



“INTERNET FOR A MOBILE GENERATION”

Perspectives



**Telecom Infotech Forum,
20 November 2002,
Hong Kong**

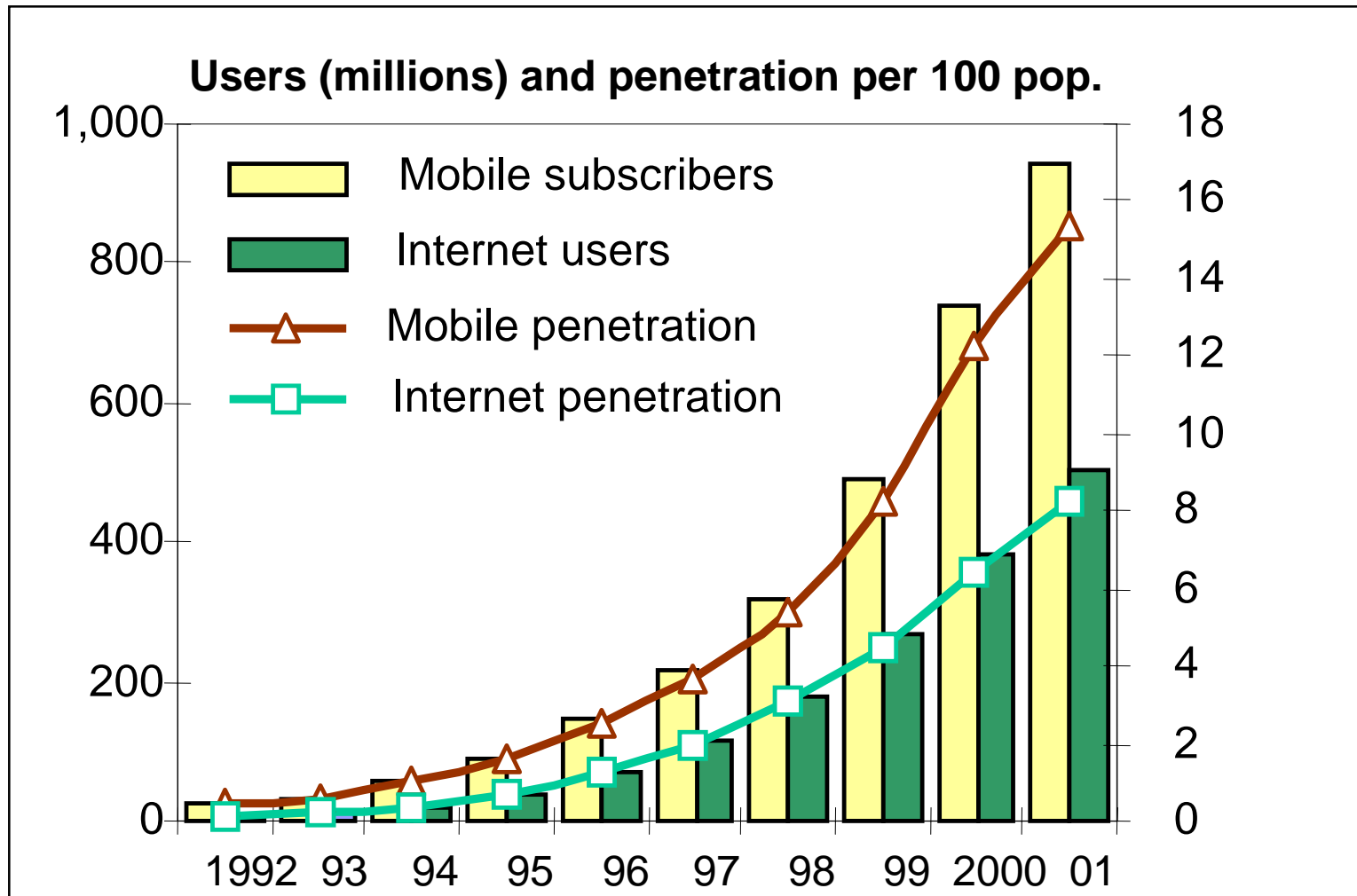


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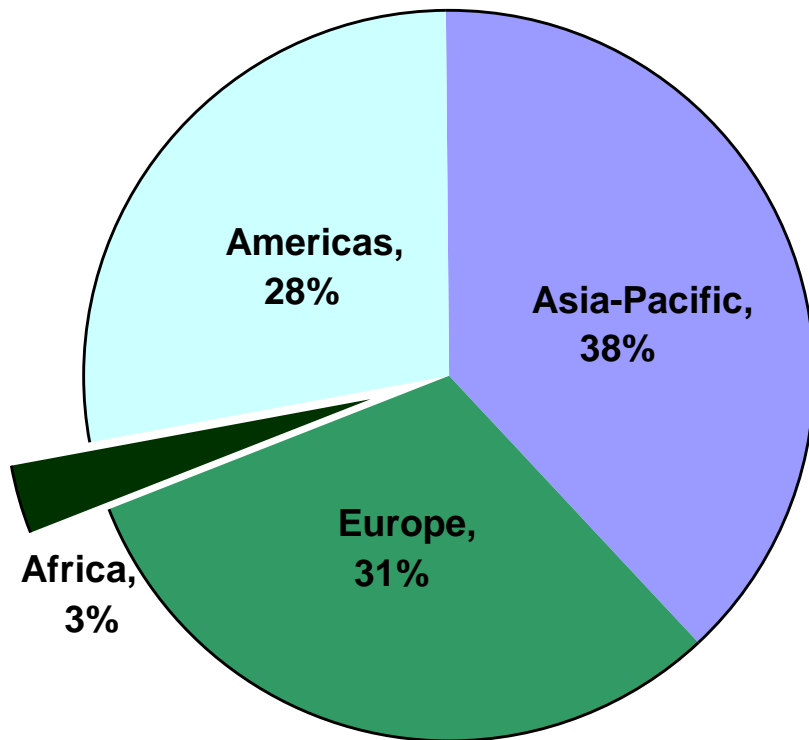
What's all the excitement?



Mobile and Internet: Identical twins born two years apart?

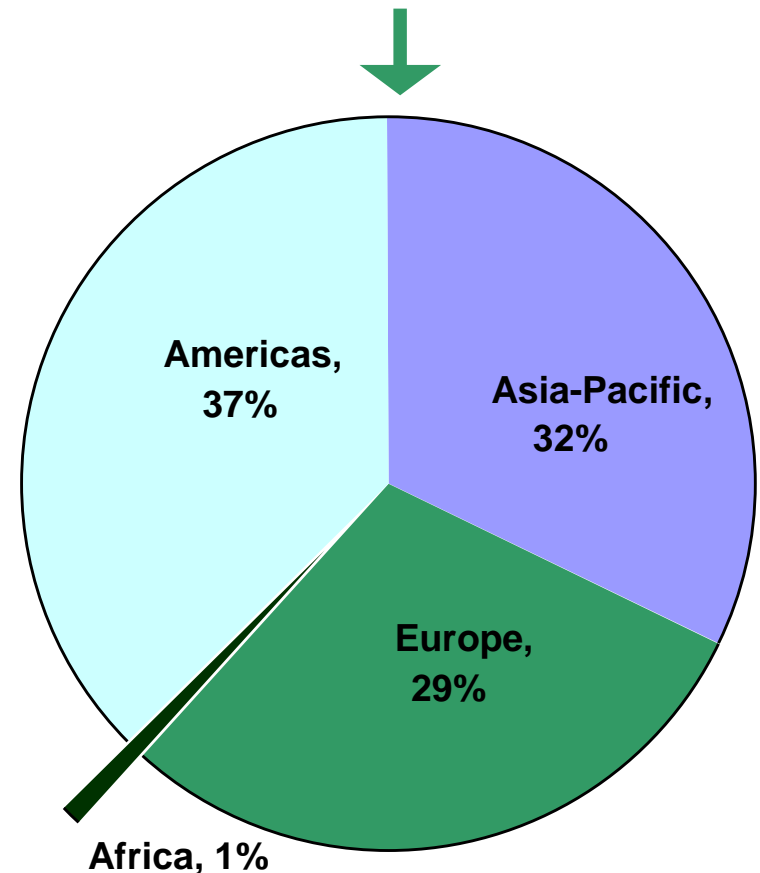


Distribution of mobile and Internet users by region, 2001



Mobile phone users
948 million

Estimated Internet users,
500 million

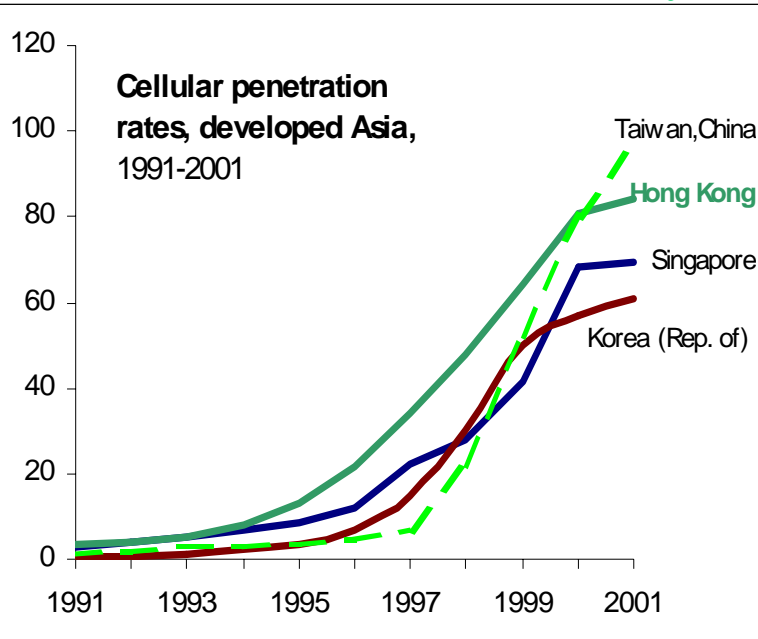


Africa, 1%



Upwardly mobile in Asia

Asian leaders in mobile teledensity



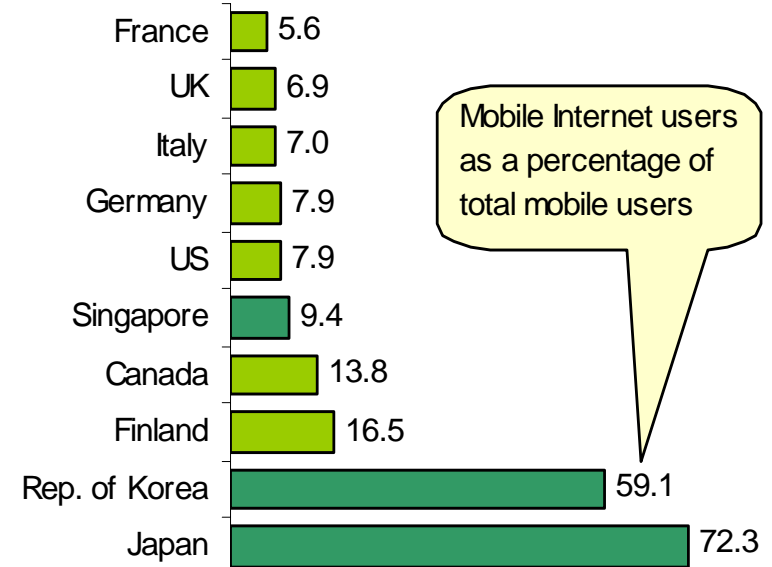
Source: ITU World Telecommunications Indicators Database



e.g. Japan:
3G FOMA phones
with i-mode
(NTT DoCoMo)

Asian leaders in mobile Internet penetration

Mobile Internet penetration, 2001



Source: MPHPT (Japan)

**Internet for a mobile
generation?**

**Mobile for an Internet
generation?**

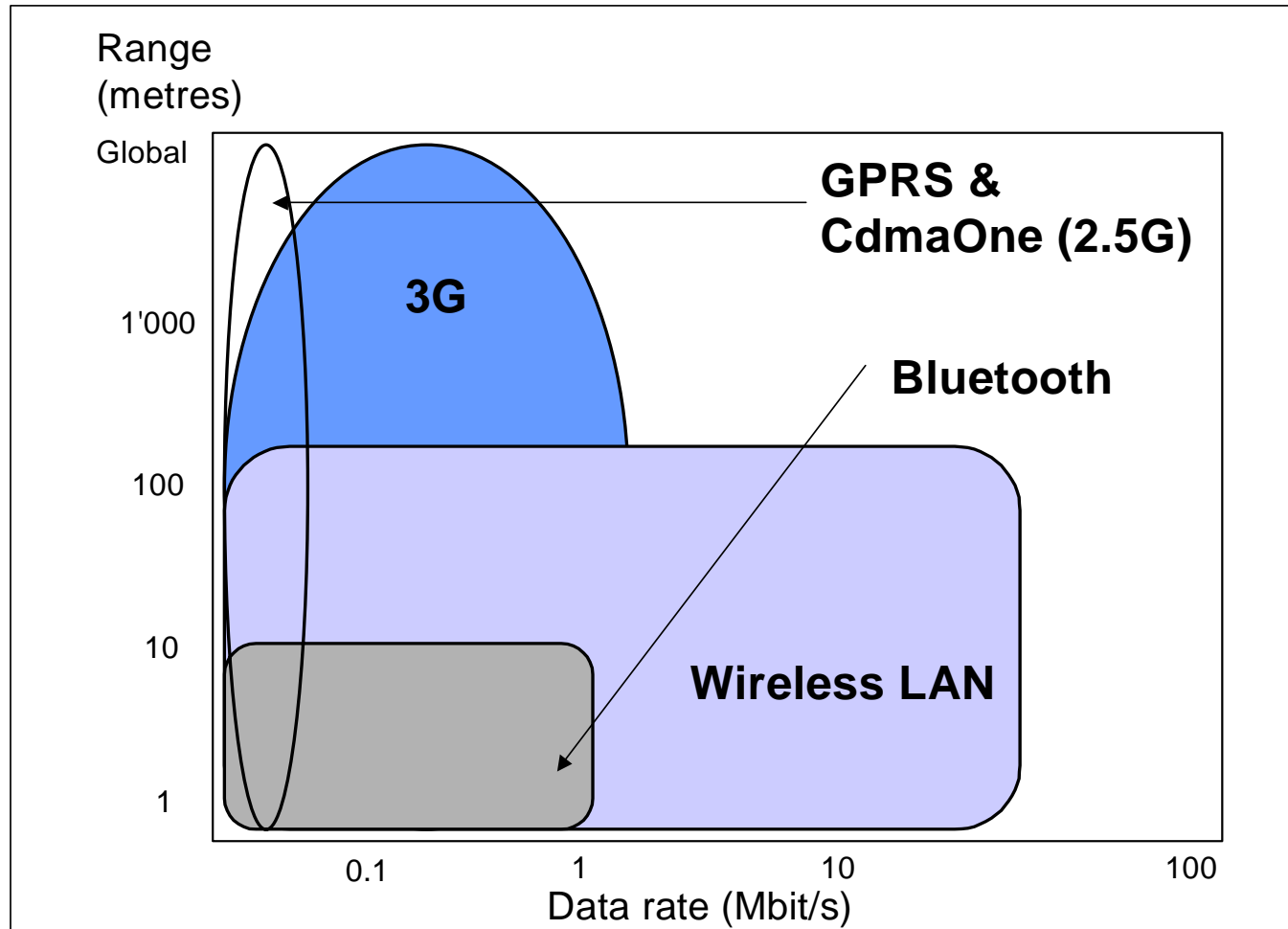


But what is the “Mobile Internet”?

- It is a combination of:
 - mobile (wireless) technologies
 - and information and data communications services
 - ...with, eventually, the flexibility of IP networks
- It implies a convergence at many levels:
 - terminals
 - networks
 - services and applications
 - corporate structures



High-speed 2.5G/3G is only *part* of the overall picture



Enabling technologies and applications for the Mobile Internet

- Network evolution: from 2G to 3G –higher speeds, increased bandwidth efficiency
- “Alternative networks”: e.g wireless LANs – IEEE 802.11 series
- Mobile connectivity protocols: i-mode, WAP...
- Messaging protocols (SMS, EMS, MMS)
- Location-based services (LBS)
- Growing importance of security (WEP, WPKI)



Strategies for market development

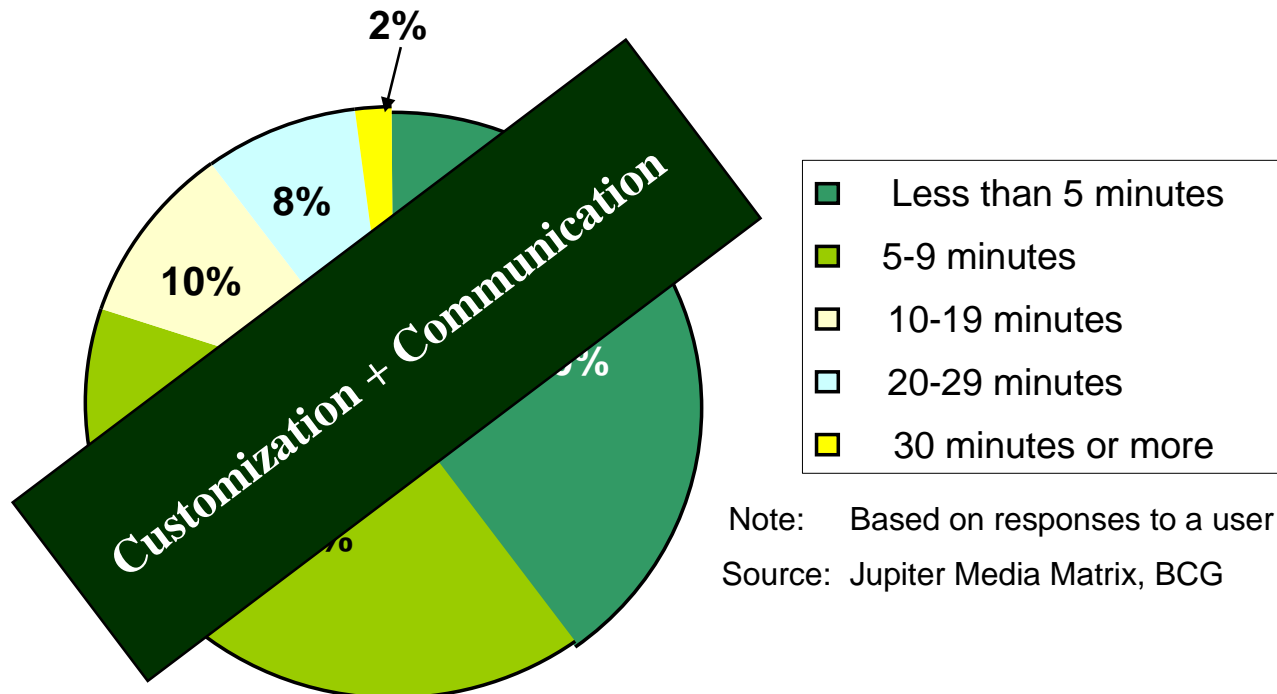
- High-demand regions
 - The ‘first-movers’: Hong Kong SAR, Japan and Korea
- Evolution of corporate strategies
- Factors hindering market development
 - Low availability of adequate handsets
 - Plethora of languages/formats/protocols
 - Lack of evolved billing models
- The economics of success
 - Avoiding pure tech-push plays
 - Promote open access platforms
 - Increase partnerships and industry collaboration
 - Encourage sharing: revenues and resources
 - Ensure transparency of tariffs



What of mobile digital content?

- User sessions tend to be short (unlike the “browsing” behaviour of the fixed-line Internet)
- Thus, “killer app” cannot be pure content

Average length of mobile data sessions, 2001



Note: Based on responses to a user survey

Source: Jupiter Media Matrix, BCG

Towards a mobile information society:

“Pardon me, ma’am, but is that your tooth ringing?”

- The advent of “pervasive” miniaturized mobile devices will transform our lifestyles
 - Can you swallow a mobile phone?
- Teenagers are driving the market
 - Will they continue to do so when they get older?
- Implications of location-based services (LBS)
 - Can you easily be found in an emergency (e911)?
 - Can wireless implants track your every move?
- Consumer protection, e.g. health, SPAM etc...
 - How to re-assure the end-user while fostering development?



The ITU Mobile/Internet Index:

Hong Kong at the top of the world



Introduction to the Index

What it is:

- A measure of current information and communication technologies (ICT) development, with a focus on mobile and Internet
- A measure of an economy's ability to take advantage of these technologies in the future

What it is not:

- A measure of the “mobile Internet” in an economy
- Limited to mobile and Internet development only



The Parameters of the Index

50%

The infrastructure cluster measures the development of information and communication technology infrastructure, with a special focus on mobile networks and Internet development

Infrastructure

The usage cluster attempts to gauge how users are taking advantage of the existing network by examining e.g. network cost, components, revenue etc...

25%

Usage


The market structure cluster assigns an overall value for an economy by examining the level of competition in its different markets

25%

Market Structure



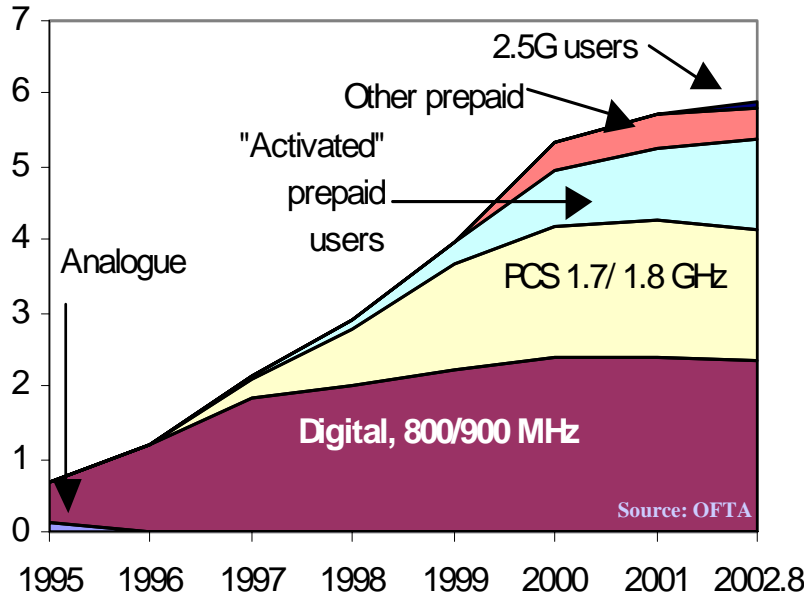
Are you 'm-ready'? HK tops index

	Economy	Score	Rank	GDP
	Hong Kong, China	65.88	1	\$24'249
	Denmark	65.61	2	\$30'902
	Sweden	65.42	3	\$25'654
	Switzerland	65.10	4	\$33'522
	United States	65.04	5	\$37'769
	Norway	64.67	6	\$35'265
	Korea (Rep.)	63.42	7	\$8'828
	United Kingdom	63.00	8	\$24'607
	Netherlands	62.25	9	\$23'995
	Iceland	62.03	10	\$32'069
	Canada	61.97	11	\$23'256
	Finland	61.22	12	\$23'883
	Singapore	60.58	13	\$21'188
	Luxembourg	58.58	14	\$44'664
	Belgium	57.80	15	\$22'498
	Austria	57.72	16	\$23'286
	Germany	55.53	17	\$22'675
	Australia	55.40	18	\$19'474
	Portugal	55.13	19	\$11'014
	Japan	54.94	20	\$34'337
	France	52.45	21	\$21'862
	Greece	51.44	22	\$10'707
	Italy	51.13	23	\$18'788
	Czech Republic	50.95	24	\$4'963
	New Zealand	50.47	25	\$11'847



Hong Kong: a highly networked society

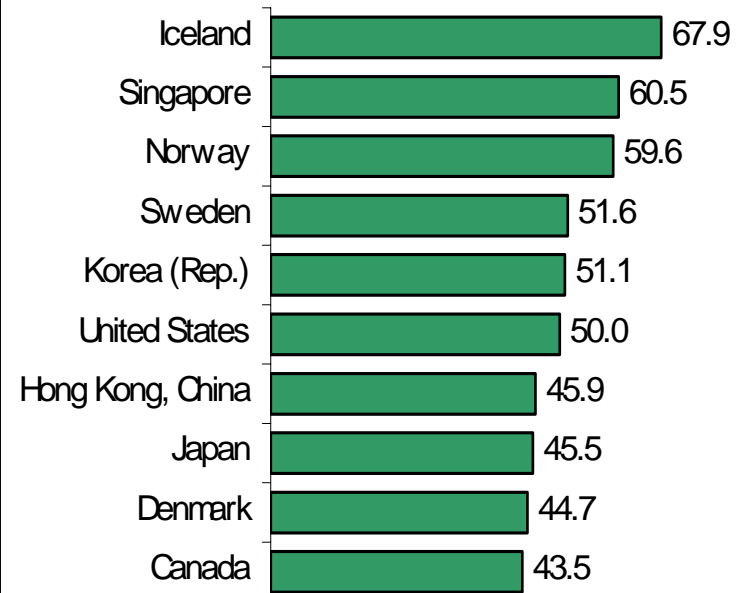
Mobile users, Hong Kong, China (million)



85.5 % mobile penetration

45.9 % Internet penetration

Internet users, top 10 by density, per 100, 2001



Where Hong Kong SAR gained points on the Index

- **Infrastructure** (ranked # 8)
 - High mobile and Internet penetration
 - 3G licensed and 2.5G deployed
- **Usage** (ranked # 4)
 - Large number of roaming agreements
 - Large number of servers using SSL encryption
- **Market Structure** (ranked # 3) **
 - Early privatization of incumbent
 - Early establishment of a separate regulator, OFTA
 - Competitive or fully competitive market segments



Still...

- Other countries are ahead in:
 - Internet usage
 - Service cost
- And catching up fast in:
 - Broadband roll-out
 - Mobile penetration

SO...





...how can HK maintain this lead?

- Continued efforts at allowing access to MVNOs and alternative service providers (e.g. resource sharing)
- Regulatory mechanisms focused on tariff reduction and transparency
 - ...while retaining an environment conducive to investment and innovation, e.g. through revenue-sharing
- Interoperable and complementary development of alternative wireless networks such as WLANs
- Promotion of content development “out of the vacuum”
 - Building first upon successes of person-to-person communications, and not attempting to emulate digital content over fixed networks

For more information: www.itu.int/mobileinternet



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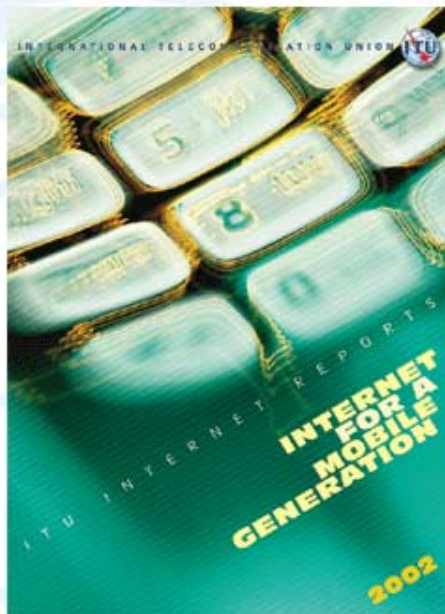
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ITU Internet Reports 2002: Internet for a Mobile Generation

Number of pages: text 140, statistical tables 80

4th edition, price: 100 Swiss Francs

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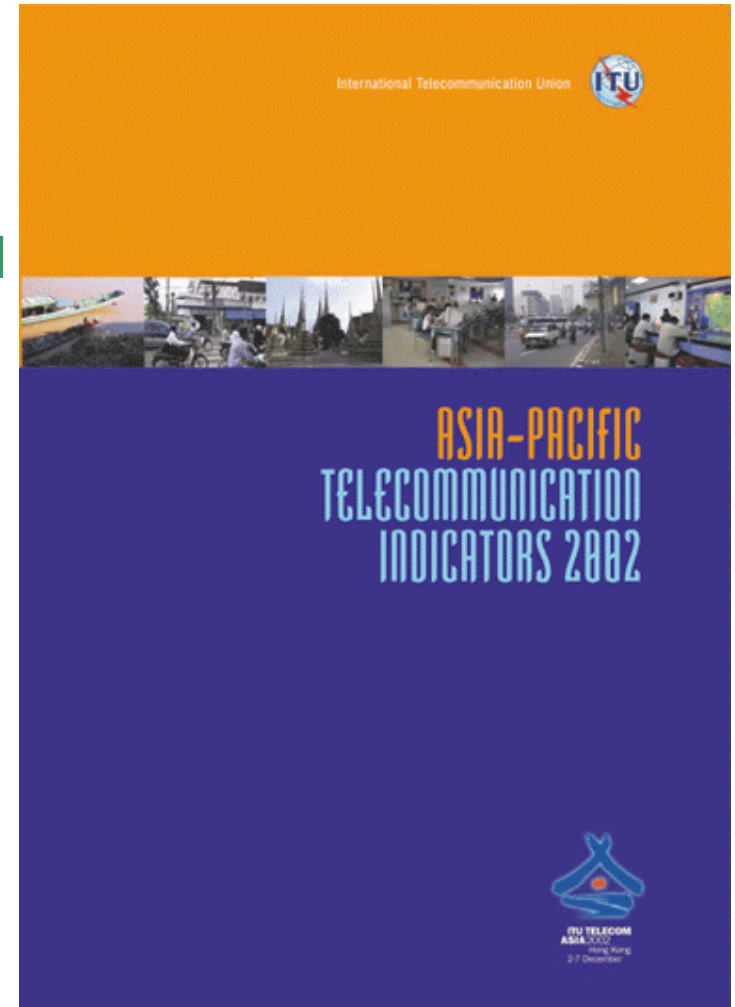
Previous Reports in the ITU Internet Reports series (previously known as "Challenges to the Network")

- Third report (December 2000)
["ITU Internet Reports 2001: IP Telephony"](#)
- Second report (February 1999, updated October 1999)
["ITU Internet Reports 1999: The Internet and the World"](#)

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Available in Dec '02
*(launch: **ITU TELECOM ASIA 2002***
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Thank you for your attention

