LDCs (but declining)
- pay for half-circuit

- new deal
- massive net payments ***by*** LDCs
- pay for leased line to IX
- pay for exchange of traffic at IX
- lack of local IXs

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ITU-T Recommendation D.50

administrations involved in the provision of international Internet connections negotiate and agree to bilateral commercial arrangements enabling direct international Internet connections that take into account the possible need for compensation between them for the value of elements such as, *inter alia*, traffic flow, number of routes, geographical coverage and cost of international transmission;

INTUG conclusions

- broadband a fast race
- the economic case is still vague
- killer applications uncertain
- Infrastructure competition works
- many countries see IP telephony as a threat
- it adds to the ICAIS problem
- there is no agreement on global best practice

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INTUG thank you

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