Project: IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs)

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Abstract: [Tutorial presentation on Sep. 21]

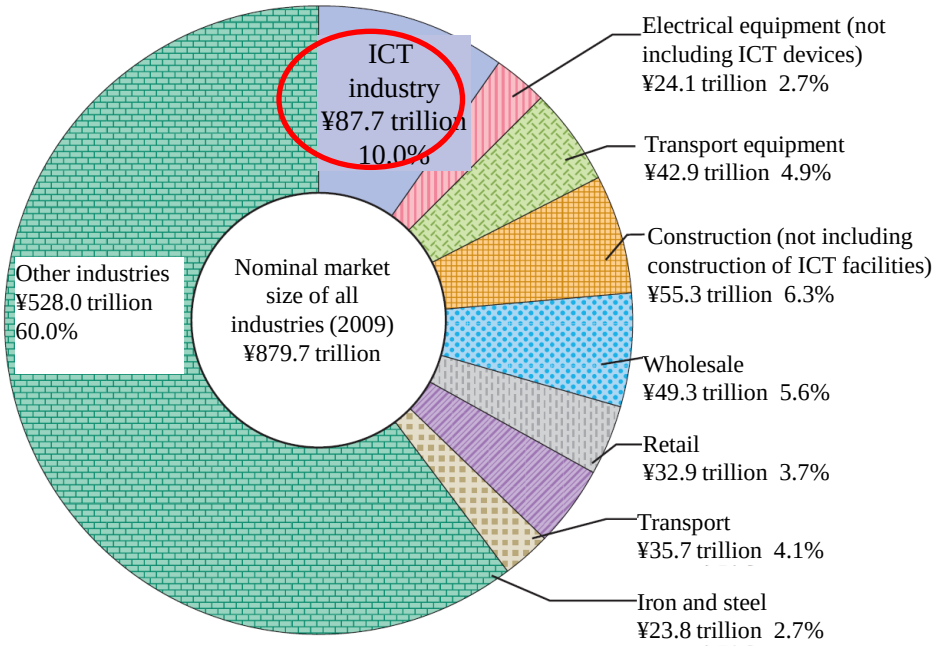
Contents

1. Current state of ICT in Japan

Japan's ICT industry's contribution to economic growth

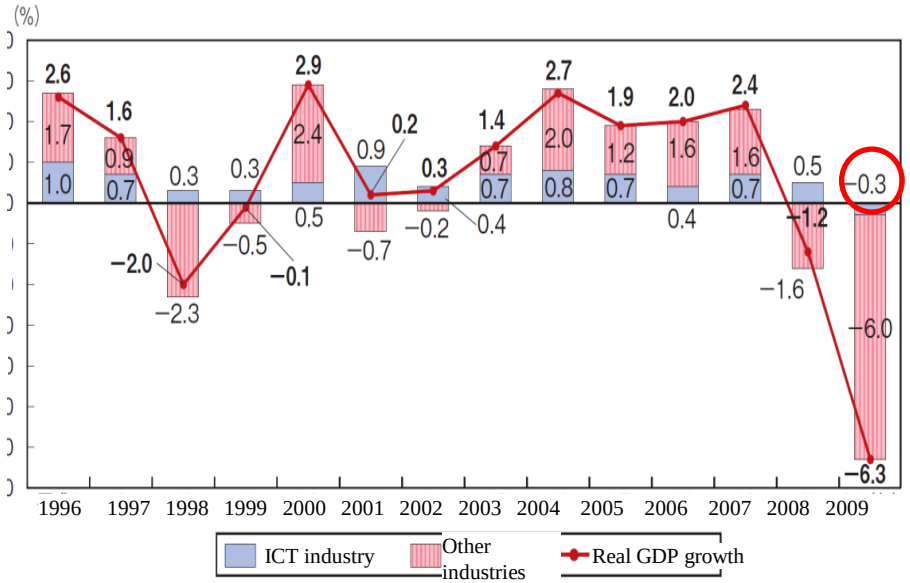
- The ICT industry accounts for approximately 10% or the market for all industries (¥87.7 trillion)
- The year-on-year growth rate of Japan's GDP in 2009 was -6.3%. The degree of contribution of the ICT industry was -0.3%.

Japan's ICT industry's share of nominal domestic production



Change in contribution of the ICT industry to the growth rate of Japan's GDP

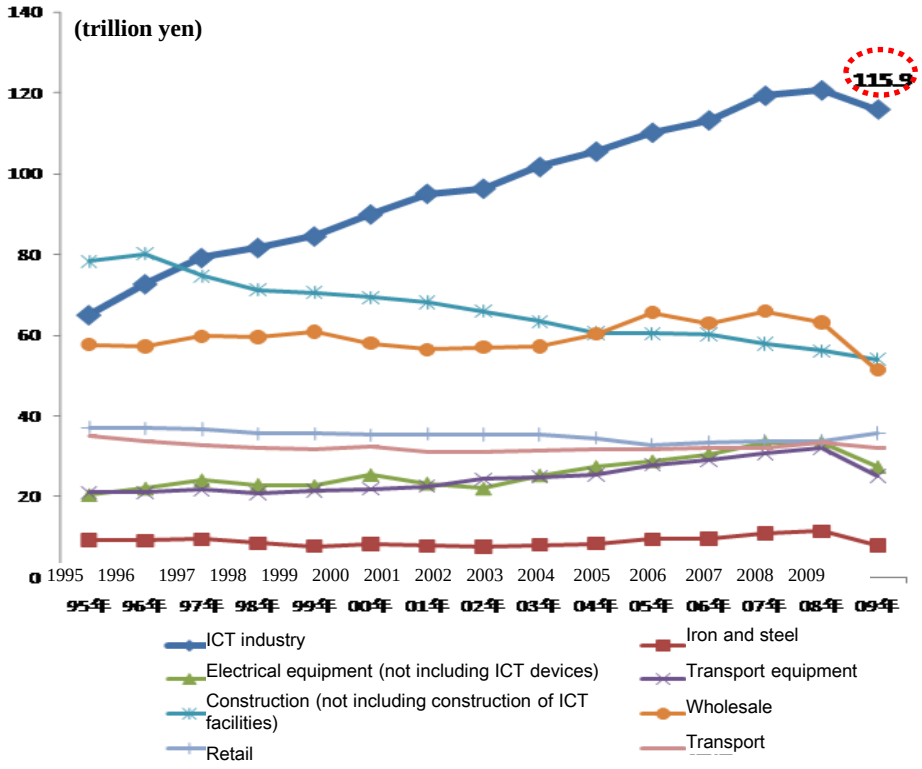
First negative growth for the ICT industry since 1996



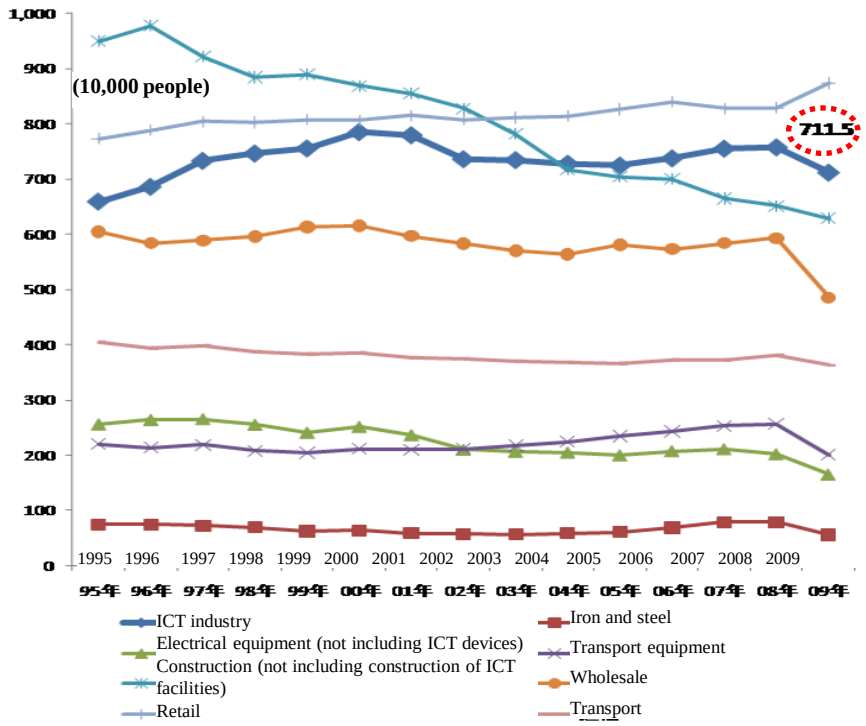
The ICT industry has a major knock-on economic impact on all other industries

- The amount of added value the ICT industry stimulates for other industries is the greatest of any industry, at ¥115.9 trillion (2009).
- The number of jobs stimulated by the ICT industry was 7.115 million in 2009. This puts the industry on a par with the retail and construction industries.

Change in amount of added value stimulated



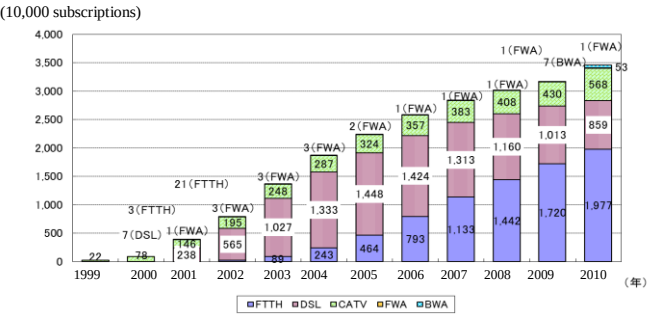
Change in number of jobs stimulated



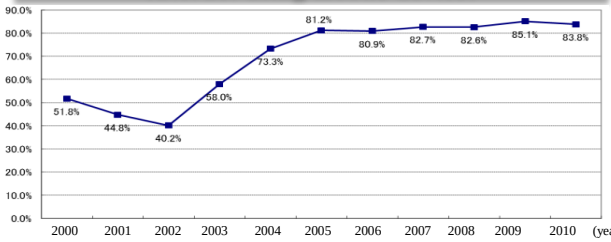
ICT infrastructure environment has become richer and more personalized over the last decade

- Adoption of broadband has progressed rapidly thanks to the spread of DSL and cable Internet. Service has become faster, higher capacity and progressively richer in content as users convert to FTTH.
- The percentage of people who access the Internet using mobile devices has risen to 83.8% (compared to 40.2% in 2002), and the Internet environment is becoming progressively more personalized. Meanwhile, content is progressively richer, with nearly all users switching to 3G (third-generation) mobile phones (98.8% of all subscriptions).
- Broadcasting is shifting to digital, with analog TV broadcasts being replaced by digital terrestrial broadcasts. With a greater number of channels through satellite or cable, viewers can select from an ever wider range of content.

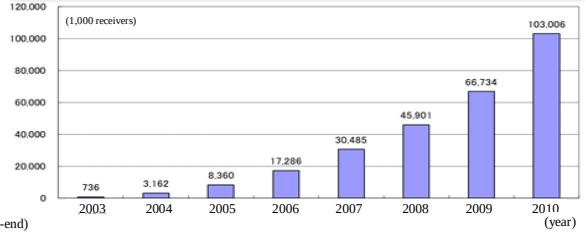
Change in number of broadband subscriptions



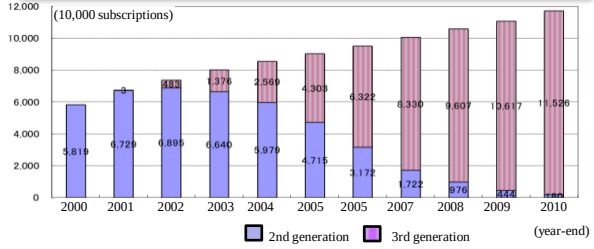
Change in percentage of people accessing the Internet using mobile devices



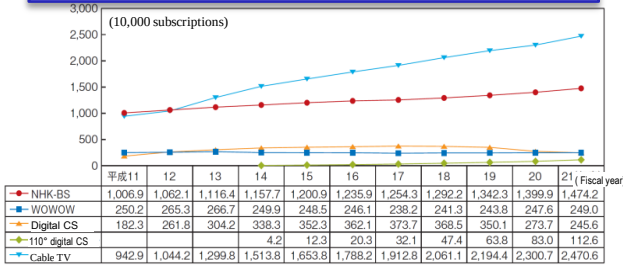
Change in number of digital terrestrial broadcast-compatible receivers shipped



Change in number of subscriptions to 2nd- and 3rd-generation mobile communications systems



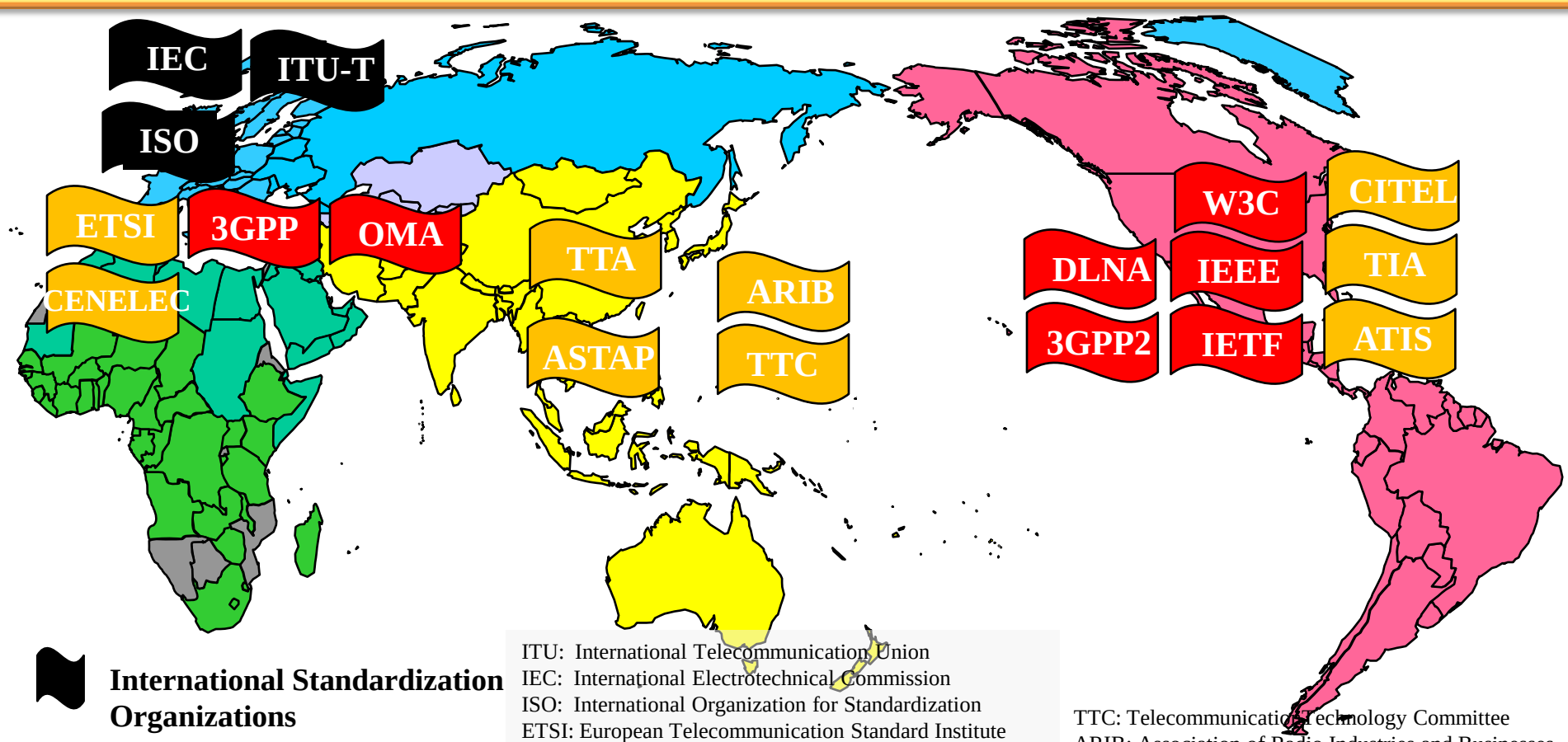
Change in number of satellite broadcast and cable TV subscriptions



	平成11	12	13	14	15	16	17	18	19	20	21
NHK-BS	1,006.9	1,062.1	1,116.4	1,157.7	1,200.9	1,235.9	1,254.3	1,292.2	1,342.3	1,399.9	1,474.2
WOWOW	250.2	265.3	266.7	249.9	248.5	246.1	238.2	241.3	243.8	247.6	249.0
Digital CS	182.3	261.8	304.2	338.3	352.3	362.1	373.7	368.5	350.1	273.7	245.6
110° digital CS				4.2	12.3	20.3	32.1	47.4	63.8	83.0	112.6
Cable TV	942.9	1,044.2	1,299.8	1,513.8	1,653.8	1,788.2	1,912.8	2,061.1	2,194.4	2,300.7	2,470.6

2. Japan's Standardization Strategies

Standardization Organizations, Forums and Consortiums



International Standardization Organizations

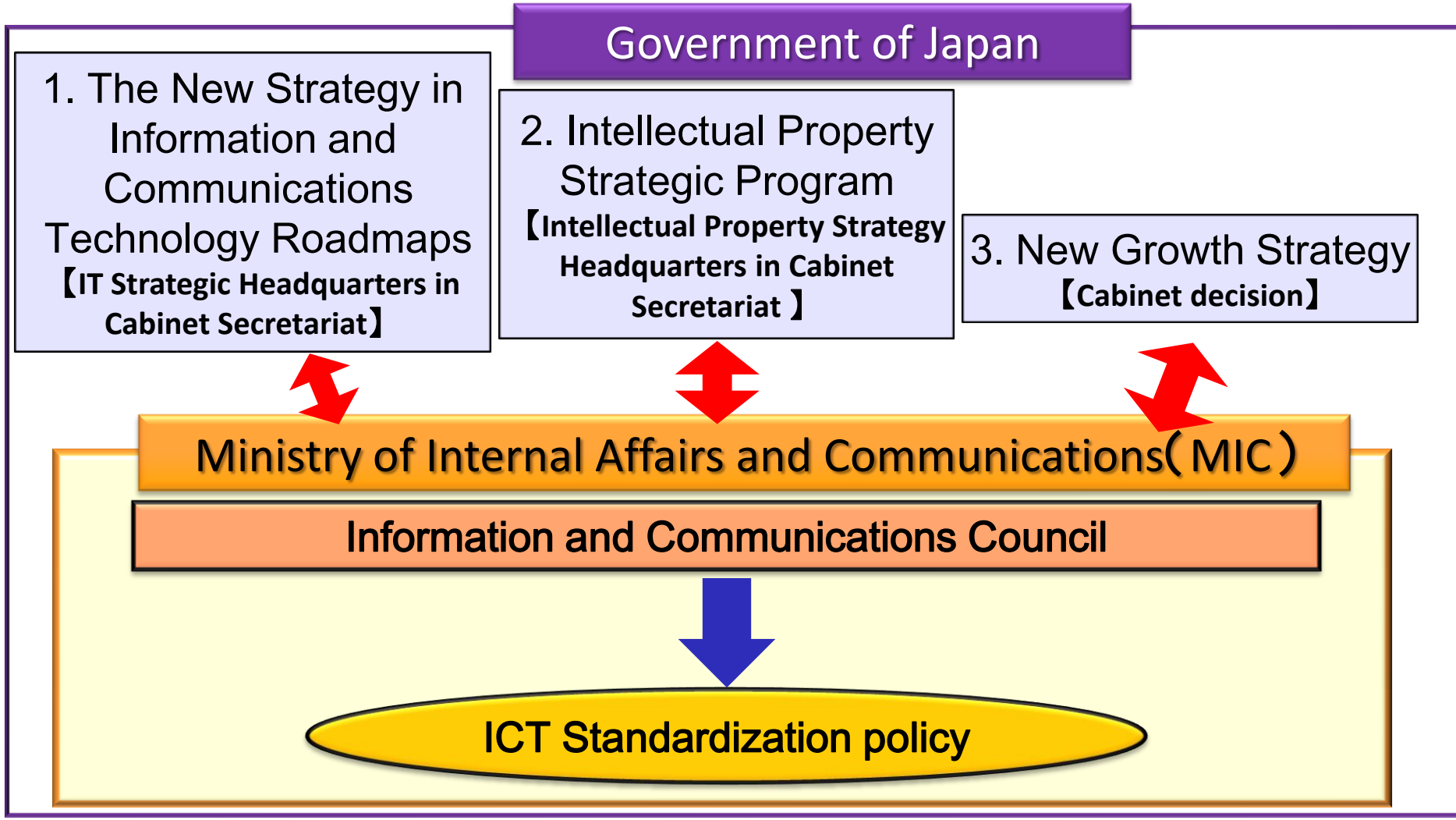
Regional Standardization Organizations

Forums ,Consortiums and Organizations

ITU: International Telecommunication Union
IEC: International Electrotechnical Commission
ISO: International Organization for Standardization
ETSI: European Telecommunication Standard Institute
TTA: Telecommunications Technology Association
ASTAP: APT Standardization Program
CITEL: Inter-American Telecommunication Commission
TIA: Telecommunications Industry Association
ATIS: Alliance for Telecommunications Industry Solutions
CENELEC: European Committee for Electrotechnical Standardization

TTC: Telecommunication Technology Committee
ARIB: Association of Radio Industries and Businesses
3GPP:3rd Generation Partnership Projects
OMA: Open Mobile Alliance
W3C: World Wide Web Consortium
DLNA: Digital Living Network Alliance
IEEE: Institute of Electrical and Electronics Engineers
IETF: Internet Engineering Task Force

Study framework for Standardization Strategies in Japan



standardization policy of ICT

The significance of standardization

The perspective of the consumer/user

- Securing safety
- Expanding choices by multi vendors

The perspective of increasing industrial competitiveness

- Expanding the scale of the market
- Increase in competitiveness

Changes in the technological environment

- Digitalization, The Internet.
- The trend toward user-drivenness.
- The increasing speed of evolution of products/services.

Changes in the "place" by standardization

- Players expecting speedy decision-making.
- Increase in cases decided on forum/ consortium in addition to international standardization organizations.

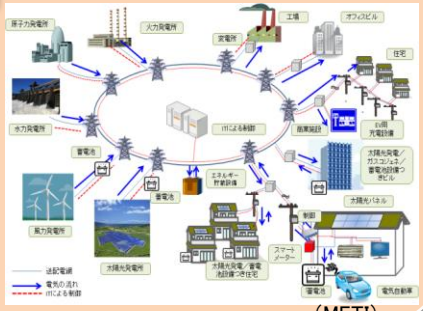
- Not only lower layers like basic infrastructures , but also high layers close to the application.
- Support standardization activities in forum/consortium in addition to international standardization organization .

Summary of key areas related to forum/consortium standards

（1）Smart grid

The mechanism to connect consumer electronics and meters to networks, and to achieve control of each apparatus in order to conserve energy within the home.

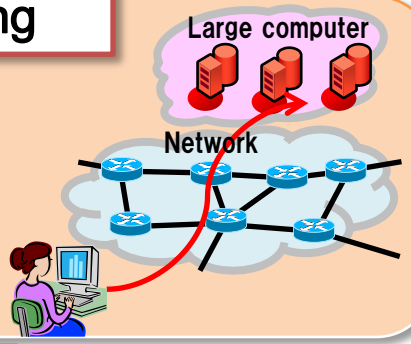
（home network）



（METI）

（2）Cluod computing

The mechanism to allow each user to use the functionality of a large computer center anytime, anywhere, using a small terminal.



（3）3D

The mechanism to allow a stereoscopic (3D) video to be able to be viewed with a home television through broadcasts/communication in addition to such package media as motion pictures and Blu-ray media.

（4）DigitalSignage

The mechanism to create digital images of flyers and advertisements for distribution via networks, according to the attributes of predicted passers, upon large screens at street corners and train stations.

In emergencies, timely disaster information would also be distributed.

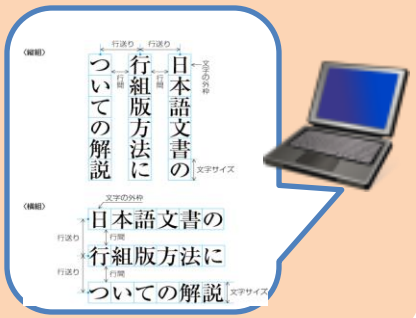
（5）Next Generation Browser

＜**Web and TV**＞

The mechanism for achieving the same functionality as a personal computer with a home television in order to allow display of images and videos which are upon the Internet.

＜**vertical writing**＞

The mechanism for displaying vertical writing in a network-type browser.



3. Example of promotion activities for integrated network managements

Promotion of standardization of integrated network management system

In order to allow each constituent element constituting an integrated network control system to deal flexibly with various communication protocols and various apparatuses/sensors, formulate interface requirements and implement verification for between constituent elements and within each constituent element. (Period of implementation: FY 2010)

【Environmental impact reduction by standardization of network interface】
NTT Corporation, Oki Electric Industry Co., Ltd. , NEC Corporation, Mitsubishi Electric Corporation

【Standardization for interface of interconnect platform and management platform, for reducing the environmental impact related to ICT systems】
NEC Corporation, Fujitsu Limited, NTT Corporation

HEMS/ BEMS

【Standardization of communication interface for building both home network and living environment information network to contribute to the reduction of impact on the environment】
NTT DOCOMO, INC. , Sekisui House, Ltd.

【Examination of information network communication protocol for utilization of EV(Electric Vehicle) to contribute to the reduction of impact on the environment】
NEC Corporation, NAMCO BANDAI Games Inc. , NTT DOCOMO, INC.

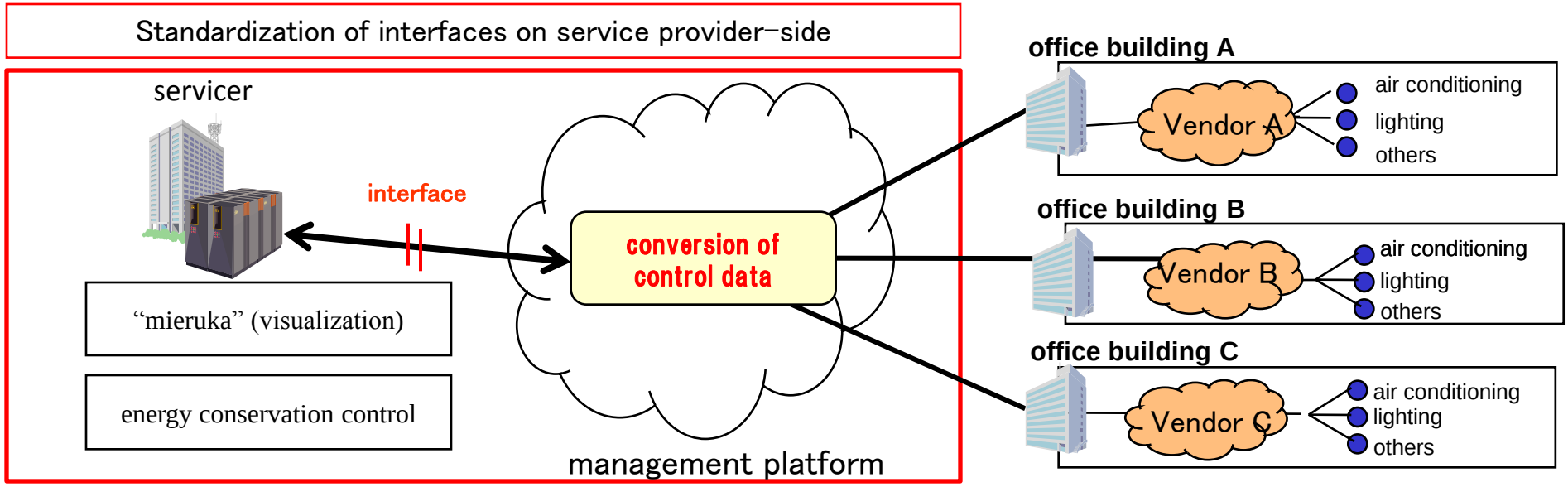
EV

【Standardization of the specifications of ultra-low power consumption metering communications and formulation of verification environment】
NPO Japan Utility Telemetering Associaion, FUJI ELECTRIC CO., LTD.

Smart Metering

Standardization for interface of interconnect platform and management platform, for reducing the environmental impact related to ICT systems

<Abstract>
In order to implement a system that remotely manages and controls devices for air conditioning, lighting and fire prevention in workplaces, factories, and public facilities, interfaces on service provider-side are formulated, verification of mutual connectivity is carried out using test beds, and international standardization of the formulated standards is performed.
<Implementing agency>
NEC Corporation, Fujitsu Limited, NTT Corporation
<Achievements>
① Formulate a standard for communication procedure for facility management, and standardize as IEEE 1888.
In addition, the formulated standard has been contributed to ASHRAE.
② Simplification and cost reduction in managing facilities in workplaces, factories, and public facilities is expected.
③ By way of the efficient energy conservation system, environmental impact reduction is expected.



Standardization of the specifications of ultra-low power consumption metering communications and formulation of verification environment

< Abstract >

In order to deal with the difficulties caused by the unusual environment such as heavy-snow and the progress of auto-locking of condominium apartments in urban area, and growing demand for service contributing to environmental impact reduction such as energy visualization / energy conservation operations, a specification of wireless network communication for telemetering system using the technology of low power consumption (multistage radio relays) is formulated, verification of implemented apparatuses is performed, and international standardization of the formulated standard is carried out.

<Implementing agency>

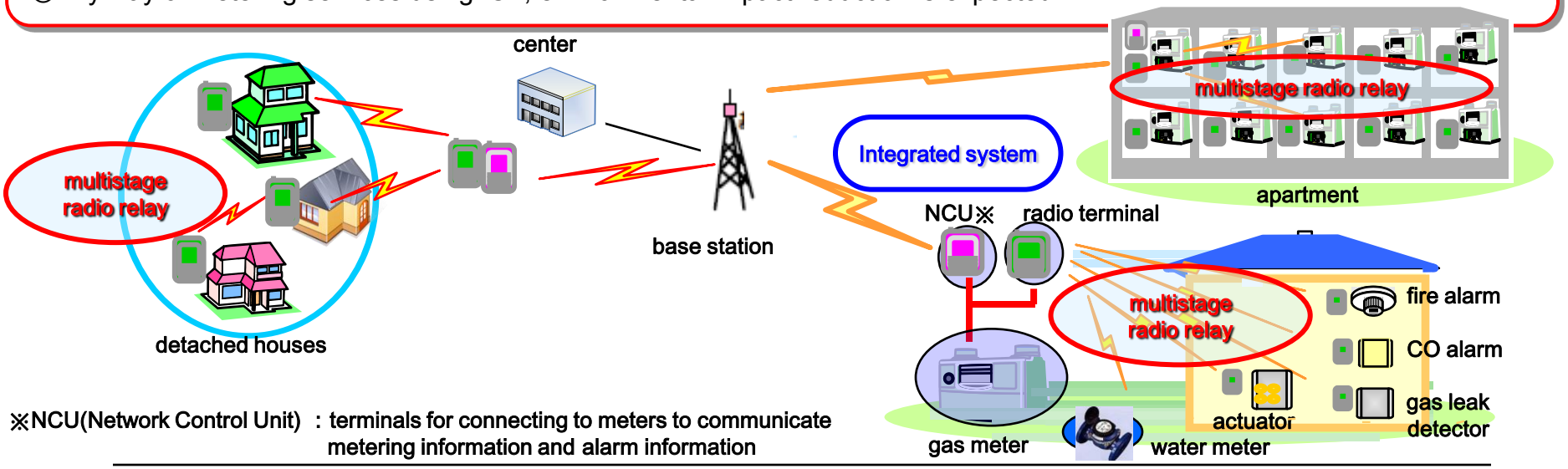
NPO Japan Utility Telemetering Associaion, FUJI ELECTRIC CO., LTD.

<Achievements >

① Formulate a standard, and implement a proposal to IEEE 802.15.4g. The proposed standard will be reflected to IEEE 802.15.4g .

② By international standardization of standards, decreases in costs, stable procurement and overseas deployment of metering systems are expected.

③ By way of metering services using ICT, environmental impact reduction is expected.



※NCU(Network Control Unit) : terminals for connecting to meters to communicate metering information and alarm information