

INTUG



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global leadership in telecommunications

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INTUG contents

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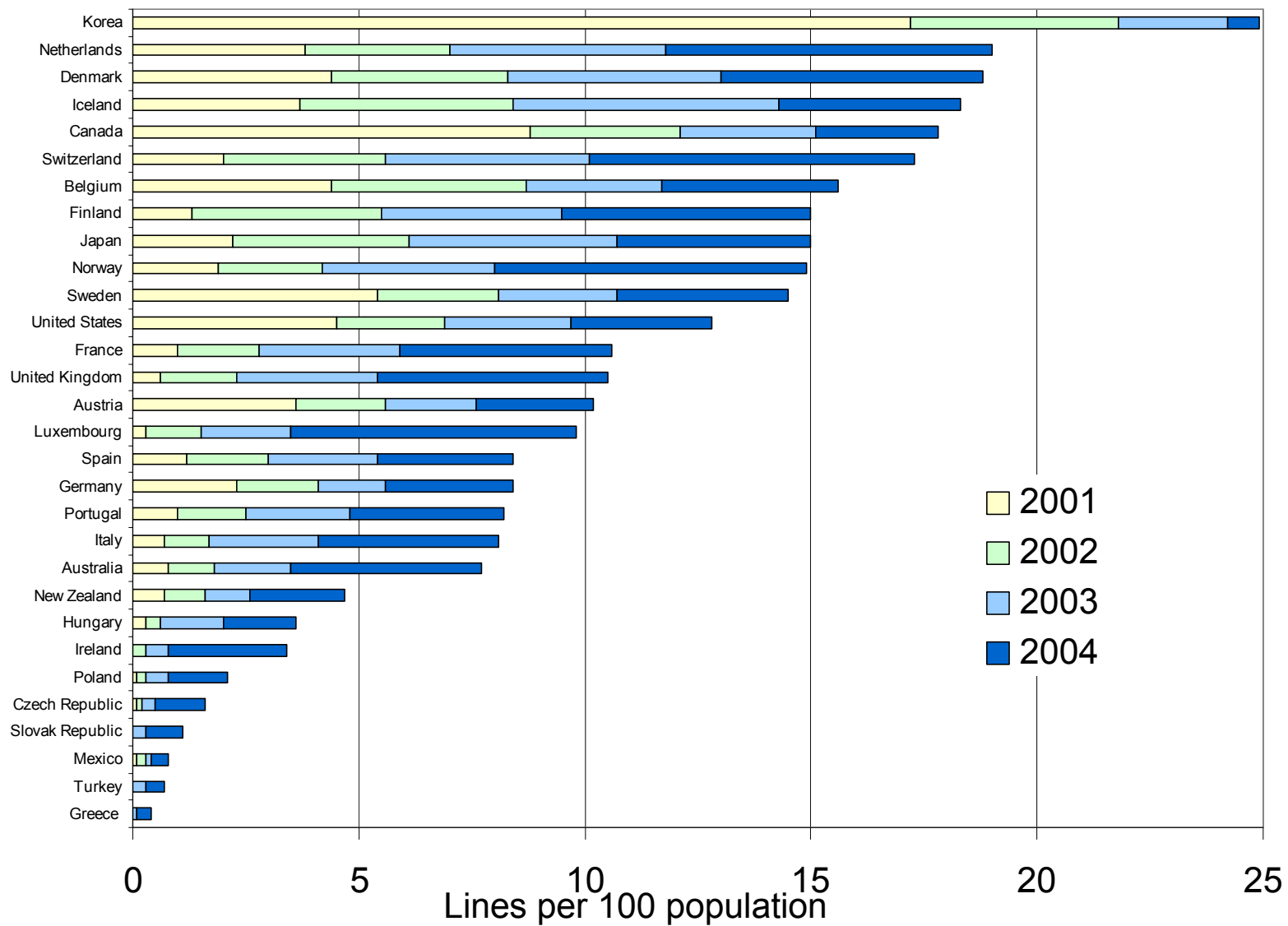
INTUG broadband

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- residential access predominates
- business access becomes a niche:
 - SDSL, SLA, etc
- enables remote access, especially telework
- enormous and poorly explained variations between countries

INTUG broadband in the OECD

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INTUG broadband in Japan

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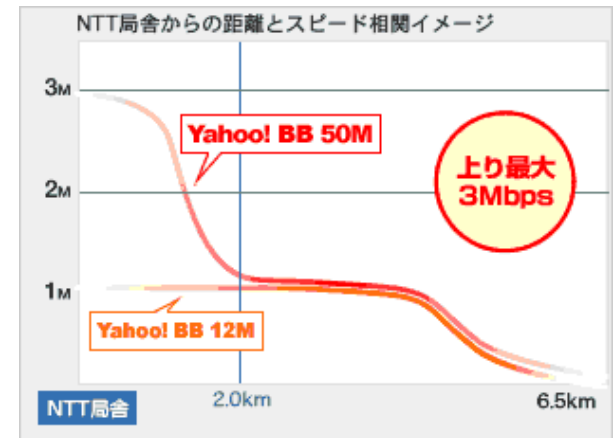
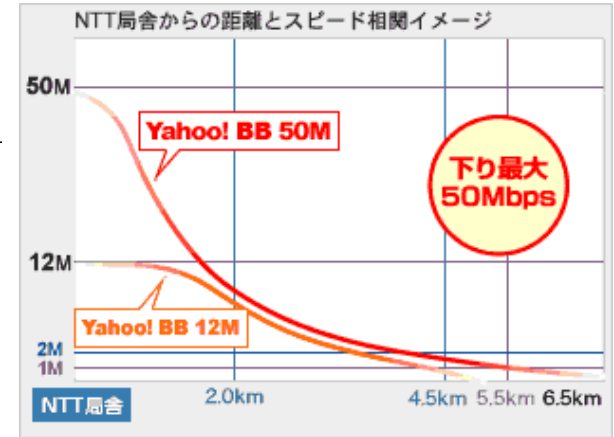
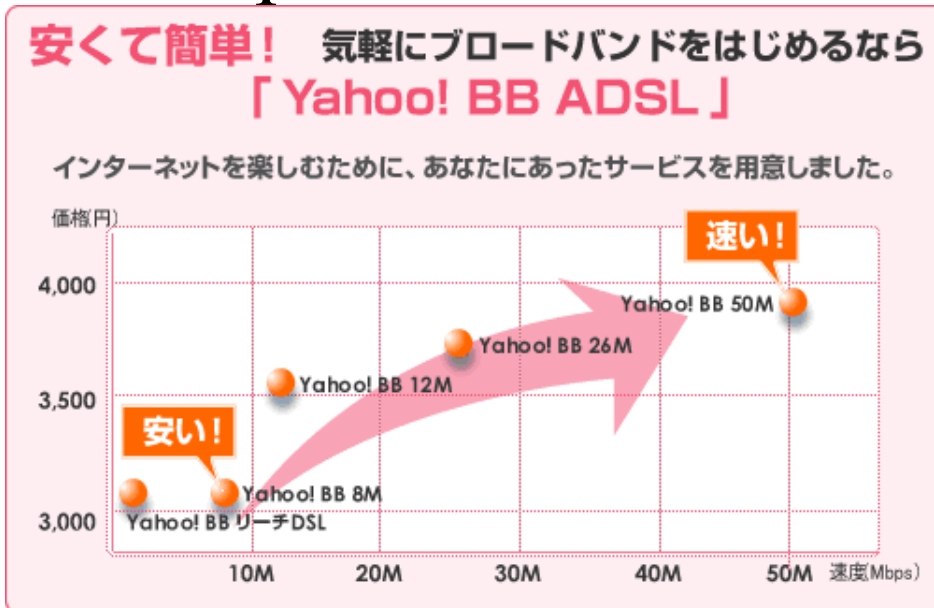
- rushing to catch up with South Korea
400,000 additions each month
- competition from Softbank and Yahoo! BB
- low prices JPY 4,000 to JPY 6,000
- high speeds: 10, 50, 100 Mbps
- option of 802.11g Wi-Fi residential gateway, creating a market for new domestic devices

1 ZAR = 17.24 JPY

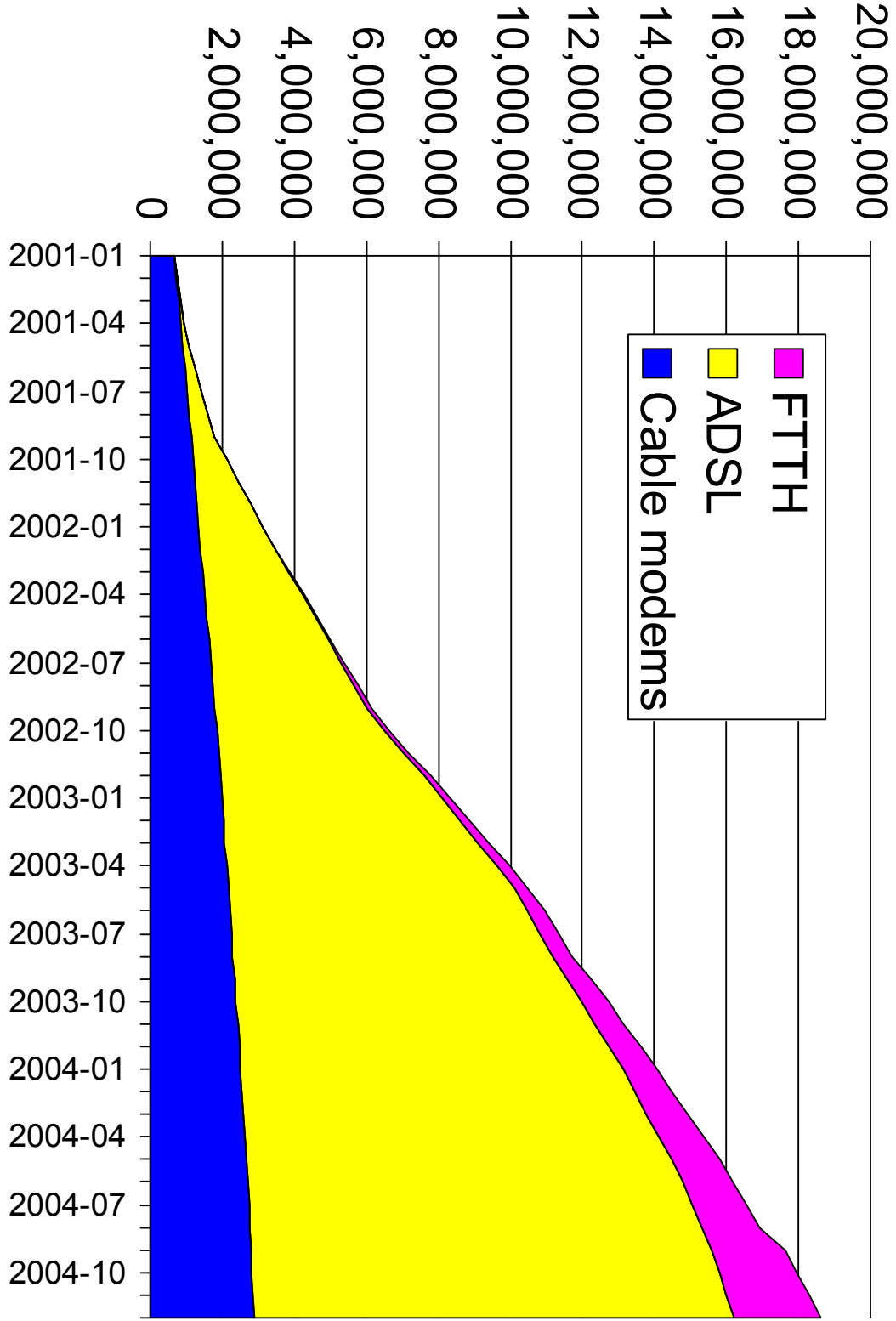
INTUG Yahoo! BB

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- 50 Mbps downstream
- 3 M bps upstream
- plus BB phone
- plus IP TV



INTUG broadband in Japan (lines)



INTUG broadband in Africa

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- Egypt ADSL
 - 256 kbps 150 LE (ZAR 130)
- Morocco Maroc Telecom
 - 128 kbps 359 Dh (ZAR 262)
(limit 750 MB per day)
 - 512 kbps 1609 Dh (ZAR 1174)
limit 2.5 GB per day
- South Africa - Telkom
 - 192 kbps ZAR 270
 - 512 kbps ZAR 477

EGP 0.8690 = 1 ZAR = 0.7302 MAD

INTUG mobile was to be competitive

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- there would be additional players
- the operators proclaim fierce rivalry
- however, it was crucial to identify and analyse specific markets:
 - call termination
 - call origination
 - international mobile roaming
- these proved much less competitive or entirely uncompetitive

INTUG call origination and access

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- theoretically a competitive market
- after detailed analysis found not to be competitive in Ireland and France:
 - two large operators and one small
 - joint dominance of the two large
- the remedies were agreements for:
 - mobile virtual network operators
 - national roaming

INTUG Ireland - mobile origination

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- analysis of the market found two operators (Vodafone & O₂) with:
 - 94% of volume and 97% of revenues
- opinions of:
 - public, business and operators
 - national competition authority
 - European Commission other NRAs
- obligations imposed on Vodafone and O₂
- presented to *Oireachtas*

<http://www.comreg.ie/publications/default.asp?nid=101898&ctype=5>
http://www.comreg.ie/_fileupload/publications/OCP01.pdf



INTUG France - mobile origination

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- the same process as Ireland, but some weeks later
- similar problem with SFR and Orange strong, but a weak Bouygues
- formal remedy was avoided by mobile operators agreeing to MVNO deals, e.g.:
 - NRJ – pop music FM radio station
 - Breizh Mobile – for Brittany
- being kept under review

<http://www.arcep.fr/communiqués/communiqués/2005/index-c05-25.htm>

INTUG MVNOs

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- some commercial agreements
- some pushed by regulation
- new brands that extend the market:
 - no operator can address all segments
 - wholesale can be profitable for operators
- has made telephony more affordable:
 - Virgin Mobile (US, UK, AU, CA)
 - EasyMobile (DK, NL and UK)
- some plan to leverage content:
 - Disney (cartoons and ESPN/sport)
 - Extrememob.com (extreme sports)
 - Movidacelular.com (Hispanic)



INTUG 3G

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- revenue was supposed to come from:
 - location based services
 - streaming entertainment
- where is that business model today?
- increasing challenges from:
 - Wi-Fi and WiMAX
 - DAB and DMB
- what is the “added value” of cellular?

INTUG pre-paid services

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- ideal for low ARPU
- drives the pursuit of lower costs
- stout defence of existing revenues:
 - mobile termination rates
 - international mobile roaming rates
- search for new revenues:
 - ring-tones and screen logos
 - banking transactions
 - adult content

INTUG payment systems

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- can add items to monthly bill or deduct from stored credit
- contactless payment systems:
 - Japan - FeLiCa (Sony & NTT DoCoMo)
 - South Korea – SK Telecom Moneta & NeMo
 - Thailand – AIS and DoCoMo
 - what is the value of inclusion in the handset?
- technology neutrality, so banking regulations must apply
- mobile operators are keen on this new revenue stream to supplement low ARPU

<http://www.mobilepaymentforum.org/>

INTUG 450MHz services

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- originally used for 1G voice: Nordic Mobile Telephony (NMT)
- now being recycled as broadband:
 - CDMA
 - FLASH-OFDM
- good coverage for rural areas
- if strong adoption continues, prices of equipment will fall significantly

INTUG WiMAX

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- a potentially highly disruptive bunch of technologies
- will not be one business model
- adds to the present successes of WISPs
- requires opening up of spectrum:
 - to get benefit of low cost equipment must be aligned with global use

<http://www.wimaxforum.org/>

INTUG Voice over IP

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- latest wave in competition in international voice telephony
- driving further price reductions
- making telephony more affordable
- VoIP is included in games consoles
- now seeing:
 - Voice over Wi-Fi
 - Voice over WiMAX

INTUG skype

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- viral marketing
- ~2.8 million concurrent users
- Skype Out at low rates:
 - South Africa € 0.055
 - SA Mobile € 0.189
- Skype In at fixed prices:
 - numbers in USA, UK, etc
 - flat annual fee €30/year

€ 1 = ZAR 7.95

INTUG USA – Pew Internet

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“In focus groups, teens described their new environment. To them, email is increasingly seen as a tool for communicating with “adults” such as teachers, institutions like schools, and as a way to convey lengthy and detailed information to large groups. Meanwhile, IM is used for everyday conversations with multiple friends that range from casual to more serious and private exchanges.”

http://www.pewinternet.org/pdfs/PIP_Teens_Tech_July2005web.pdf



INTUG instant messaging

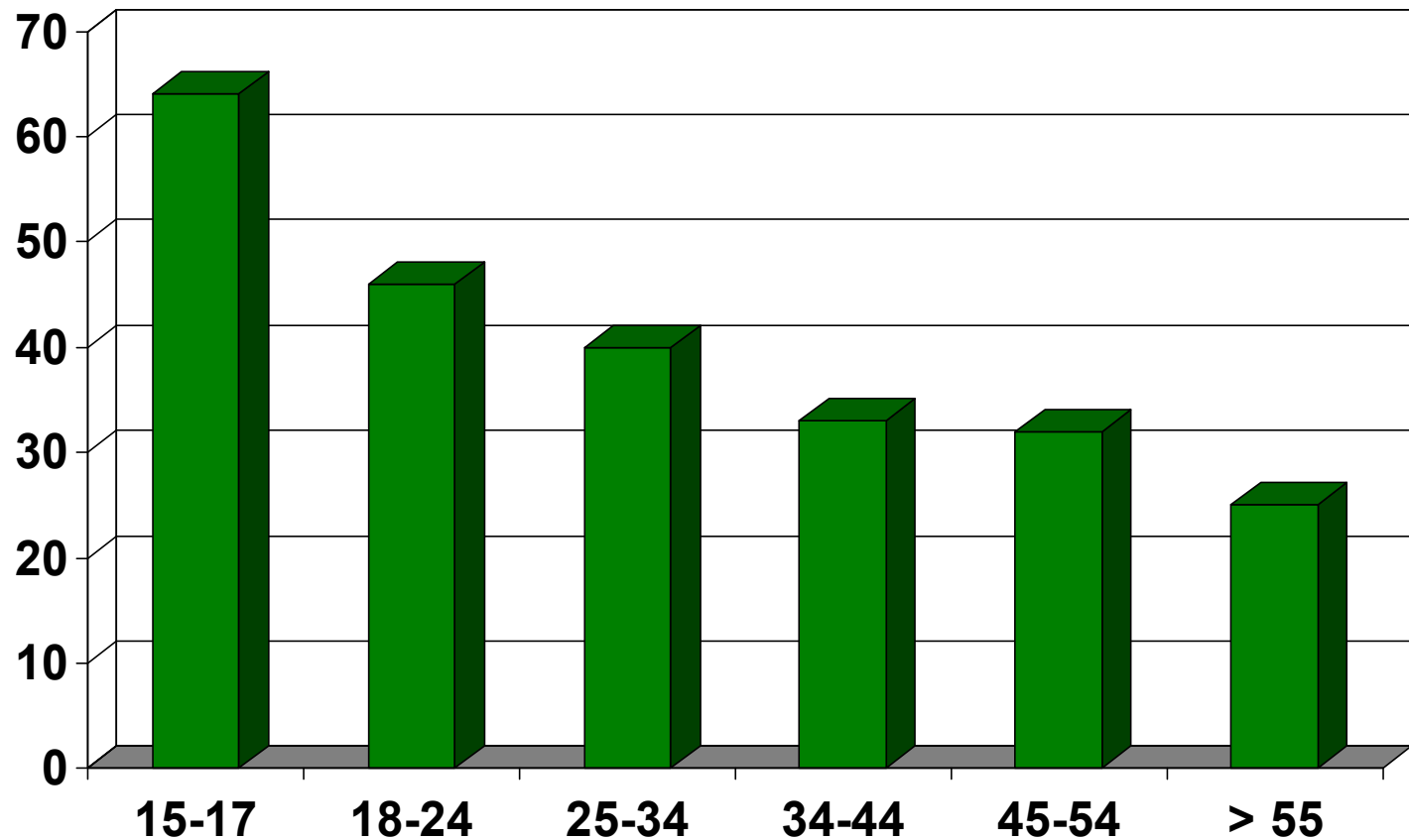
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- software application for chat:
 - more immediate
 - extended from PC to PDA, handset and games consoles
- allows you to show your availability to friends and colleagues
- slowly adopted by business:
 - needs to be secure
 - probably needs to be logged for compliance purposes
 - embedded in Skype

INTUG generation gap

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Cap Gemini: % of Europeans interested in advanced services such as picture messaging and Internet browsing.

INTUG ubiquitous network societies

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- a model for the future
- seen as a major economic driver
- Japan and Korea avoid access and interconnection issues by full-blown competition
- likely to have much slower adoption in other countries because:
 - operators will push their own networks
 - negotiation of access will be protracted

INTUG ubiquitous sensor networks

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- everything will have an RFID tag
- so networks can now serve:
 - person to person
 - machine to machine
 - object to person
 - object to machine
- raises complex privacy issues
- need to ensure consumer confidence

INTUG examples of RFID

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- traceability of food supply:
 - beef in South Korea
 - sushi in Japan
- baggage handling for airlines
- recreation:
 - drink selection and payment in bars
 - authentication for ski lifts
- refrigerators:
 - age of contents
- library stock

Controversies over passports in USA
and Gillette Mach3 razors.

INTUG conclusions

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- world class is a shifting target
- broadband and mobile lessons are well known, but poorly applied
- many anti-competitive problems to resolve
- mobile/wireless is not necessarily cellular
- economies of scale win, so we must watch China and India
- ubiquity is the most interesting model
- need to look ahead to avoid future pitfalls

INTUG thank you

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