Japan’s New IT Reform Strategy and u-Japan

22 November 2007

Deputy Director
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Telecommunications Bureau
Ministry of Internal Affairs and Communications of Japan

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Steps taken in Japan on IT strategies

- e-Japan Strategy (January 2001)
- e-Japan Strategy II (July 2003)
- e-Japan Strategy II Acceleration Package (February 2004)
- IT Policy package (February 2005)
- New IT Reform Strategy (January 2006)
- New IT Reform Strategy Package (April 2007)

◆ IT Basic Law
◆ Establishment of IT Strategy Headquarters (Director General: Prime Minister)

(Priority Area) Infrastructure development such as broadband infrastructure

(Priority Area) Valuing IT applications (7 leading areas)

1. Medical 2. Food 3. Life
4. Small and medium entities finance
5. Knowledge
6. Employment
7. Administration service

Global Era
Realizing a society where anytime, anywhere and by anyone benefits from IT. (Ubiquitous Network Society)

World’s cutting-edge IT evaluation

Priority Policy Program - 2006 (July 2006)

Network Society

ICT policy of MIC

u-Japan policy of MIC

2001 2003 2004 2005 2006 2007 ~
**Effects of e-Japan**

**Infrastructure**
- **High-speed Internet usage charge and subscribers**
  - Usage Charge approximately 1/3
  - Numbers of subscribers: 27.4 times
  - Mar 2001: 860,000 subscribers, 7,800 Yen
  - Mar 2007: 2,400 Yen

- **Percentage of national procedures that can be performed by electronic application and notification**
  - Mar 2001: 1%
  - Aug 2006: 96%

**e-Commerce**
- **Internet trading rate on the stock market**
  - Mar 2001: 5.8%
  - Mar 2006: 31.6%
  - 5.3 times

- **HP opening rate in public schools**
  - Mar 2001: 31.3%
  - Mar 2006: 76.1%
  - 2.5 times

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※Usage tariffs: Monthly usage charge for DSL Subscriber: Total of DSL, CATV and FTTH

※Sales base

Numbers of subscribers: 26.4 million

Effects of e-Japan
Broadband Infrastructures in Japan

Comparison of the fixed Internet charge as of February 2000

1st Geneva
2nd Paris
3rd New York
4th London
5th Tokyo
6th Düsseldorf

From “Survey of disparity between domestic and foreign prices concerning telecommunications services”, MIC (Comparison of 6 cities)

Broadband Charge

The end of 2002

1st Japan
2nd Korea
3rd Belgium
4th Hong Kong
5th Taiwan
6th New Zealand
7th Singapore

Early 2006

1st Japan
2nd Korea
3rd Taiwan
4th Iceland
5th Sweden
6th Singapore
7th Germany

※ The rates to be compared are converted to the rate per 100kbps from the data of offering speed and rate of DSL and Cable Internet in each country.
2002: from survey of ITU, specialized agency of UN

Broadband Speed (as of early 2006)

<table>
<thead>
<tr>
<th>Country</th>
<th>Speed (Mbps)</th>
<th>Japan</th>
<th>Korea</th>
<th>Singapore</th>
<th>Sweden</th>
<th>Finland</th>
<th>Holland</th>
<th>Taiwan</th>
<th>Italy</th>
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<tbody>
<tr>
<td>Japan</td>
<td>51.2</td>
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<td>Korea</td>
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<td>12.3</td>
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<td>Italy</td>
<td>12.3</td>
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</tbody>
</table>

※ Including Cable Internet

The rate of Internet-ready cellular phone (as of September 2004)

<table>
<thead>
<tr>
<th>Country</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>94.1</td>
</tr>
<tr>
<td>Korea</td>
<td>89</td>
</tr>
<tr>
<td>US</td>
<td>33.5</td>
</tr>
<tr>
<td>Austria</td>
<td>33</td>
</tr>
<tr>
<td>Finland</td>
<td>27.7</td>
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<tr>
<td>France</td>
<td>24</td>
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<tr>
<td>Italy</td>
<td>20</td>
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<td>Germany</td>
<td>19.9</td>
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<td>Switz.</td>
<td>14.8</td>
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<td>UK</td>
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<tr>
<td>Spain</td>
<td>12.8</td>
</tr>
<tr>
<td>China</td>
<td>10.3</td>
</tr>
<tr>
<td>Denmark</td>
<td>5.3</td>
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<tr>
<td>Portugal</td>
<td>3.8</td>
</tr>
</tbody>
</table>

※ Rate of mobile Internet subscribers within all cellular phone subscribers in dominant operators in each country

From "2005 White Paper Information and Communications in Japan", MIC
Change in the numbers of subscribers

(Unit: 10 thousand)

Change in the number of subscribers

<table>
<thead>
<tr>
<th>Year</th>
<th>Fixed Communications (Subscribers Telephone + ISDN)</th>
<th>Mobile Communications (Cellular + PHS)</th>
<th>Subscribers to High/Ultra High Speed Internet</th>
<th>IP telephone (DSL + CATV + FTTH + Wireless)</th>
</tr>
</thead>
<tbody>
<tr>
<td>'90/3</td>
<td>4,731</td>
<td>2,691</td>
<td>9,147</td>
<td>1,170</td>
</tr>
<tr>
<td>'91/3</td>
<td>5,907</td>
<td>3,825</td>
<td>8,665</td>
<td>2,000</td>
</tr>
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<td>'92/3</td>
<td>6,028</td>
<td>4,731</td>
<td>10,169</td>
<td>2,330</td>
</tr>
<tr>
<td>'93/3</td>
<td>6,133</td>
<td>5,245</td>
<td>8,112</td>
<td>4,330</td>
</tr>
<tr>
<td>'94/3</td>
<td>6,022</td>
<td>5,636</td>
<td>8,665</td>
<td>6,263</td>
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<tr>
<td>'95/3</td>
<td>5,961</td>
<td>5,245</td>
<td>10,169</td>
<td>6,133</td>
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<td>'96/3</td>
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<td>8,665</td>
<td>5,961</td>
</tr>
</tbody>
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Change in the numbers of Internet subscribers (as of March 2007)

- **Fixed Communications (Subscribers Telephone + ISDN):** 62.19 million
- **Mobile Communications (Cellular + PHS):** 62.82 million
- **Subscribers to High/Ultra High Speed Internet:**
  - **Optical Fiber (FTTH):** 8,803,898 Subscribers, 131 Operators
  - **CATV:** 3,609,625 Subscribers, 385 Operators
  - **Wireless (FWA):** 11,632 Subscribers, 26 Operators

Reversal in lead for number of contracts of fixed → mobile (November 2000)
Fixed: 62.19 million
Mobile: 62.82 million
Immediate challenges in Japan

“Declining birthrate and an aging population” is a key challenge

Transition of Japanese population

Immediate challenges in Japan

- There are a number of social problems after 2006, when Japan faces the declining birthrate and aging society.

Society and living
- Stop the population decline in 2007
- Create a livable environment for the elderly
- Win back faith in food safety
- Enhance local community relationships and reliability

Health care / Welfare
- Realize a patient-orientated remote medical care system
- Reduce malpractice by disclosing information
- Pension system reform

Transport and distribution
- Reducing traffic accidents, alleviating transport congestion and train crowding
- Create a barrier-free environment for the elderly and disabled

Education / Human resources
- Education emphasizing mathematics and sciences
- Reduce adolescent crimes
- Enhance international competition among undergraduate/graduate studies

Public safety and disaster prevention
- Eliminate fear of terrorism and serious crimes
- Measures for earthquakes, typhoons and major accidents
- Restore public order from crimes such as lock-picking

Environment / Energy
- Stop the evolving global warming
- Reduce waste and facilitate recycling
- Develop natural energies such as solar power
- Proper use of biotechnologies

Labor and employment
- Employment opportunities for the elder people
- Job opportunities for young workers
- Improve working environment for women
- Secure job-hopping and skills-based employment systems

Government administrative services
- One-stop administrative service in relocating
- Administrative cost cutting by computerization of procedure

International
- Presence in international organizations such as the UN
- Tight relationships with Asian countries

Economy / Industries
- Recover economy and enhance competitive power
- Prevent deindustrialization in the manufacturing industry
- Promote efficiency by ICT-based business management
- Promote Japanese culture and arts
The trend of ICT is a “Ubiquitous Network” where high expectations for the role of its applications is to be a trump card for problem solutions.

Wired
- Promotion of increasing shift to broadband and IP network through optical fiber
- Broadband users over 20 million

Wireless
- Dissemination of broadband, information appliances and RFID through radio wave such as 3G cellular phone and wireless LAN
- Accessible environment everywhere

Seamless convergence between wired and wireless lines

Realization of a “Ubiquitous Network” which is accessible anytime, anywhere, by anyone and through anything

Expectations to be a “trump card for problem solutions” in a society where the birthrate are declining and the population is aging.
By 2005

1st Pillar: Development of seamless ubiquitous infrastructure

Development of an ultra-high-speed network infrastructure
High-speed for 30 million households, ultra-high-speed for 10 million households
* DSL, cable, optic fiber (wired systems)

By 2010

Development of seamless ubiquitous networks
100% of the population to have high-speed or ultra-high-speed internet access
* Development of a seamless networking environment including shifting from wired to wireless and from networks to terminals, and elements such as authentication and data exchange

2nd Pillar: Using ICT to resolve 21st-century issues

Promoting ICT applications in seven priority fields
Health care, food, daily life, small and medium business finance, knowledge, labor and employment, and government services
* Focus on promoting information technology

Advanced ICT applications for resolving wider social issues
80% of the population to appreciate the role of ICT in resolving issues
* Reforming social systems and structures in order to address 21st century issues in health and welfare, environment and energy, disaster prevention and public safety, and education and human resources

3rd Pillar: Drastic upgrading of ICT usage environment

Information security measures
Adding the development of a safe and secure usage environment to the e-Japan Strategy II
* Specializing on information security measures

Allay concerns in connection with spread of ICT by improving the usage environment
80% of the population to feel comfortable with ICT
* Formulate 21 strategies for promoting the safety and security of ICT, and draw up a Ubiquitous Network Society Charter for worldwide release
Main objective: to attain the frontrunner targets for 2010

Main objective of e-Japan:
To be the world leader — achieved by 2005 —

Main objective of u-Japan
To be the world leader — leadership in 2010 —

Basic concept: evolving from “e” to “u”

e-Japan (2001-2003) infrastructure

e-Japan II (2003-2005)
uses

7 leading areas
Promote computerization
E-commerce, e-government

Resolve issues

Resolve issues

Establish usage environment
Ubiquitous network

Establish infrastructure

Narrowband

Broadband

Ubiquitous network

Promote use

U—Japan
Emergence of new values

ICT integrated into all aspects of everyday life at the grassroots level
Creative applications generating completely new forms of value
Basic Concept of u-Japan

u-Japan (Ubiquitous Net Japan)

 Ubiquitous
 Connects everyone and everything
  • An easy-to-use network anytime, anywhere, with anything and for anyone.
  • ICT will be everywhere in daily life for a user-friendly society
  • Person2Person plus Person2Goods, and Goods2Goods
  • In every aspect, communication will take the more important role in society

 Universal
 User-friendly
  • Gentle with people
    • Can be used by anyone without thinking of the equipment or network
    • The aged and disabled will be able to participate in society with ICT
  • Interaction
    • A heart to heart interaction overcoming barriers between generations and localities to create togetherness

 User-oriented
 From the user’s point of view
  • Close to the user
    • For a society that is user-orientated than a society where objects are given by the supplier
    • Developing technologies and services that are connected to our needs

 Unique
 Be something special
  • Create individual energy
  • A new society where your dreams come true
  • Vitalize the society
  • Create new social systems and business services
  • Get out from the norm and realize local revitalization with creativity

4U=For You

u-Japan is the next generation ICT society from 2010
Outline of the “u-Japan Policy”

Japan will lead the world in 2010 as the world’s cutting-edge “ICT nation”

**Target**

By the year 2010, 100% of the population to have high-speed or ultra-high-speed Internet access

By the year 2010, 80% of the population to appreciate the role of ICT in resolving social problems

By the year 2010, 80% of the population to feel comfortable with ICT

**Organized cooperation between civil, industry, academic and public sector**

**Operation sheet and PDCA**

Japan will become the world’s cutting-edge “ICT nation” by 2005.

**Present Status**

Regional divide exists when about 10% of municipalities don’t have access to broadband.

45% of ICT users value ICT as useful for problem solution. They use it only for browsing websites.

About one third of users feel insecure when using the Internet.

**u-Japan Policy Package**

Regional divide exists when about 10% of municipalities don’t have access to broadband.

**Measures to implement**

1. Civil, Industry and Academy are main players (Public improves the environment)
2. Variety of stakeholders participate in policy implementation
3. Effective role sharing

**Development of ubiquitous networks**

Preparation of an environment having seamless access to wire and wireless networks

Preparation of broadband infrastructures on a nationwide basis

Establishment of networks among products that have been embedded with various types of ICT equipment

Preparation of infrastructures for network collaboration

**Advanced usage of ICT**

Social system reform in advance through ICT

Promotion of content creation, distribution and use

Promotion of introduction of universal designs

Employment of ICT human resources

**Upgrading enabling environment**

Identification and clarification of “negative” problems to be resolved

Promotion of “21 strategies for ICT’s Safety and Security”

Response to important issues becoming obvious

Formulation of the "Charter for Ubiquitous Network Societies"

**Partnership**

Public (state) | Partnership | Public (municipality)

Academic | Citizen | Industry

1. Civil, Industry and Academy are main players (Public improves the environment)
2. Variety of stakeholders participate in policy implementation
3. Effective role sharing

**International strategy**

Promotion of policies not only for domestic society but also for international markets and networks

**Technology strategy**

To strategically promote R&D and standardization in priority areas, and to strengthen international competitiveness through innovations

**PDCA**

A. Measures

B. Implementation

C. Evaluation and Improvement

Feedback
u-Japan Policy Package (1): Development of Ubiquitous Networks

Establish seamless access environment (wired and wireless)
- Steady promotion of spectrum release strategy
- Promoting the convergence of fixed and wireless (FMC)
- Promoting the linking of communications and broadcasting
- Upgrading IP infrastructure

Nationwide establishment of broadband infrastructure
- Resolving the broadband divide
- Promoting regional computerization
- Promoting digital broadcasting
- Promoting competition policies

Establishing a network of real objects
- Technical development of electronic tags, sensor networks and network robots
- Connecting information appliances with networks
- Creative use of ITS and GIS
- Developing ubiquitous terminal terminology (moving away from the traditional computer)

Establishing network collaboration infrastructure
- Development of ubiquitous platforms
- Securing interoperability between networks of different industries
- Securing high network reliability
- Development of e-commerce infrastructure

By 2010, 100% of citizens to have access to high speed or ultra-high speed

Expectations towards ubiquitous networks providing easy access to any information to anyone, anytime, anywhere

Establishing seamless ubiquitous networks
- Promote enlargement of cyberspace and penetration into actual object space

e-Japan Strategy and others bring about the firm establishment of high-speed and ultra-high-speed networks mainly based on wired systems
Example: e-Japan Strategy targets (high-speed for 30 million households, ultra-high-speed for 10 million households) already achieved in terms of infrastructure development
e-Japan Strategy II and others bring about the firm establishment of ICT also fields where utilization is lagging behind
Example: Seven priority fields of e-Japan Strategy II: health care, food, daily life, small and medium business finance, knowledge, labor and employment, and government services

ICT expected to resolve problems piling up with the declining birthrate and the aging population, etc.

Use ICT to resolve 21st century issues
~ Shift to using ICT to resolve social issues ~

By 2010, a society where 80% of citizens find ICT useful for resolving issues

Leading social system reform via ICT
- Education on social and business management reforms via ICT
- Reforming systems to encourage the use of ICT
- Reforming distribution systems
- Promoting e-government

Promoting universal design
- Developing advanced agent technology
- Improve user interface
- Secure information accessibility
- Construct a support system for the use of ICT by elderly and handicapped

Promoting the creation, distribution and use of contents
- Establishing an environment for the distribution and payment, etc. of digital contents
- Promoting construction and use of digital archives
- Creating attractive contents
- Establishing a Japanese brand using soft power

Environment and energy

Disaster prevention and public order

Education and human resources

Use of ICT human resources
- Nurturing advanced ICT human resources
- Supporting creation of ICT venture companies
- Literacy and education reform
- Encouraging citizen participation

Health care and welfare
On the other side of the expectations towards the ubiquitous network society, there are actually many concerns and obstacles left. E.g.: “Always” ↔ 24-hour network connections may pose privacy issues

Deepen the understanding about negative aspects and identify the issues

**Drastic improvement of ICT usage environment**

~ Resolve concerns and obstacles of the ubiquitous network society as soon as possible ~

**Identification of issues related to negative aspects**

- Concretely identify 100 negative aspects of the ubiquitous network society in ten categories
- Survey 100 experts mainly in the ICT field to establish a priority ranking

**Promoting 21 ICT safety and security strategies**

- Identify 21 priority issues with major social impact requiring more attention and develop strategies for addressing them

**Response to emerging important issues**

- Identify important emerging issues that are unique to ubiquitous network societies

**Establishing a Ubiquitous Network Society Charter**

- Comprehensive charter statement for worldwide release setting out the basic principles and shared understandings of ubiquitous network societies

- Free and diverse information distribution
- Safe and secure information distribution
- Support
- Constructing a new social infrastructure

**80% of the population to feel comfortable with ICT by 2010**
Concrete Usage Scenes of Ubiquitous Technology

When used by self-appointed creator

You can be an accomplished creator when all of you make the most of what you have.

Let’s make a musical by ourselves!

Scenario writer

Costumer

Choreographer

Musician

You can collaborate with remote members using a multi-screen.

What shall we buy for his birthday present?

I think the best way is to ask him.

Do you have a minute?

A moment, please. I’ll switch to the large screen.

Which one do you want for your birthday present?

It’s just like I’m with my grandpa! There are so many toys!

You can get your present anywhere through seamless communications even when changing the terminals.

When used by grandfather and grandchild

Efficiency in production management processes within corporations

Example of supply-chain management for apparel company
(management of orders, stock and distribution)

Weaving factory

Apparel distribution center

Retailer

- distribution history
- stock information

Reference: product code
Color
Size etc.

Reading via RFID tag reader

RFID tags

Shipping inspection

Inspections of incoming shipments, etc.

Example of system to support appropriate provision and application of medicine at hospitals etc.

Medicine storage room

Medical DB

RFID Tags

Check it is correct patient

Check amount of medicine given

Check type of medicine given

Penetration of ICT use into all areas of industry

Example of system to support appropriate provision and application of medicine at hospitals etc.

Medical DB

Check

RFID Tag

Check it is correct patient

Send alarm if incorrect

Send alarm if amount incorrect

Send alarm if incorrect

Example of system to support appropriate provision and application of medicine at hospitals etc.

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Invitation to enter u-Japan Best Practice Prize Contest - “u-Japan Grand Prize” -

As a continuation from last year, an invitation is extended to enter “u-Japan Best Practice 2007” prize contest (Jan. 29 to Mar. 9, 2007)
The underlying purpose of the contest is: 1) to accumulate actual cases of ICT service system, in which people are connected to people as well as things in all walks of life and where various problems in life and business situations are solved; and 2) to diffuse the accumulated information to the society at large as models for the use of ICT service system in a ubiquitous society.

u-Japan Grand Prize will be awarded to especially excellent cases out of all entries.

"u-Japan Grand Prize" (Cases of winners in 2007)

<table>
<thead>
<tr>
<th>Division of the prize</th>
<th>Name of service or system</th>
<th>Overview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grand Prize</td>
<td>“Bedside safety control system using RFID (Radio Frequency Identification)” (Akita University Hospital)</td>
<td>A practical system to prevent malpractice by attaching RFID on injection drugs and patient wrist bands, and linking them with electronic medical records via wireless LAN on real time basis. The effect of the system is verified in daily examinations, where the ubiquitous network technology is contributing to the improvement of safety in medical care.</td>
</tr>
<tr>
<td>Life division prize</td>
<td>“Community-based data broadcasting (“Nandemo TV” { Everything Television})” (Reinan cable network Co., Ltd.)</td>
<td>Community-based data broadcasting service. As a regional cable TV station, it provides information closely connected to the life of the citizens via data broadcasting, such as announcement from the municipal government, town meeting, school, etc. as well as community information on the website.</td>
</tr>
<tr>
<td>Life division prize</td>
<td>“Educational support project for capacity building of human resource in charge of the future of the region” (Fukushima Prefecture’s board of education, Benesse Corporation)</td>
<td>Implementation of an effective initiative as a model project for a new framework of public education, where “e-learning” plays a central role in attempting to improve the motivation of students to study in remote areas and mountainside or mountainous areas as well as teachers’ ability of instruction.</td>
</tr>
<tr>
<td>Business division prize</td>
<td>“New work style system by thin client with free address and high security” (Hitachi, Ltd.)</td>
<td>Realization of ubiquitous operation by introducing thin client, IP phone, etc., aiming for the improvement of productivity and motivation of white-collar workers. It contributes to ensuring high security, improvement in the ability of employees to make proposals by improved efficiency of operation, improvement in the space efficiency, etc.</td>
</tr>
<tr>
<td>Business division prize</td>
<td>“FOMA TV phone alcoholic check system” (NTT DoCoMo, Inc.)</td>
<td>A manager in a sales office can talk face-to-face with his driver in a far place by using TV phone function of the third generation mobile phone, FOMA. In addition, an alcoholic sensor connected to FOMA will transmit the measurement data automatically, of which result the manager can confirm immediately.</td>
</tr>
<tr>
<td>Screening Committee special prize</td>
<td>“Mobile security infrastructure” (Hitachi, Ltd., NTT DoCoMo, Inc., KDDI R&amp;D Laboratories, NEC Corporation)</td>
<td>High security mobile authentication infrastructure system, with interoperability between different mobile phone operators. Mobile service operators can fine-tune their controls in accordance with various attributes of mobile phone users, such as age, sex, etc. Meanwhile, mobile phone users can receive safe and secure service without relying on the communication networks.</td>
</tr>
</tbody>
</table>
Bedside safety control system using RFID (Akita University Hospital)

**Features of this system**
- Seamless linkage of RFID, wireless LAN, PDA and the hospital information system enables:
  - the system to be available at bedside anywhere in the hospital
  - anyone to read very easily
  - speedy reading in a hurry
  - the first application of RFID, the state-of-the-art technology, to bedside operations in Japan, to contribute to the solution of problems at hospitals

**Effect of this system**
- **Improved medical safety**
  - Decreased number of incidents
  - Prevention of mix-up before it happens
  - Peace of mind of the staff
- **Improved operational efficiency**
  - Easy to read
    (Strained bands and intravenous [IV] drips, soiled tugs)
  - Shorter operation time
    (1/2 of bar-code system)
  - Assured dosage record
    (juggling checking of drugs and keeping dosage record)

**Hospital Information system**
(Effective medical record system)
- When patient-drug coupling is correct, record data of administering a dose (who, what, to whom, when)
- When patient-drug coupling is incorrect, indicate a warning, and prevent dispensing of false dosage of medicine
Promotion of ICT Utilization

【General】
1. Promotion of establishment of regional ICT-utilization models: Contracts between municipalities and the MIC
2. Standardization of “Telecommunication Accessibility Guidelines” by the ITU-T
3. Establishment of “Ubiquitous Special Zone”
4. Operation of Electronic Signature Act: Inference of e-record authenticity

【Education】
5. Development of programs to foster ICT media literacy via entrusted private companies
6. Promotion of school LANs deployment: Introduction of school LANs model plans
7. Implementation of “E-net caravan”: Guidance for secure and safe use of the Internet
【Human resource development】
8. Support for ICT training: For designing ICT system, production of broadcasting programs etc
9. Support for human source development on ICT security via YRP

【Work】
10. Establishment of “Tele-working population doubling plan”
11. Tax break for tele-working facilities: for fixed assets local tax

【Public Administration】
12. Promotion of e-Government and e-municipality
13. Promotion of ICT in the field of fire prevention and control
Outline of Japanese Telecom Competition Policy

From monopoly to competition

1985 ~
- Introduction of market principles
- Privatization of NTT--PC

Further promotion of competition

1997 ~
- Reorganization of NTT (1999)
- Deregulation of market entry restriction
- Abolition of foreign investment regulation (except for NTT and NTT regional companies)
- Establishment of interconnection rules (introduction of LRIC model)

From “ex-ante” regulation to “ex-post” regulation

2001 ~
- Strengthening of asymmetric regulations
- Establishment of USF mechanism
- Setting up of Telecommunications Business Dispute Committee

2004 ~
- Abolition of Type I and Type II business categories
- Drastic deregulation of price and tariff regulations
- Introduction of competition review mechanism

Review of Competition Rules corresponding to transition to full IP-based networks

- From monopoly to competition
- Further promotion of competition
- From “ex-ante” regulation to “ex-post” regulation

Age of Telephony
Emergence of Internet
Transition to Full IP-based networks

Review of competition rules through transparent procedures
Current Status of Japanese Telecom Market

Number of competitive telecom carriers

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<thead>
<tr>
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<tbody>
<tr>
<td>87</td>
<td>738</td>
<td>1,259</td>
<td>4,726</td>
<td>9,348</td>
<td>14,449</td>
</tr>
</tbody>
</table>

Structure of NTT group (reorganized in July 1999)

- NTT (Holding company)
  - NTT DoCoMo
  - NTT Communication
  - NTT East
  - NTT West

NTT regional companies own 93% of all the access lines. (as of the end of March 2007)

Regulated under NTT Law
## Market Share of NTT East and West

(As of the end of March 2007)

<table>
<thead>
<tr>
<th>(Share by number of lines)</th>
<th>Copper lines</th>
<th>Copper&amp;fiber&amp;CATV lines</th>
<th>FTTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper lines</td>
<td>99.9%</td>
<td>92.5%</td>
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<tr>
<td>FTTH</td>
<td>78.9%</td>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(Share by revenue)</th>
<th>Fixed telephone (including ISDN)</th>
<th>ADSL</th>
<th>FTTH service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed telephone (including ISDN)</td>
<td>90.6%</td>
<td>38.0%</td>
<td>69.0%</td>
</tr>
</tbody>
</table>
### Outline of Designated Telecommunications Facilities

#### Service regulations

- Access lines with more than 50% share (designated on a prefectural basis)
- Telecommunications facilities serving a relatively larger proportion of subscribers

#### Restrictions

- Facilities without any essentiality although the number of providers is limited due to availability of frequency
- Access lines with more than 25% of share (designated on a business area basis)

#### Interconnection rules

- Authorization of interconnection tariffs
- Rules for interconnection tariffs (e.g. LRIC)
- Development of interconnection accounts

#### Facilities

- Telecommunications facilities (fixed) designated as essential facilities
- Access lines and related telecommunications facilities

#### Criteria

- Access lines with more than 50% share (designated on a prefectural basis)
- NTT East and West

#### Tariff and price (cap) regulation

- Restrictions of information usage only for specified business
- Equal treatment of other companies
- Equal treatment of manufacturers, etc.
- Firewall with specified carriers

#### Interconnection tariffs

- Notified as necessary in case of exceeding 25% of the above weight returns
- NTT DoCoMo, etc.

- Telecommunications facilities (mobile)
- Type II designated facilities (mobile)
Basic Directions for Reviewing Dominant Regulations

- **Market dominance**
  - **bottleneck**
    - Essential facility
  - **Other market dominance**
    - Caused by oligopolistic market environment

- Identify the market having possibility to abuse market dominance* (vertically and horizontally)
- Identify submarkets (converged markets)* (Focus to be shed mainly on the horizontal equivalent competition)
- Identify the market having possibility to abuse market control power* (vertically and horizontally)

- Leverage of market dominance on relevant markets
- Possibilities of collective dominance in collaboration with allied companies

*mark indicates the possibility to take advantage of competition review mechanism.
Changes in Market Environment and Review of Competition Policy

Changes in competitive environment

(1) Progress of broadband deployment
(2) Development of horizontal market integration
(3) Development of vertical market integration

Development of horizontal market integration

Integration of voice, data, video, fixed, mobile, regional, long distance, international.

Horizontal integration

From “intramodal” competition to “intermodal” competition

Development of vertical market integration

Integrated Services
- “packet based”
- “ubiquitous”
- “communication”

Vertical integration

“New Competition Promotion Program 2010” (September 2006)

Related to a review of a framework of competition rules to address the transition to IP-based networks, define a road map for deliberation to be implemented by the early 2010s. 
Position of the “New Competition Promotion Program 2010”

**Present (2006～)**

**Transition from PSTN to full IP based networks**

**Establish fair competition rules**

“New Competition Promotion Program 2010”

Facility-based competition promoted by:
- Promote further opening of poles, etc. owned by NTT E/W and electric power companies
- Promotion of opening fiber-optic network installed by local governments to telecom carriers
- Promote introduction of new wireless access technology

Competition environment improved by:
- Progressive revision of dominant regulations
- Establishment of competition safeguard in response to NTT’s med-term management strategy
- Establishment of interconnection rules related to NGNs to be developed by NTT
- Review of access charge calculation method (copper and optic fibre)
- Promotion of MVNOs into the mobile market

Other key measures include:
- Promotion of further competition in terminal layer
- Review of USF mechanism
- Improvement of dispute settlement mechanism

Consideration of comprehensive legal framework including telecommunications and broadcasting

**Early 2010s**

IP based networks recognized as principal networks to replace PSTN

**Comprehensive review**

Periodical review (on annual basis) and revolving of the program

**Status of NTT**

Will be concluded following consideration in 2010, based on status of broadband deployment and the progress of NTT’s medium-term management strategy

**Comprehensive legal framework**

Including telecommunications and broadcasting

Will be concluded by 2010
Main Policies of New Competition Promotion Program 2010

Comprehensive Review of Competition Rules to Address the Shift to IP Based Networks (Comprehensively implemented by early 2010s)

1. Promotion of Facility Based Competition
   - Promotion to Use Physical Networks Owned by Local Governments etc.
   - Promotion of Diversification of Access Networks (wireless, etc.)
   - Review of Open-up obligation (Dominant regulation)
     - Introduction of Competition Safeguard System (from FY 2007)
     - Comprehensive review of Open-up obligation (implementation will be launched by FY 2010.)
   - Review of Calculation Method for Interconnection Charges of NTT E&W
     - PSTN (concluded in 2007)
     - Fiber Optic (consideration followed by application by NTT East&West)
   - Improvement of interconnection rules for NGNs

2. Review of Interconnection Policy
   - Consideration ("feasibility study" in 2007 to be followed by precise consideration at the Information and Communications Council in 2009)

3. Review of Universal Service System
   - Review of the Price Cap Regulation

4. Review of Tariff Policy
   - Promotion of Competition in the Mobile Communication Market (concluded in 2007 summer)
   - Study concerning the Network Neutrality principles (concluded the first recommendations in 2007 summer)

5. Other Main Policies
   - Others (Strengthening dispute settlement functions)