Shaping the mobile multimedia society: Current status and policy priorities

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We have come a long way

1910: Lars Magnus Ericsson and his wife Hilda regularly worked the first car telephone
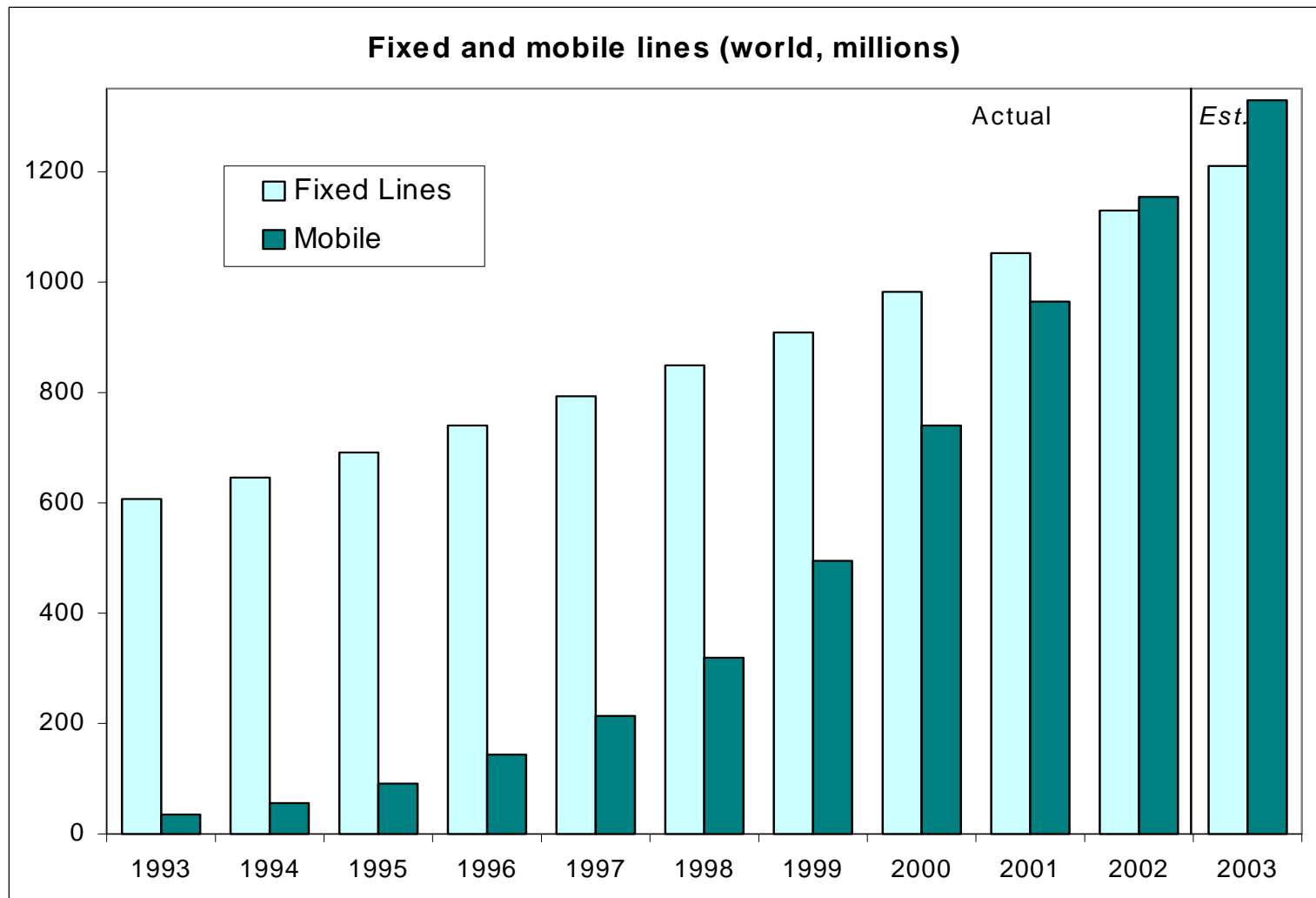
The importance of being mobile

Some key technical trends

- Popularity of, and innovation in, **digital mobile** technology and handsets

- Use of packet-based Internet Protocol **("IP")** technologies as integral in network design

- **Speed,** speed and more speed

  - Growing use of broadband access technologies

  - 3G: CDMA 2000 launched in 53 countries, W-CDMA in 6 countries.

- Growing value & ubiquity of **information**

- **"Lifestyle" and "Personalization" as integral elements of mobile technologies**

Who would have guessed?
Mobile overtook fixed in 2002….

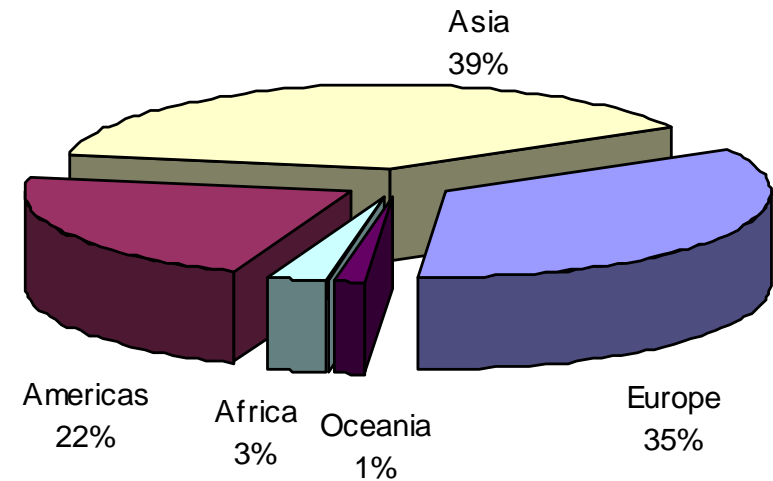**Fixed and mobile lines (world, millions)**

Actual | Est.

Legend:
- ☐ Fixed Lines
- ■ Mobile

Y-axis: 0, 200, 400, 600, 800, 1000, 1200

X-axis: 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003

Source: ITU

5

…with Asia leading the pack

TOP 10 LIST
(mobile subscribers per 100)

Taiwan, China	106.45
Luxembourg	101.34
Israel	95.45
Hong Kong, China	92.98
Italy	92.65
Iceland	88.89
Sweden	88.50
Czech Republic	84.88
Finland	84.50
United Kingdom	84.49

Mobile subscribers, by region, 2002

Asia 39%

Americas 22%

Africa 3%

Oceania 1%

Europe 35%

6

Source: ITU World Telecommunication Indicators

Mobile applications

Today's mobiles are…

Handspring's smartphone w/ fully integrated QWERTY keyboard

Samsung SCH-X820 - accesses color TV in real time over VHF/UHF (Korea)

Atelab's Chameleon operates in two positions; vertical as a mobile phone and horizontal as a game console

Sharp's J-SH53 with built-in camera capable of megapixel quality

NEC e808Y video mobile from NEC, with two built-in cameras (UK's 3)

F505i with fingerprint sensor (**DoCoMo**)

8

Source: Adapted from 3G.co.uk

…getting 'close-up' and personal

The Nokia 7600
Palm-sized java-enabled device with full-color screen, video and digital camera, MP3 player…Users can send/receive video clips and digital photographs either through a Bluetooth radio, USB port or infrared

NOKIA tells us:

…create a stylish backdrop for exposing your persona, whether demure or outrageous. So go ahead:
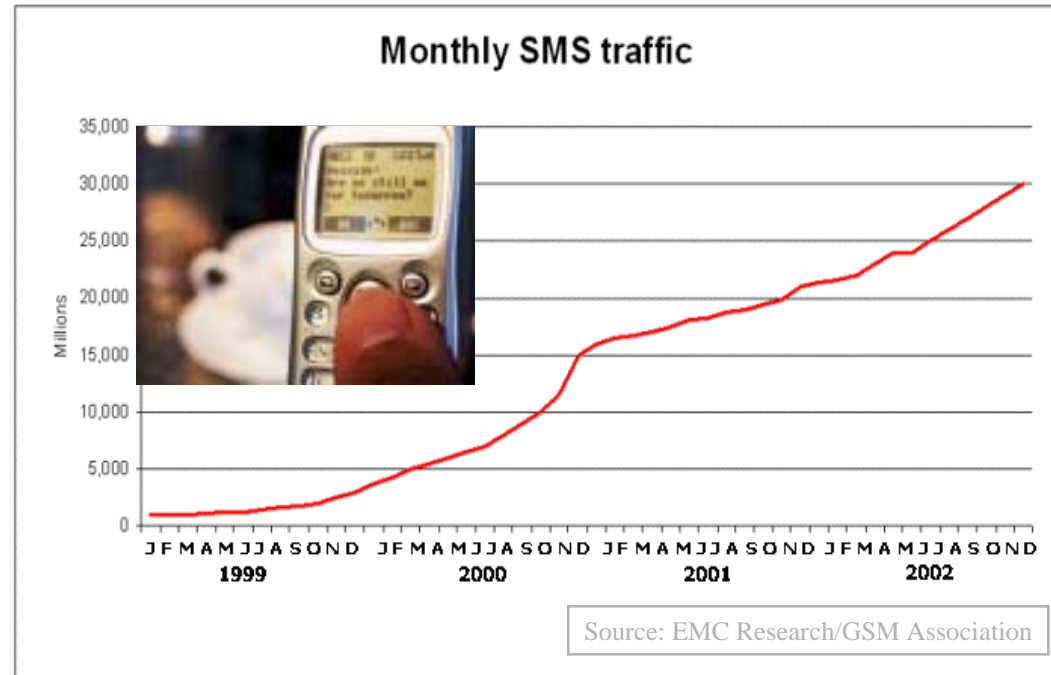
REVEAL YOUR HIDDEN SELF

9

Source: Nokia

Person-to-person messaging remains a key growth area

- **SMS**
  - Unexpected, phenomenal growth

- **MMS**
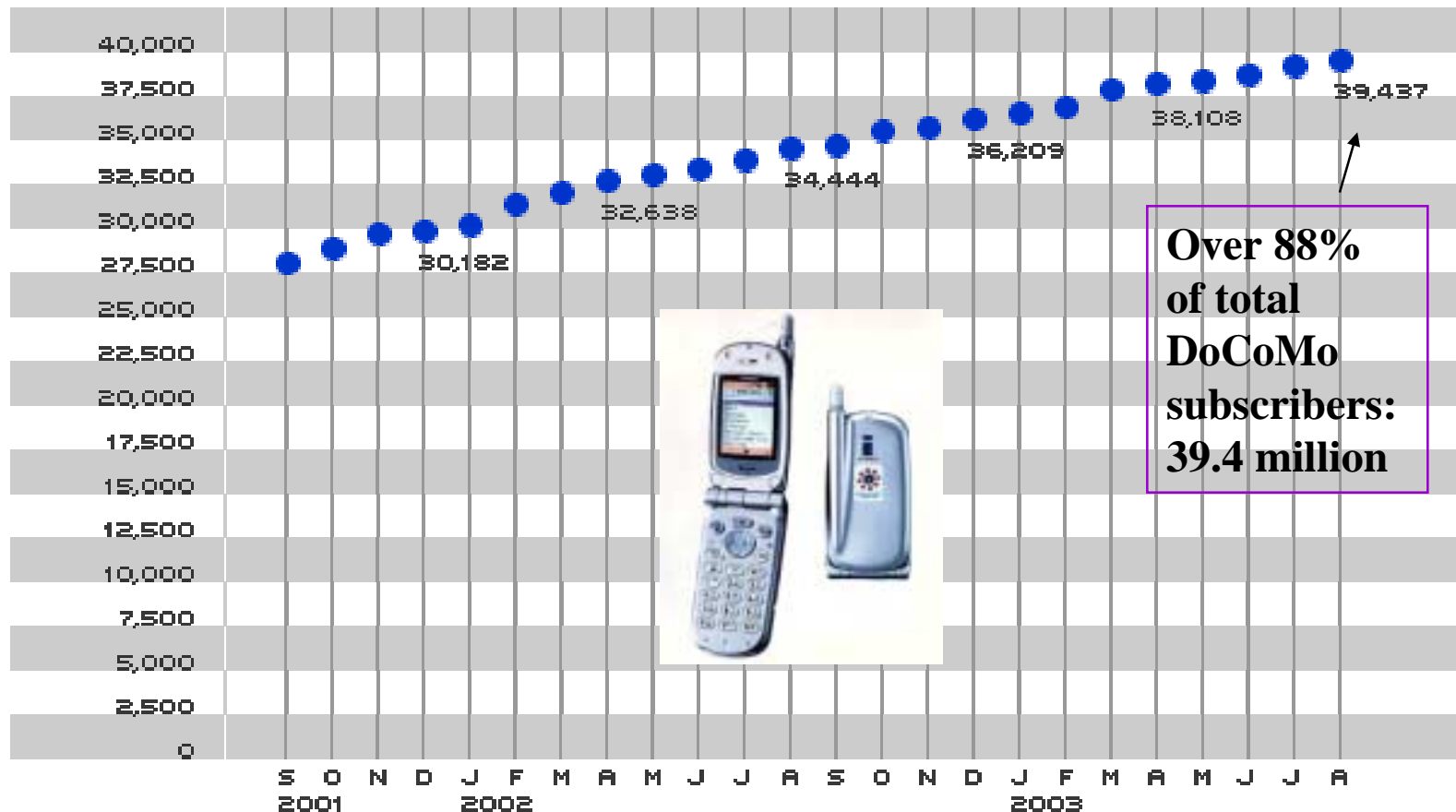 - Already launched in a number of countries
  - No. of photos sent from mobiles to mobiles & Internet is growing

Monthly SMS traffic

Source: EMC Research/GSM Association

i-mode: a 'connectivity' success story

Growth of i-mode subscribers Sept 2001- August 2003

Monthly

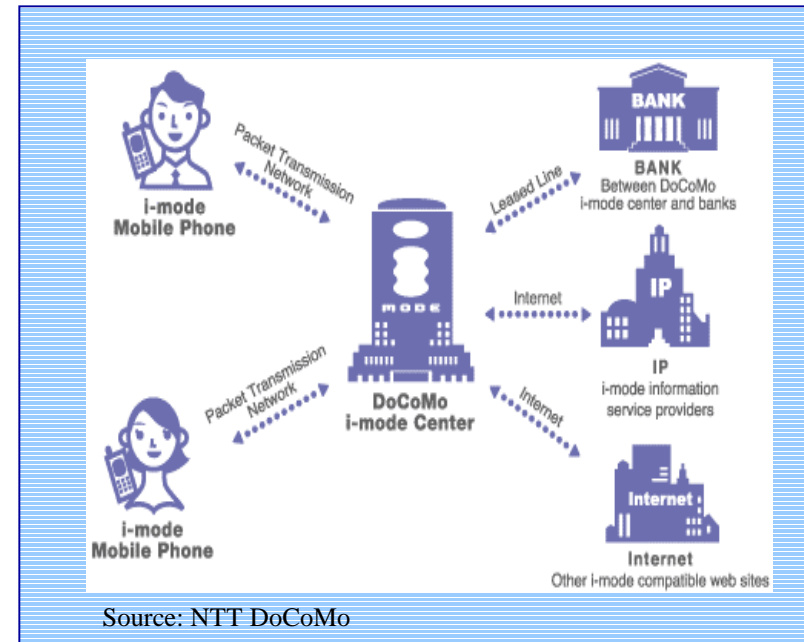Over 88% of total DoCoMo subscribers: 39.4 million
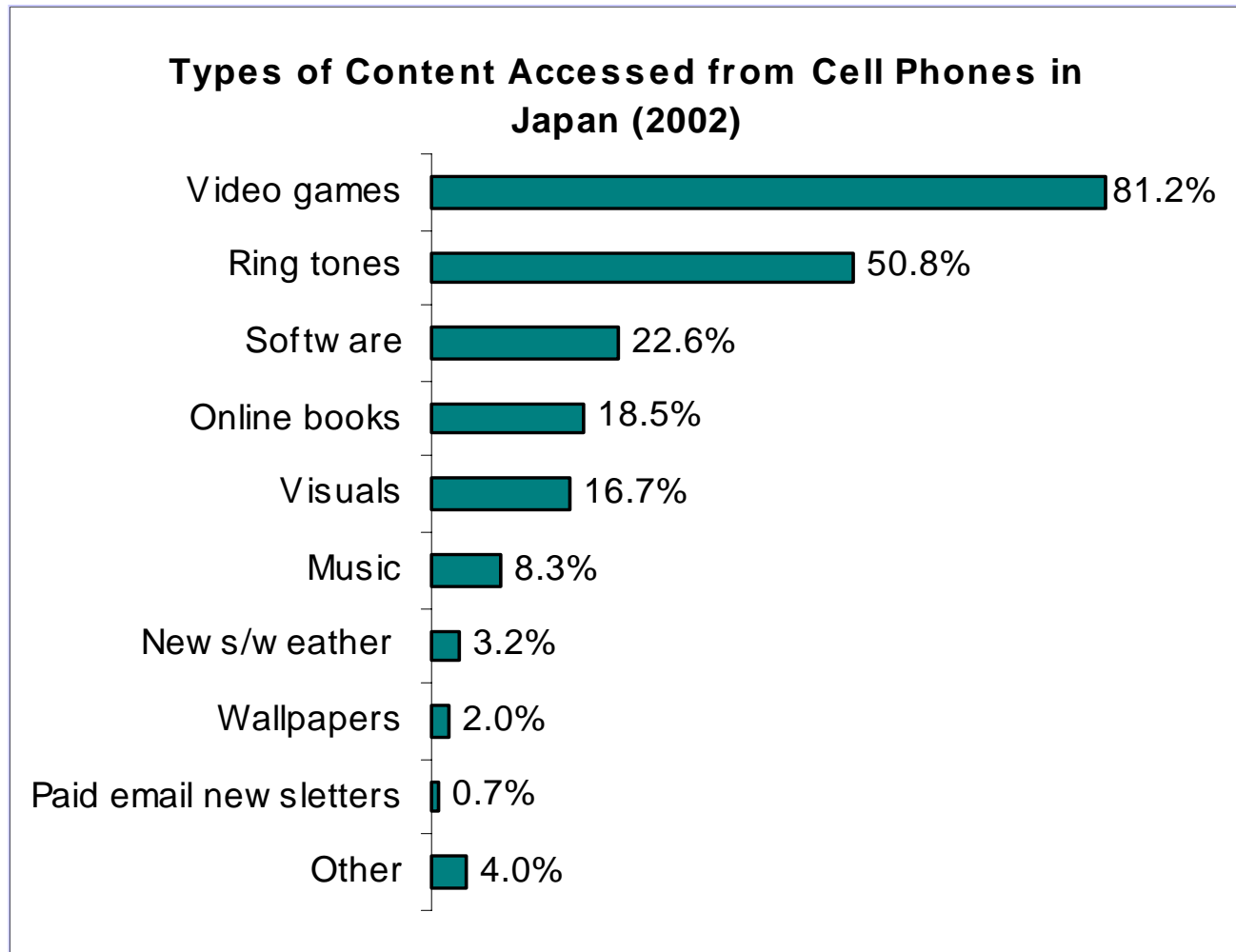
Source: NTT DoCoMo

UNITS - THOUSAND

Behind the success of i-mode

- ## Key factors:
  - Content Availability
    - Locally relevant
  - Role of content providers – Revenue-sharing
  - cHTML, now evolving to xHTML (like WAP)

Source: NTT DoCoMo

  - Packet-based network

- ## More recently:
  - Offered over 3G (FOMA) as enhanced i-motion
  - i-mode network/specification now open to other companies, (e.g. ISPs) for content development

Non-messaging content over today's mobiles in Japan

Types of Content Accessed from Cell Phones in Japan (2002)

Content	Percentage
Video games	81.2%
Ring tones	50.8%
Software	22.6%
Online books	18.5%
Visuals	16.7%
Music	8.3%
New s/w eather	3.2%
Wallpapers	2.0%
Paid email new sletters	0.7%
Other	4.0%

13

Source: MPHPT

Lessons for mobile content development

- Content will evolve towards more and more diversified "infotainment" services

    – e.g. Gaming, audio/video services, transaction services, location-based services, phone personalization…

- Data use over mobile handsets will not imitate fixed-line use and mostly entail short bursts of activity

    – This will change over time, with developments in fixed-mobile convergence & increasingly sophisticated handsets

- Popular services in nascent markets will be structured around person-to-person interactions or targeted "context-aware" information/transactions

- Successful content development will take into account local and cultural factors

Policy priorities and making the market

A changing landscape:

New players – new role
Old players – new roles

Source: EITO

Service area

Application area

Technology area
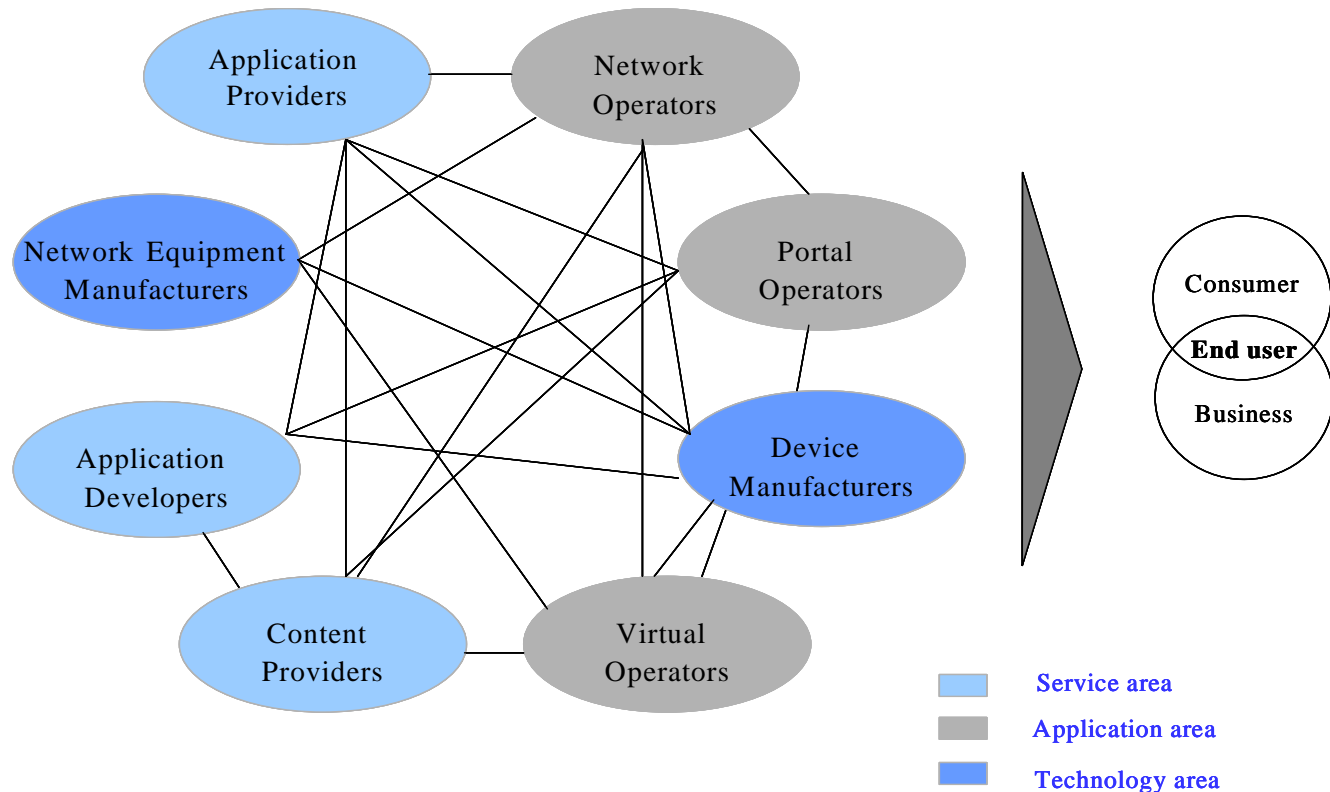
Some barriers to market development

- Limited availability of handsets and devices
  - Battery life, cost
- Delays in launch of high-speed services
- Low degree of content development
- Lack of open platforms
- Plethora of mark-up languages and media formats
- Absence of, or ineffective, revenue-sharing models
- Inadequate billing models & non-transparent pricing, i.e. consumer confusion
- Lack of consumer awareness & safeguards

What could drive the market?

- Fast effective deployment of higher-speed networks
- Development of installed base of data-enabled devices
- Availability of relevant content, applications
- Harmonization of content, use of open source technologies
- Convergence of broadband mobile and fixed technologies
- Industry collaboration and co-operation
- Effective billing models
  (e.g. evolution to bulk, flat-rate pricing)

AND …

…the promotion of a healthy market structure in the public interest

- Fostering a level playing field
  - Spectrum allocation and use
  - Effective interconnection/termination
  - Infrastructure sharing
  - Revenue sharing

- Protecting the consumer
  - Affordability and access
  - Data/privacy protection
  - User education and awareness

Towards mobile ubiquity (1): anywhere, anytime…

- Preserving your health: Swallowing a tiny mobile device can help track a patient's vitals remotely and diagnose illnesses without intrusive surgery
- Showing you the way: Easy-to-use navigation systems can get you where you're going – efficiently.
- Taking inventory: Tiny ID tags can track inventory, reducing business overheads, and help lead the blind
- Keeping safe: Location technologies can keep small children or the elderly out of harm's way
- Keeping you dry: Wearable computing can adjust your clothing to weather/forecasts
- Saving your cereal: An intelligent fridge can pre-order milk for you *before* you run out

Towards mobile ubiquity (2): …anyone, anyhow?

- But…can *anyone* have access to information about your health (e.g. employers)?

- And *who* can/should track your every move?

- Should anyone know exactly *what* you eat, *when*, *how much*?

- Do RFID tags remain active once you buy an item? What kind of information are they collecting and *who can have access* to it? For *what* purpose?

- Can your personal documents be scanned by anyone with a portable mobile device without your knowledge and used fraudulently?

Popular mobile multimedia and attempts at managing use

- The "Moblogging" trend
  – Personal diaries, increase of person-generated content
  – But can high-resolution footage be taken then posted on the Web without the consent of the photographed?
- "Snappy digital shoplifting" in Japan
- Private sector starts banning use of camera phones
  – Changing rooms/public pools (Japan-Tipness Fitness, Australia-e.g.YMCAs)
  – Car manufacturers (e.g. Sweden-Volvo, Germany-BMW)
  – Mobile handset manufacturers (e.g. Samsung!)
- Public sector begins to acknowledge risks
  – first European body to act is Italy's *Garante per la Protezione dei Dati Personali*

Mobile Spam

- New forms of 'spam' over mobile networks (e.g. using SMS) enable promotions to be sent to millions of users overnight
- Concerns:
  - The unsolicited nature of the messages;
  - Potential for misleading product descriptions;
  - Lack of accurate pricing information;
  - The nature of the content (e.g. adult content)
- Mobile spam is a threat to online privacy, which can be said has 2 principal elements
      1) the right to control personal information
      2) the right to be left alone/ free from arbitrary interference

The rise of increasingly personalized mobile devices pose a threat to both

# Blurring the boundaries between the public and private spheres

- Private lives become public
  - Embarrassment/Courtesy
  - Nuisance
  - Less isolation

- Public spaces become private
  - Staying connected
  - Group dynamics
  - Safety issues

Revealing your hidden self?

24

A new techno-social sphere

- Protecting our children
  - Rating of content
  - Barring facilities
  - Litrcy n Educn
- Health considerations
- Mobiles for social and political change
- Mobile's effect on norms of social behaviour
  - A new mobile 'etiquette'?
  - Fostering responsible communication
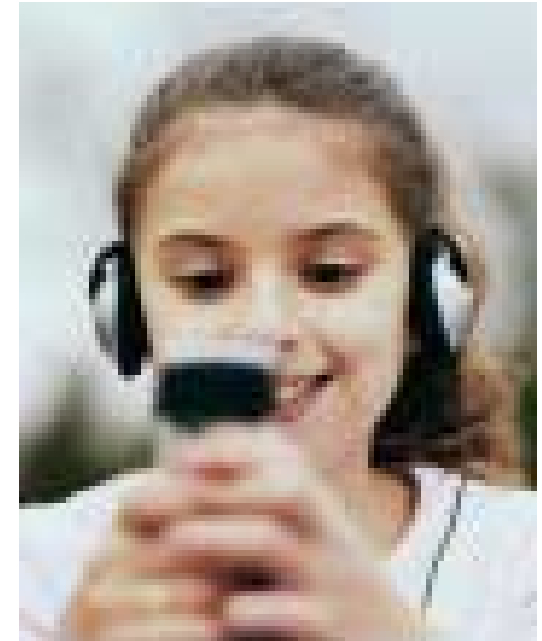
Related Links

- About us: ITU's Strategy and Policy Unit (SPU)
  - **www.itu.int/spu**
- 2002: ITU Internet Reports "*Internet for a mobile generation*"
  - **www.itu.int/mobileinternet**
- 2003: ITU Research Project on "*Mobile overtakes fixed*"
  - **www.itu.int/mobileovertakes**
- 2004: Research Project and joint ITU/MIC-Korea International Workshop and Symposium on "*Shaping the future mobile information society*" from 3-5 March
  - **www.itu.int/futuremobile**
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tks 4 yr attn!

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