1.3 u-Japan

1. What is u-Japan?

u-Japan is the name of Japan's current national ICT strategy/policy. The "u" refers to "ubiquitous" which means existing or being everywhere at the same time. It was officially announced by Japan's Ministry of Internal Affairs and Communications (MIC) in Dec 2004 and has been in effect since 2005, essentially replacing the e-Japan strategy. It is already well into the implementation phase. u-Japan aims to realize a ubiquitous network society in Japan by 2010 in which anyone can be connected to a network to harness ICT, anytime and anywhere.

The 'u' in u-Japan has a few more sub-meanings. 'Universal', 'User-Oriented', and 'Unique'. It is universal so anyone can utilise ICT regardless of age or ability. It is user-oriented because products and systems would cater specifically to the user's needs and applications would be developed from the users viewpoint, and less product-oriented. It is unique as with the help of cutting-edge technology, Japan's social landscape will be totally reshaped and new creative business opportunities can be created.

2. Policy Measures

2.1 Preparation of Ubiquitous Networks

Under the u-Japan initiative, people would be able to utilize technology-based services without the need to understand the technical intricacies or know what type of network they are using (wired or wireless). Users may not even be aware of the presence of a network and accessing one will be seamless. The infrastructure of ICT would also be enhanced to reach out to the common people as much as possible - cost will not be a factor and everybody can enjoy the benefits of ICT. Below are some tasks in which Japan is undertaking to achieve this:

- Push the 4G (4th generation) mobile phone standards and technology
- Upgrade IP (Internet Protocol) infrastructure by researching and developing a super fast speed Internet satellite, 10 terabit optical router
- Manufacture information appliances[1] that use IPv6 technology
- Reduce/eliminate the broadband divide between individuals and geographic areas at different socio-economic levels
- Develop network robots for use in remote control and communication
- Research and use RFID tags for food traceability, medical industry, etc.
- Research and encourage the use of Web Services[2]

> By 2010, the goal is to have 100% of the population equipped with "high speed or ultra high speed Internet access".

2.2 Advanced Use of ICT

The u-Japan strategy emphasizes on using ICT to resolve Japan's wide range of social problems like falling birthrates and aging population. Japan does not want the aged and disabled to be left out in the digital age and will accommodate them in future ICT plans. Other problems include anything from train overcrowding to a high rate of juvenile crimes. Basically, it involves integration of ICT into various industries and aspects of everyday life. Some examples of what Japan is doing in order to bring the utilisation of ICT to a whole new level:

- Introduce computerized and long distance medical care
- Develop e-government services
- Use RFID tags to improve the efficiency in product distribution system
- Introduce telecommuting to civil servants and by 2010, have 20% of the working population classified as telecommuters
- Revise the digital content[3] copyright act so as protect the rights of owners and encourage the buying and selling of digital content
- Research new technologies for digital movie screenings
- Set up more online archives for educational purposes and create quality digital content for broadcasting locally and overseas
- Develop technologies to aid in the study of Anthroposemiotics(understanding how humans communicate)
- Reduce costs for researchers developing ICT for the elderly and disabled
- Provide financial support for ICT-based business startups
- Train more people to specialize in ICT (Japan aims to have 1.5 million ICT specialists)
- Include ICT related exams as a criteria for admission to university

> By 2010, Japan wants "80% of the population to appreciate the role of ICT in resolving social problems.

Below is a list of social problems that Japan hopes to eradicate:

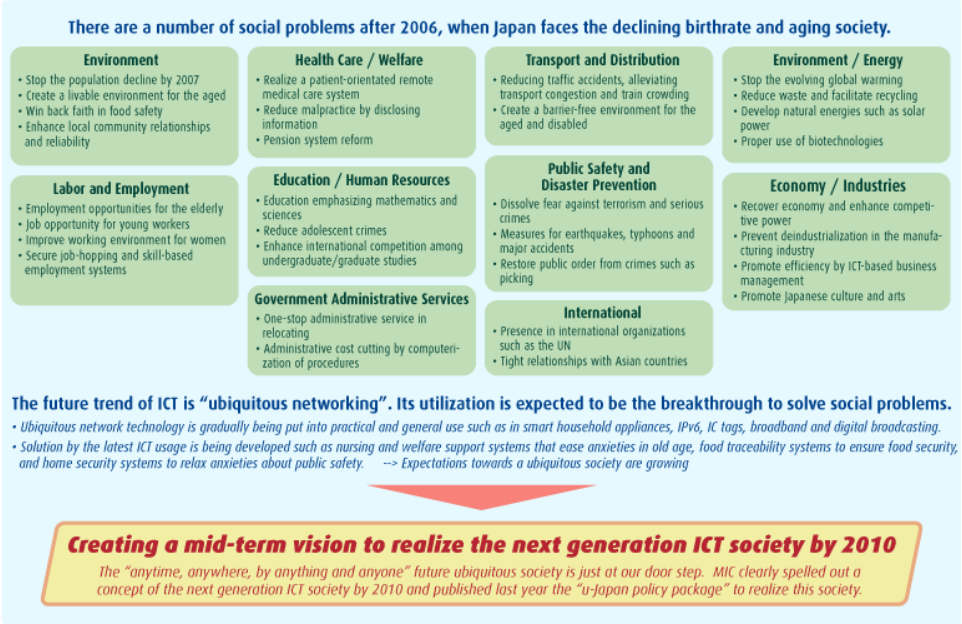


Image Source: Ministry of Internal Affairs and Communications, u-Japan

2.3 Improving Environment for ICT Use

As networks continue to be more ubiquitous throughout Japan and ICT becomes prevalent in people's lives in one way or another, potential new problems and issues will undoubtedly arise. Privacy of data, dangers of of e-commerce transactions, spam, piracy of digital content, online gambling and even unsafe implanting of gadgets into the human body, are just a few of the items MIC has identified in its "100 negative aspects of the ubiquitous network society" list. Japan wants an environment that is safe and secure for the usage of ICT so people will trust technology. From the list of 100, the MIC has whittled it down to 21 key areas to focus on, which are:

Protecting personal information held by public institution and companies	Privacy protection in medical care	Response to computer viruses
Improving awareness of information security among general users	Conquering information network vulnerabilities	Response to malicious business practices using the Net
Securing the safety in electronic payment	Response to junk mail	Method of protecting copyright for digital property
Elimination of lack of reuse of content	Intellectual property strategies	Ethics of science in Information Technology R&D
Promoting the use of ICT in education	Cancellation of lack of advanced ICT human resources	Eliminating the regional divide in advanced services
Reviewing the priority of ICT in establishing social capital	Elimination of the divide in e-government	Wholesomeness of impact on youth development
Increasing convenience of e-government	Promoting the use of ICT in medical care	Standardisation of work of local authority

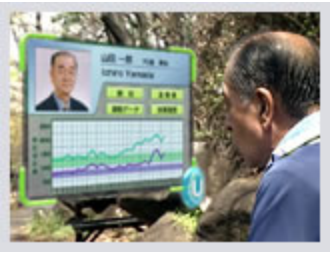
By 2010, Japan wants "80% of the population to feel comfortable with ICT."

3. u-Japan in Daily Life

If u-Japan is successfully executed, many exciting new possibilities will be made available. Scenes from futuristic science-fiction Hollywood movies may just become reality. Below are some case scenarios (source of photos - MIC):

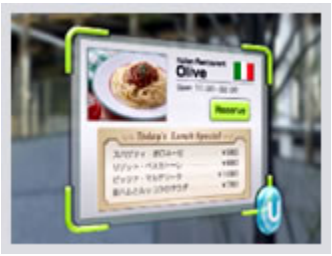
Case 1: Remote Medical Care

Grandpa Takezawa is suffering from hypertension and he needs to monitor his blood pressure and heartbeat regularly. He goes to the park daily to exercise. With the advanced usage of ICT under the u-Japan initiative, his biological data (temperature, pulse, blood pressure, etc.) can be transmitted to his doctor in real-time as he is exercising. Together with the patient's historical medical data, the doctor can assess Mr. Takezawa's fitness level remotely, and then inform him immediately about his condition and determine whether he needs any medical treatment.



Requirements:
- Sensing technology (See Mobile Telephony > New Trends > Health)
- Ubiquitous terminal
- Ubiquitous network technology
- Privacy & Security Technology

Case 2: Independent Blind Man



Mr. Hiroshi is blind. Everyday, he walks from Street A to Street B to buy his lunch. He first checks for any good nearby places to eat using his ubiquitous terminal. Throughout his journey, he is guided by all kinds of ICT. He can be warned of any obstacles in his path, be informed if the green light is on, and be given directional instructions to his destination. When he finally reaches his favourite cafe, he can start ordering some food. All this despite his disability.

Requirements:
- Location information technology
- Navigation technology (GPRS)
- Ubiquitous terminal
- RFID Tag technology
- Transportation-related Technology (DSRC: Dedicated Short Range Communication)
- Sensor Network Technology
- Ubiquitous Network Technology (Next Generation Mobile Networks, wireless LAN, etc.)

4. u-Japan in Business & Industry

4.1 Business Management:
In the last decade, e-commerce has become increasingly popular for airline/movie e-ticketing, online restaurant/car rental reservations, etc. With the ubiquitous network technologies in place, Japanese cooperations have greater flexibilities in connecting with one another which leads to a significant change in business processes like procurement and distribution of goods and services.

4.2 Supply-chain Management:
RFID tags can facilitate and improve the business Supply Chain Management. RFID tags with identification codes are attached to products and from these ID codes, products can be monitored and traced from the production process, to the distribution channels, to the retailers, and finally to the users. This will raise the overall quality control and standard and minimise inventory that will ultimately increase business productivity.

4.3 Document Management:
In a ubiquitous environment, anyone will be able to access his/her own data and applications without any restrictions on terminal use. That means users are not dependent on any specific terminal to retrieve their own documents. This is the result of information being stored on network servers instead of the terminal itself. RFID tags can also be attached to documents to enable users to track the locations and movements of their personal documents for security purposes.

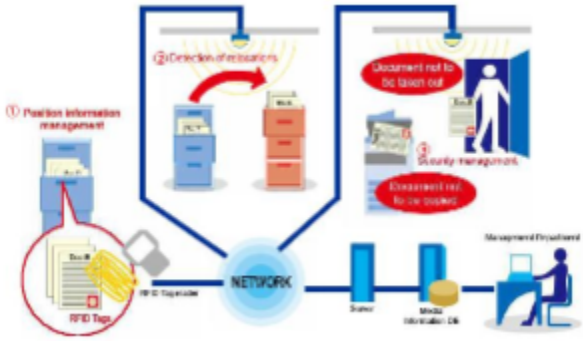


Image Source: The above 3 diagrams are extracted from Keio University, Chinnapat Sertthin's u-Japan policy presentation.

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[1] An information appliance is a term used to refer to "a wide range of computer devices expected in the near future that will allow users to access information on the Internet with easy-to-use interfaces" (Wiley).

[2] A web service is a web component (application/module) that can easily be reused. It allows application integration across different technologies and platforms.

[3] Digital content is any piece of content in electronic form. It can be a graphic art, a game, a software, a song, a video, an essay, an e-book, etc.

References

1. Ministry of Internal Affairs and Communications, u-Japan

2. TidWiT Digital Content Marketplace
3. Managed Methods - Glossary
4. Wiley - Glossay:I
5. Keio University (School of Open and Environmental System): Chinnapat SERTTHIN, U-Japan Policy