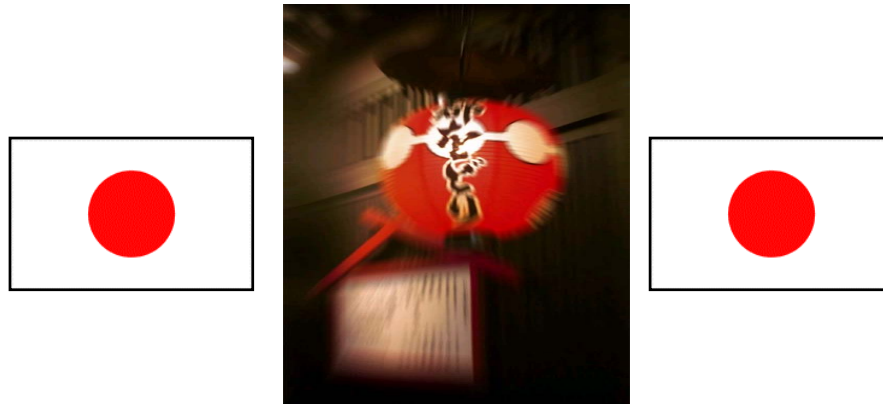# Ubiquitous Network Societies:
Highlights from the Japan country case study

ITU Workshop on "Ubiquitous Network Societies"
6 April 2005

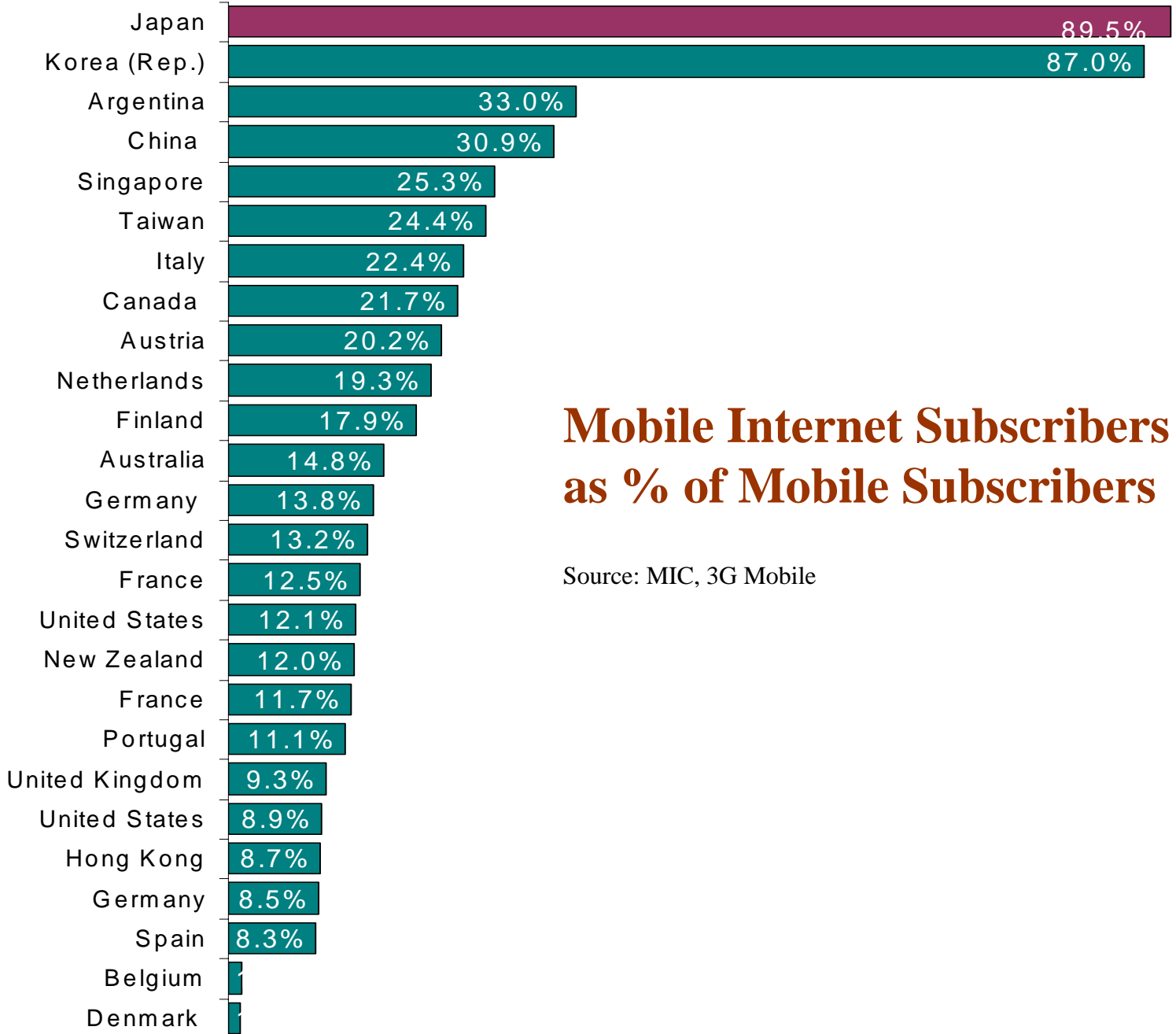**Lara Srivastava**
Telecom Policy Analyst, Strategy and Policy Unit, ITU

ITU International Telecommunication Union

Why Japan?

- Tech-savvy population
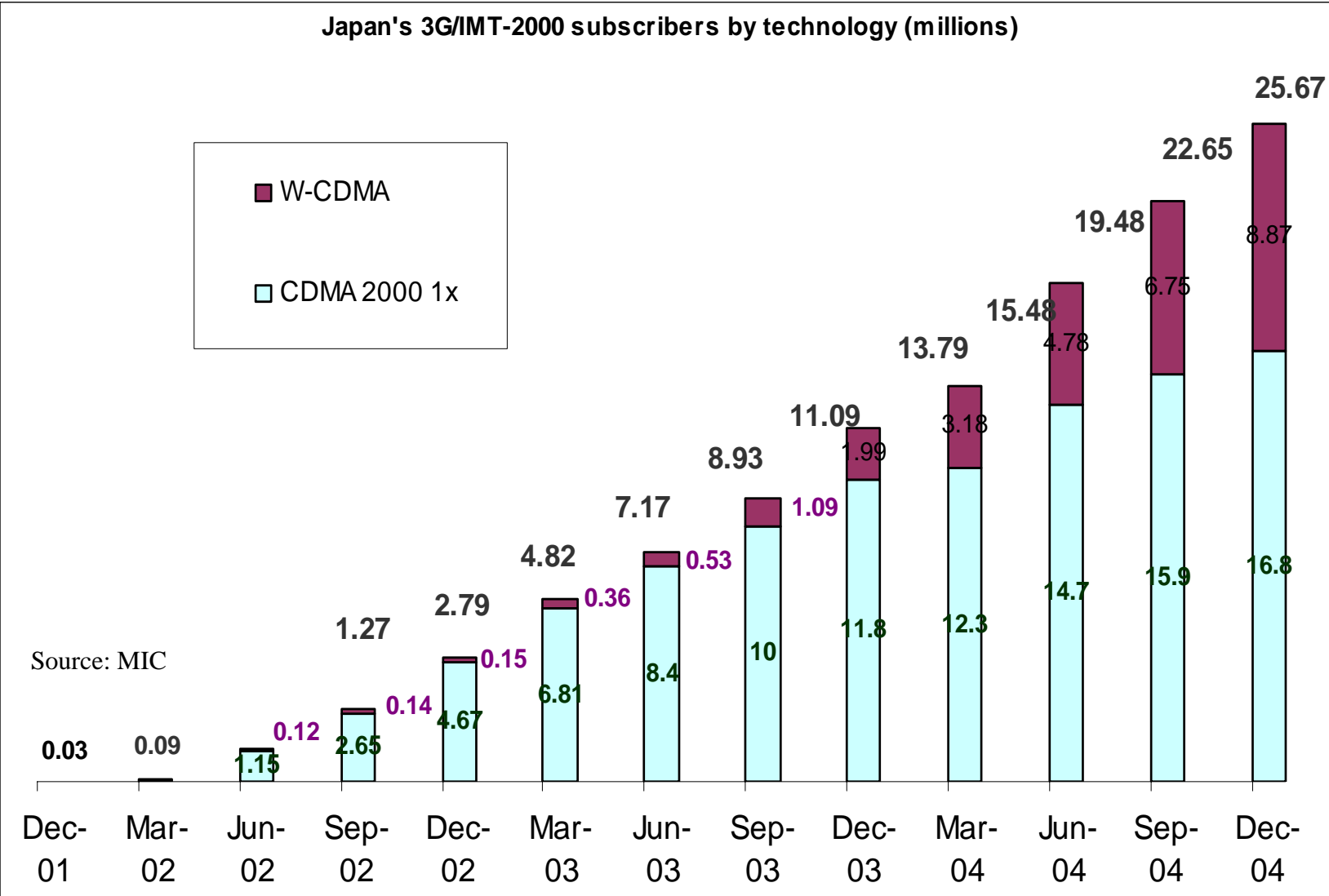 - Popularity of consumer electronics on the whole, and particularly the mobile phone
- Mobile phones as ubiquitous & indispensable fashion statements
- One of the first countries to launch IMT-2000/3G
- Nation with cheapest broadband access in the world (Source: ITU)
- Government implementing a number of strategy initiatives geared specifically towards the further development of a "ubiquitous network society"

Country	Percentage
Japan	89.5%
Korea (Rep.)	87.0%
Argentina	33.0%
China	30.9%
Singapore	25.3%
Taiwan	24.4%
Italy	22.4%
Canada	21.7%
Austria	20.2%
Netherlands	19.3%
Finland	17.9%
Australia	14.8%
Germany	13.8%
Switzerland	13.2%
France	12.5%
United States	12.1%
New Zealand	12.0%
France	11.7%
Portugal	11.1%
United Kingdom	9.3%
United States	8.9%
Hong Kong	8.7%
Germany	8.5%
Spain	8.3%
Belgium	
Denmark	

Mobile Internet Subscribers as % of Mobile Subscribers

Source: MIC, 3G Mobile

3G or IMT-2000 "Keitai"

Japan's 3G/IMT-2000 subscribers by technology (millions)

- ■ W-CDMA
- □ CDMA 2000 1x

Source: MIC

0.03	0.09		1.27	2.79	4.82	7.17	8.93	11.09	13.79	15.48	19.48	22.65	25.67
		0.12	0.14	0.15	0.36	0.53	1.09	1.99	3.18	4.78	6.75	8.87
		1.15	2.65	4.67	6.81	8.4	10	11.8	12.3	14.7	15.9	16.8

| Dec-01 | Mar-02 | Jun-02 | Sep-02 | Dec-02 | Mar-03 | Jun-03 | Sep-03 | Dec-03 | Mar-04 | Jun-04 | Sep-04 | Dec-04 |

Content accessed through near–ubiquitous mobiles vs. PCs

Mobile Content (2003)

Category	Value
Ring tones	84.0%
Wallpapers	43.4%
Music	21.9%
Video games	20.2%
News/weather	13.9%
Visuals	7.3%
Paid email newsletters	3.8%
Software	2.4%
Online Books	0.4%
Other	4.3%

PC Content (2003)

Category	Value
Software	28.0%
Music	21.3%
Visuals	19.7%
Video Games	12.4%
News/Forecasts	10.0%
Screensavers	7.0%
Ring tones	6.7%
Paid email newsletters	5.3%
Online Books	4.3%
Other	4.0%

Source: MIC

The path to ubiquitous networks:
An increase in the scale of network connections over time

Source: Murakami, ITU-T NGN Forum, July 2003
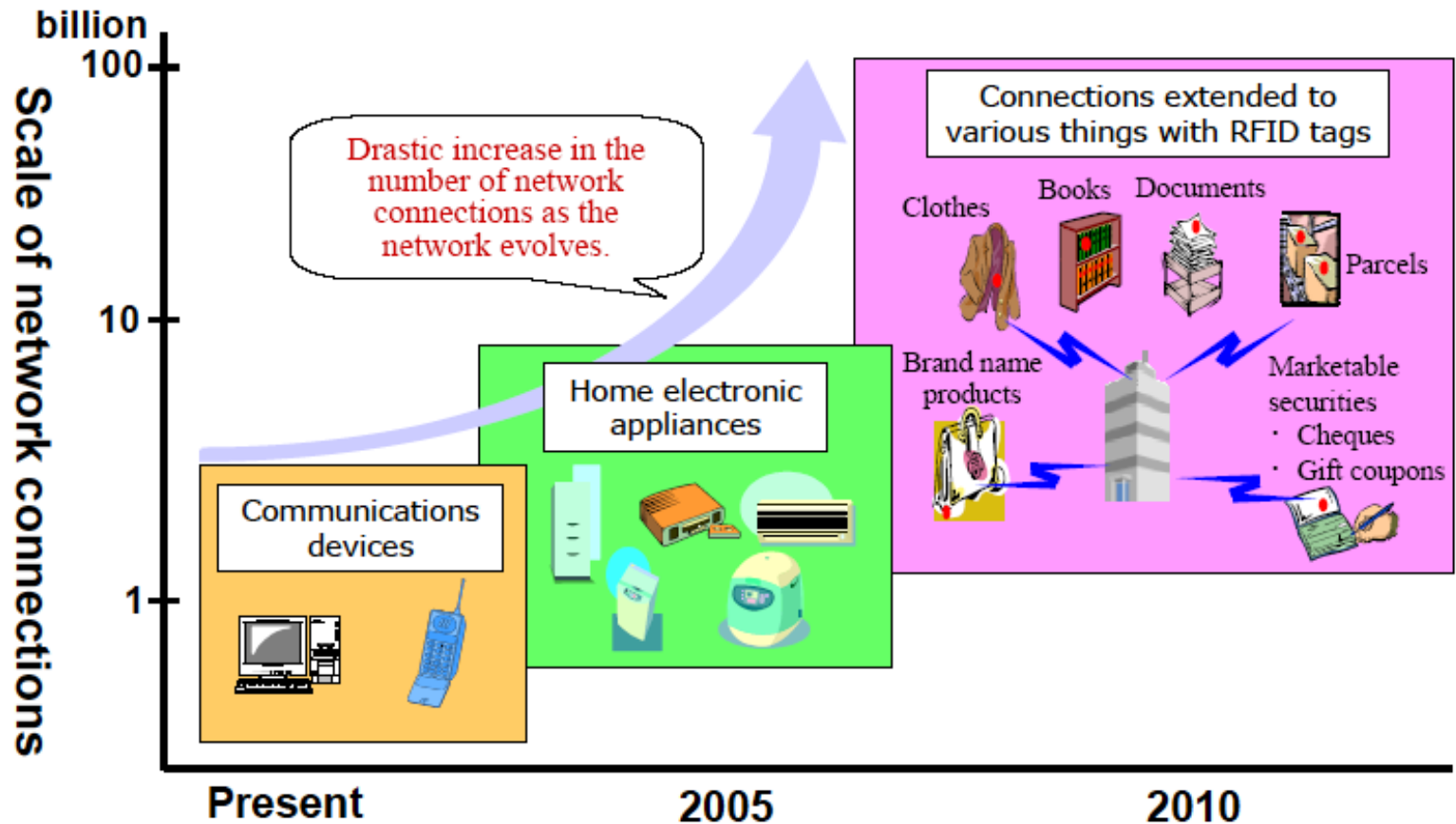
Highlights: Chips and Codes

- RFID
  - In Roppongi Hills trial – read or shop?
  - Sushi à la RFID
  - RFID tracking and transport
  - Mobile digital wallets

- The DoCoMo 2D Code
  - With this, mobile can read data from a simple code
  - Eventually hyperlinks will be included
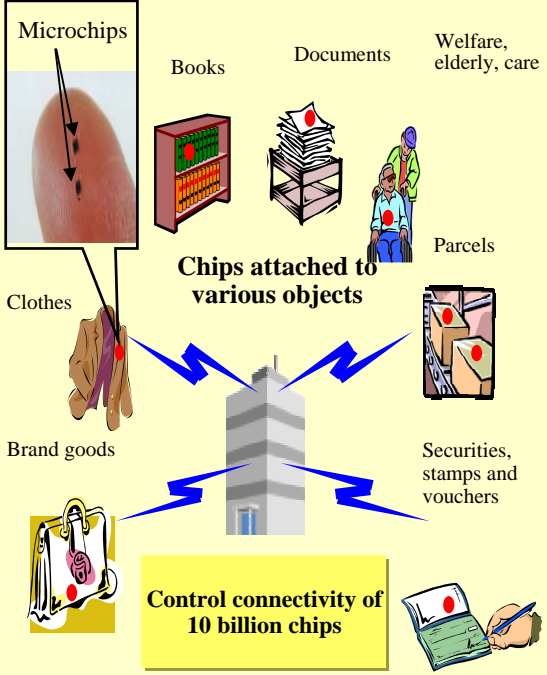 - A first step to the T-Engine Forum's "*Ubiquitous Communicator*"?

Japan's strategy for ubiquitous communications

- Japan is aiming for a "*ubiquitous network society*", that is to say a society in which there is "anytime, anywhere" access, for "anyone and anything"

- Since 2003, MIC has been working closely with industry and academia to stimulate the development of ubiquitous networks

- Current focus on three key technology areas:

  1. *Microchip network technology*

  2. *Ubiquitous network identification and agent technology*

  3. *Ubiquitous network control and management technology*

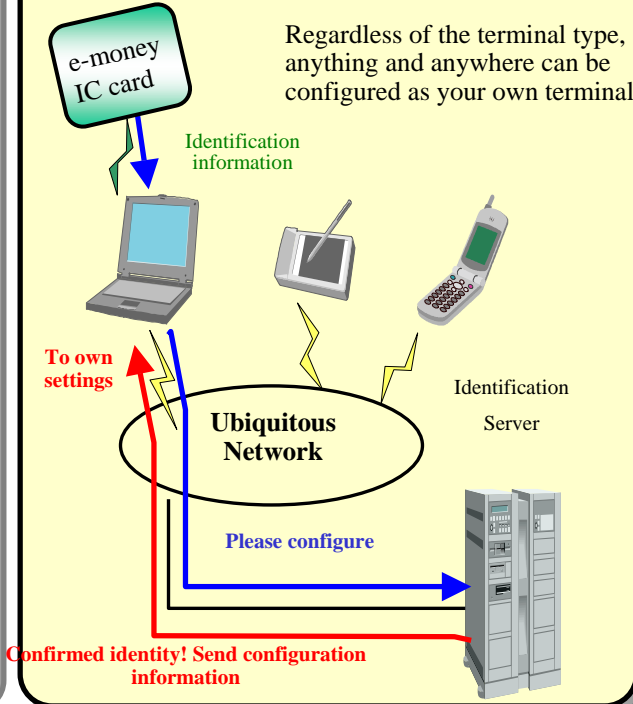# A 3-fold R&D approach towards ubiquity of communications

Microchip network technology

Through high-functionality microchips, a variety objects can be freely connected to the network.

Microchips

Books

Documents

Welfare, elderly, care

Chips attached to various objects

Parcels

Clothes

Brand goods

Securities, stamps and vouchers

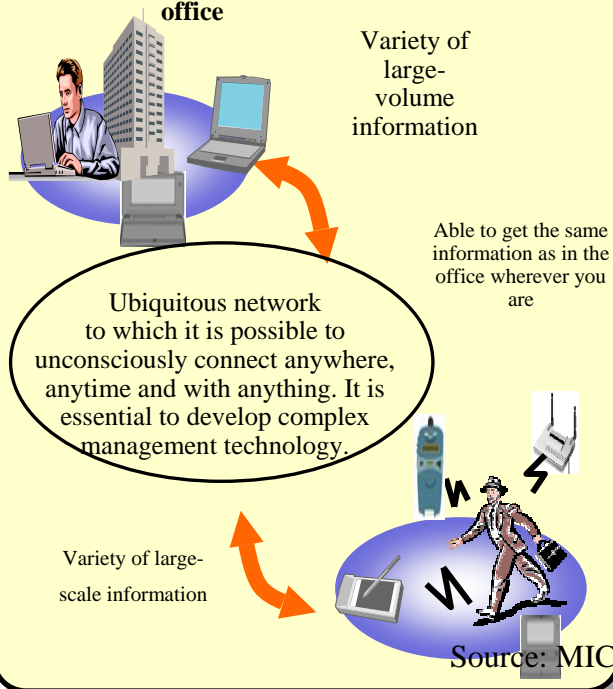**Control connectivity of 10 billion chips**

Ubiquitous network authentication and agent technology

Through simply holding a contact-less card, any terminal can be instantly configured as your own.

e-money IC card

Regardless of the terminal type, anything and anywhere can be configured as your own terminal

Identification information

To own settings

Ubiquitous Network

Identification Server

Please configure

Confirmed identity! Send configuration information

Ubiquitous network control and management technology

Wherever you are and whenever you like, you can enjoy the same communication services and diversity of content as in the office.

office

Variety of large-volume information

Able to get the same information as in the office wherever you are

Ubiquitous network to which it is possible to unconsciously connect anywhere, anytime and with anything. It is essential to develop complex management technology.

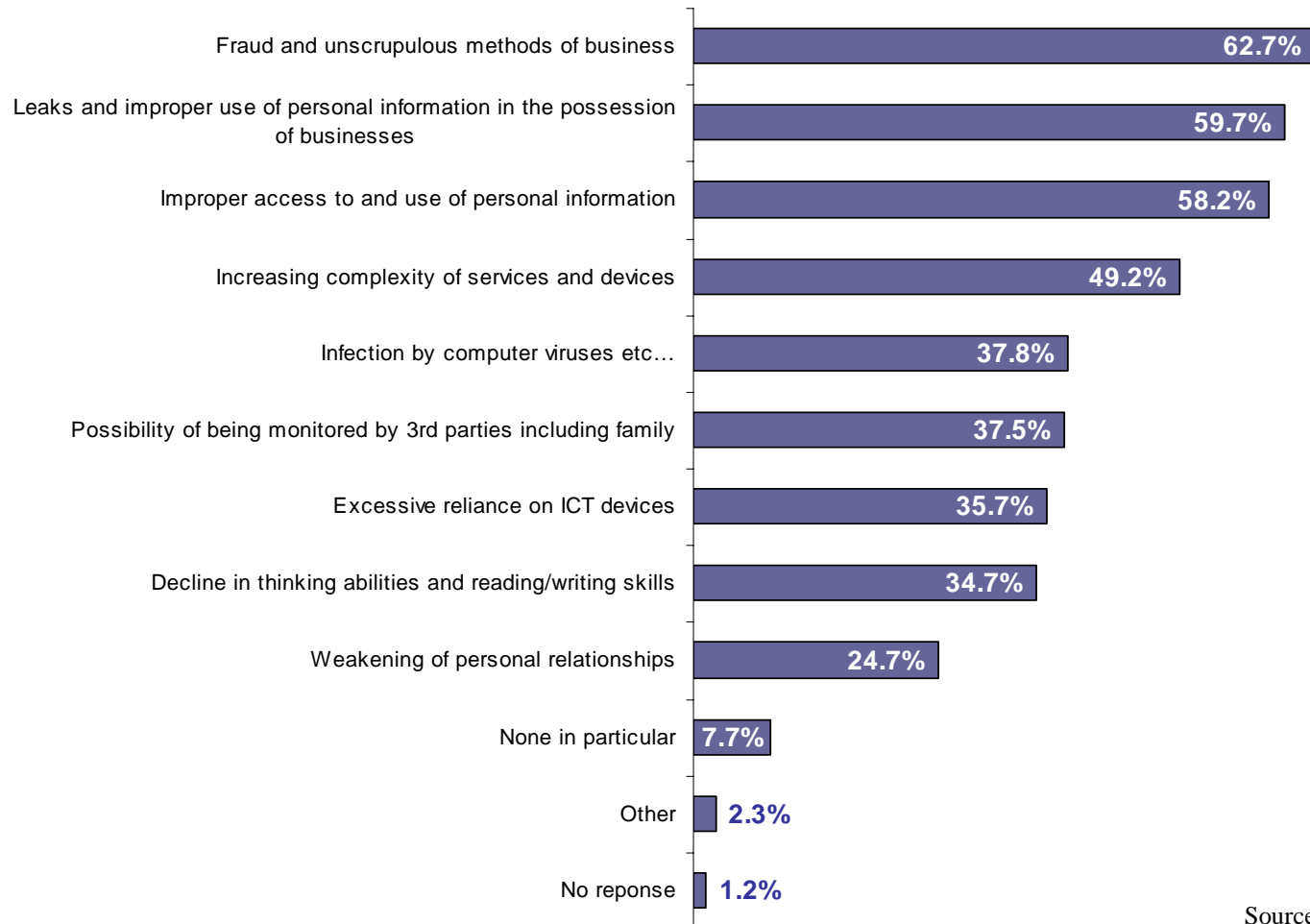Variety of large-scale information

Source: MIC

But ubiquity also means access for <u>all</u> segments of the population

- Great demand for simple mobile handset for those not wishing/needing to use Internet or cameras

- TU-KA, KDDI's 2G arm, released this simple handset (*Tu-Ka S)* in Nov 2004.

- *Tu-Ka S* has no LCD display or users manual, and has been a smash hit for users over 60!

User concerns relating to ubiquitous communications…

User concerns relating to their use of ubiquitous network services (2003)

Concern	Percentage
Fraud and unscrupulous methods of business	62.7%
Leaks and improper use of personal information in the possession of businesses	59.7%
Improper access to and use of personal information	58.2%
Increasing complexity of services and devices	49.2%
Infection by computer viruses etc…	37.8%
Possibility of being monitored by 3rd parties including family	37.5%
Excessive reliance on ICT devices	35.7%
Decline in thinking abilities and reading/writing skills	34.7%
Weakening of personal relationships	24.7%
None in particular	7.7%
Other	2.3%
No reponse	1.2%

Source: MIC

… addressed by Japan's Charter for "Ubiquitous Network Society"

Establish a charter summarizing the basic principles and shared understandings for the ubiquitous network society

Ubiquitous Network Society Charter (Draft)

Preamble

Latent potential of ICT and its role in future society
Ubiquitous network society — definitions, objectives and significance
Balance between free and diverse information distribution, and safe and secure information distribution
Positioning of the Charter

Free and diverse information distribution

Information access & dissemination rights

Information diversity

Promotion of information technology in business and society

Information literacy

Safe and secure information distribution

Privacy

Information security

Intellectual property rights
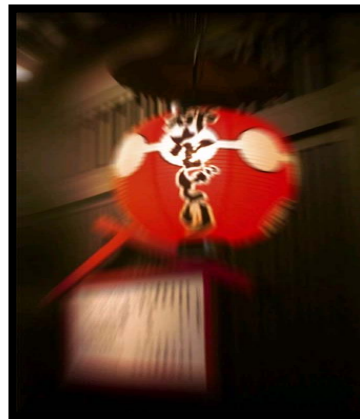
Information ethics
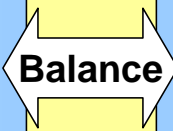
Balance

Support

Construction of new social infrastructure

Balance between the real society and the cyber society   Systems for local and international coordination and cooperation

thank you

"domo arigatoh gozaimasu"

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