

I. Use of Ubiquitous Networks by Individuals and Companies

1. u-Japan

- ◆ “u-Japan” is what Japan will be like in 2010 when information and communications technology (ICT) will be applied toward resolving various problems in society. Among the four principles—“ubiquitous,” “universal,” “user-oriented,” and “unique”—“ubiquitous” plays the key role. u-Japan is characterized by “person-to-person” and “goods-to-goods” communications.

Figure 1: The u-Japan concept

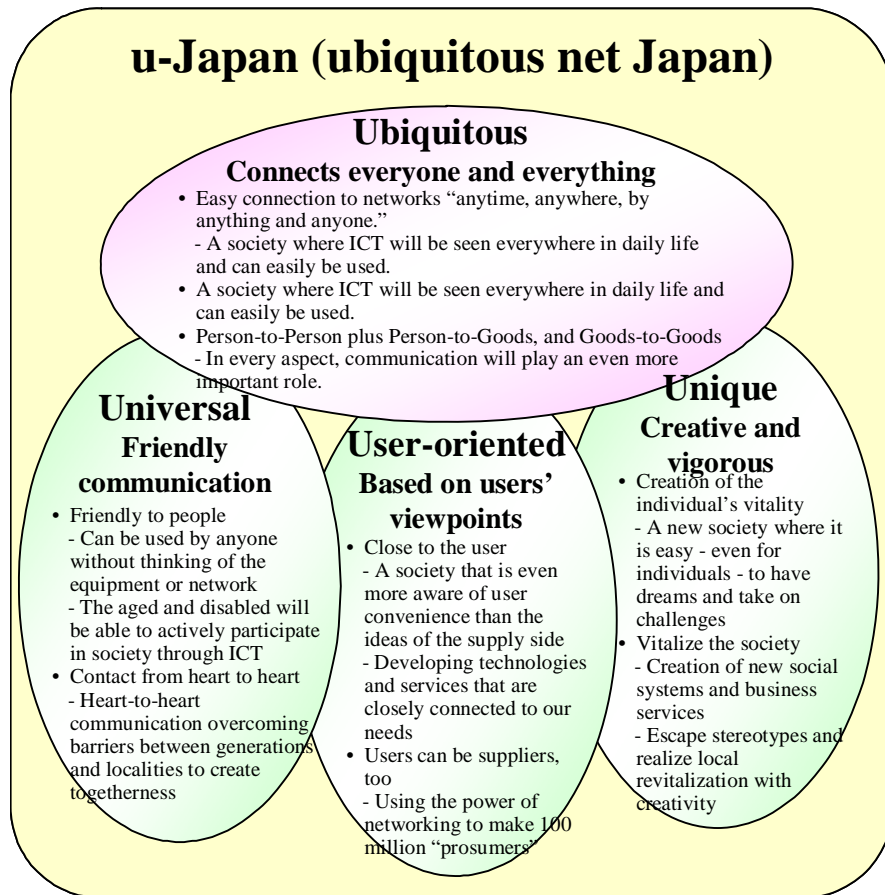
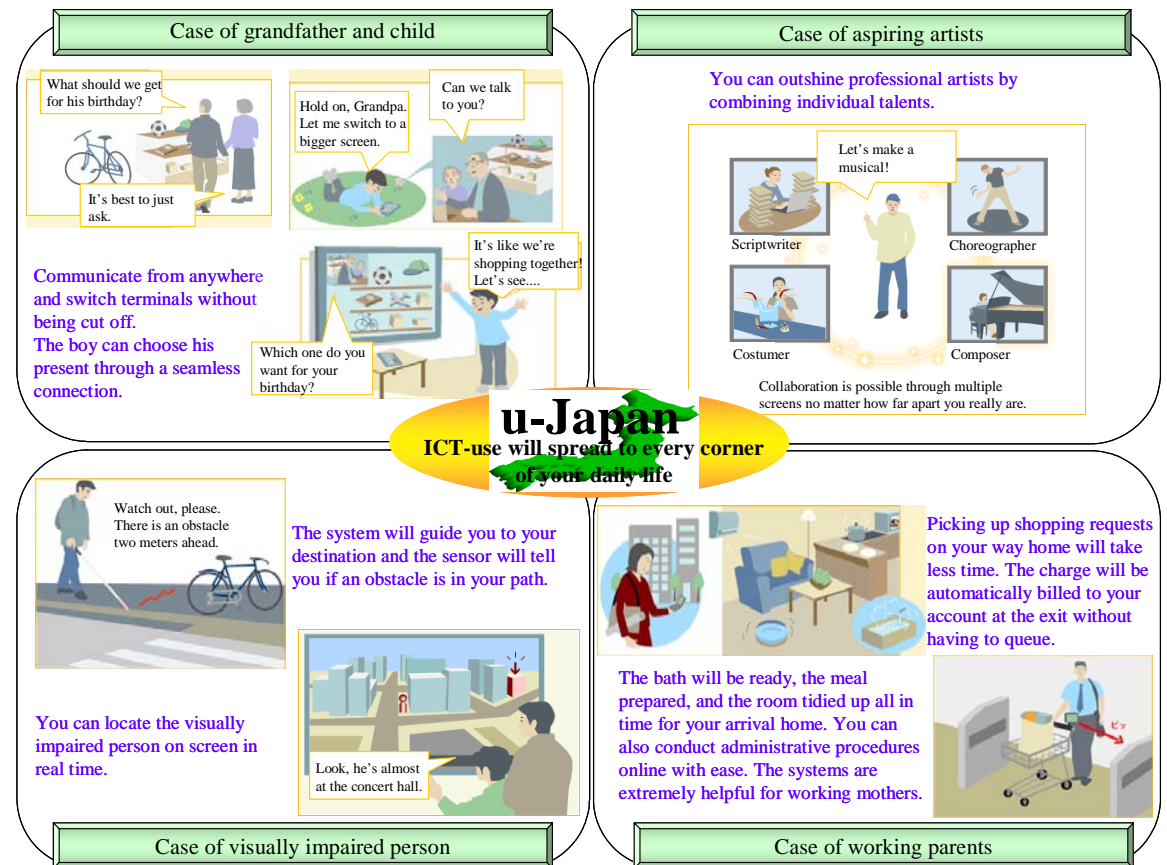


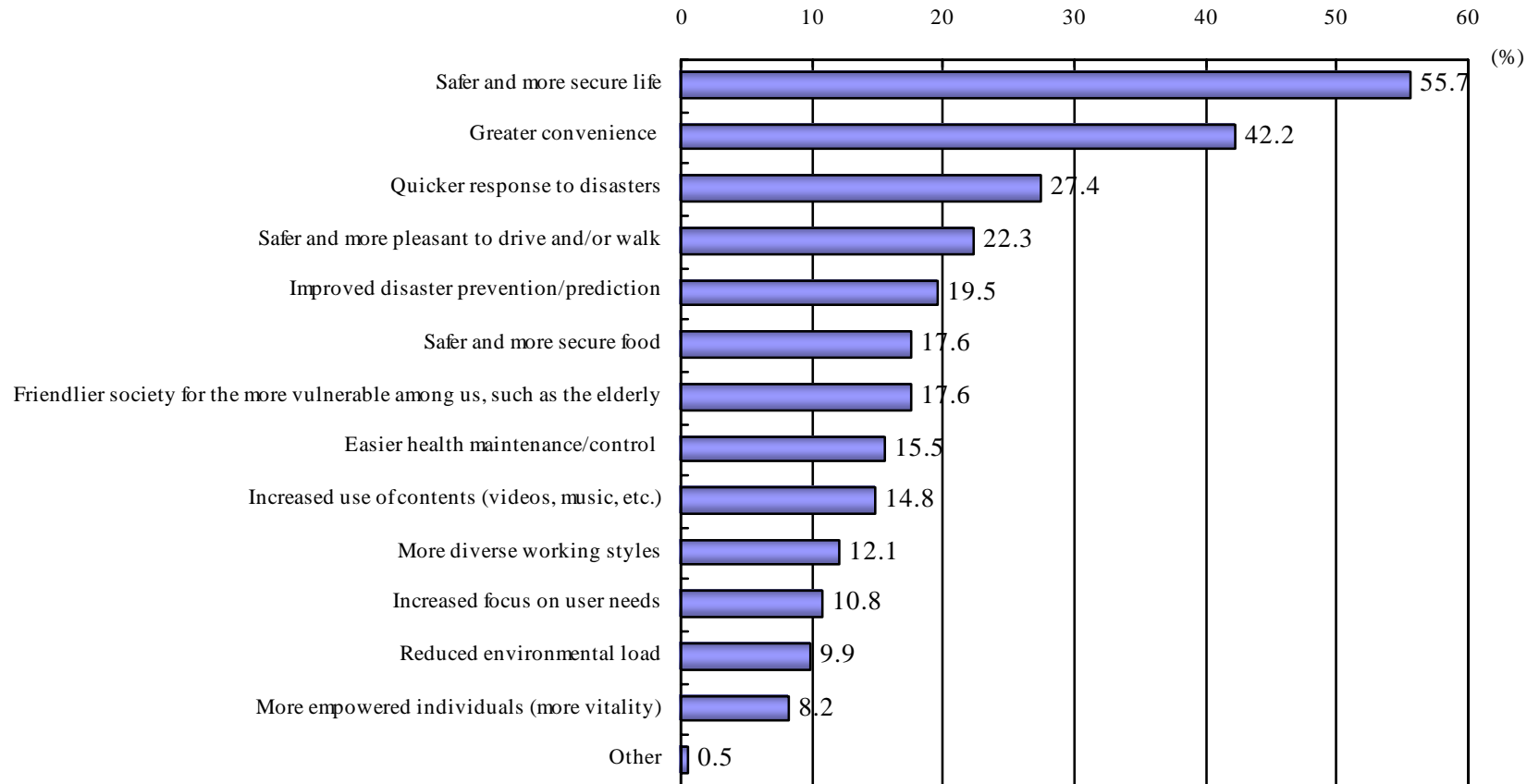
Figure 2: Impression of u-Japan



2. People's Expectations for Ubiquitous Networks

◆ Among the various benefits of ubiquitous networks, people have high expectations for “security and safety.”

Figure: Benefits expected in ubiquitous networks (multiple responses possible)



Source: “Survey on Trends Concerning a Ubiquitous Network Society” (Web survey)

3-1. Trend in Corporate Use of Ubiquitous Networks (Japan)

◆ Corporate uses of radio frequency identification (RFID) tags, contactless smart cards, and new network-compatible devices (ubiquitous network tools) have made notable progress in the past year.

Figure 1: Introduction of ubiquitous network tools in intra-corporate/inter-corporate operations

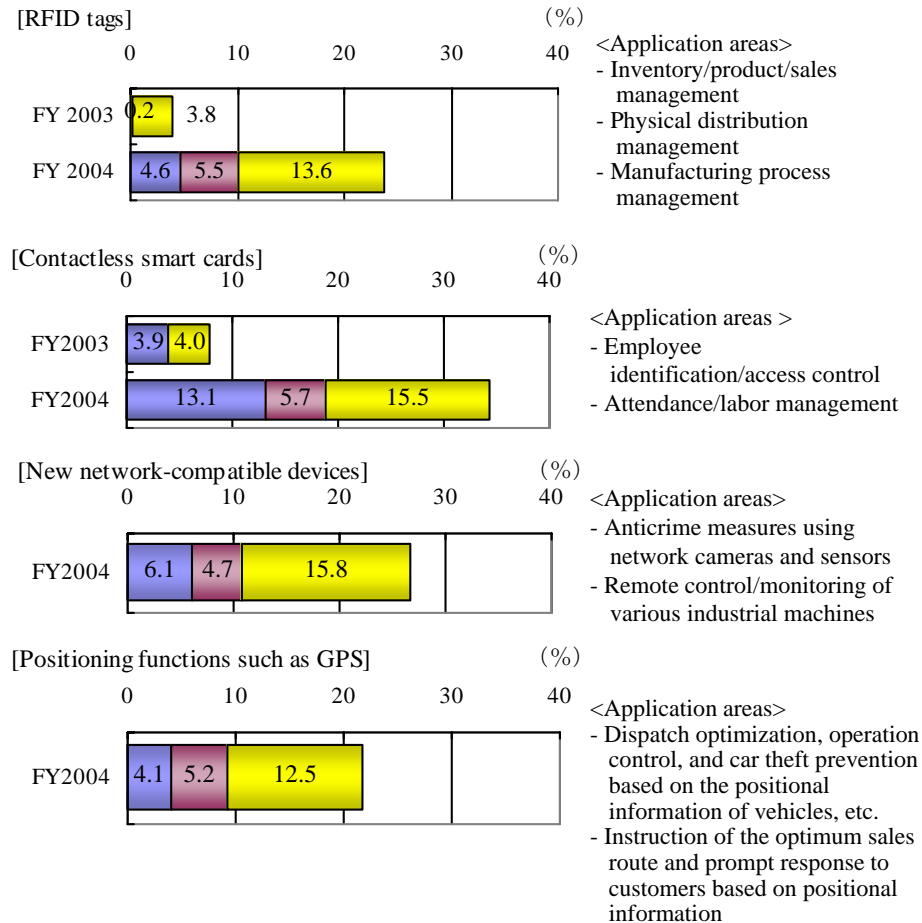
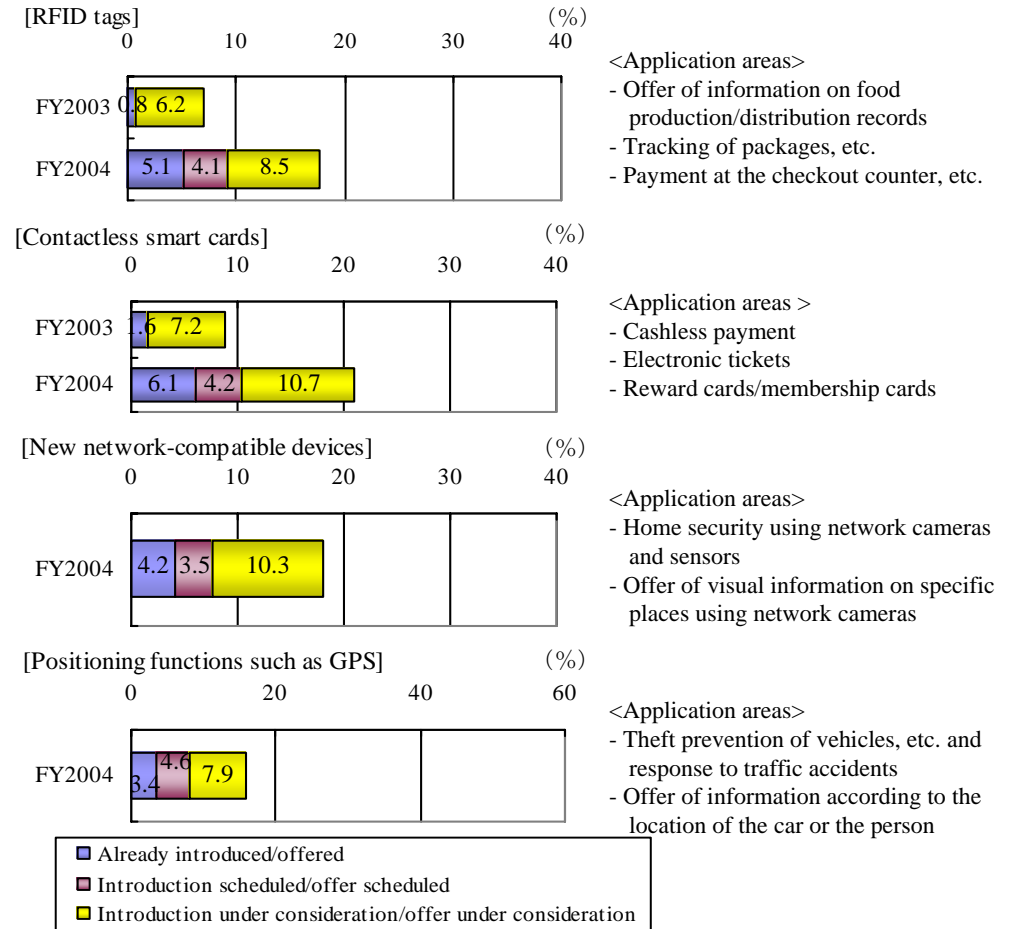


Figure 2: Offer of general consumer products and services using ubiquitous tools



Source: "Survey on the Status of Corporate Use of ICT" (Web survey)

3-2. Trend in Corporate Use of Ubiquitous Networks (Comparison Among Japan, the United States, and the Republic of Korea)

◆ Companies in the United States and the Republic of Korea are also making efforts to introduce ubiquitous network tools. With regard to intra-corporate/inter-corporate operations, advancement is being observed for “contactless smart cards” in Japan, “new network-compatible devices” in the United States, and “RFID tags” in the Republic of Korea. In respect to general consumer products and services, advancement can be seen for “contactless smart cards” in Japan and the Republic of Korea and “RFID tags” in the United States.

Figure 1: Introduction of ubiquitous network tools in intra-corporate/inter-corporate operations

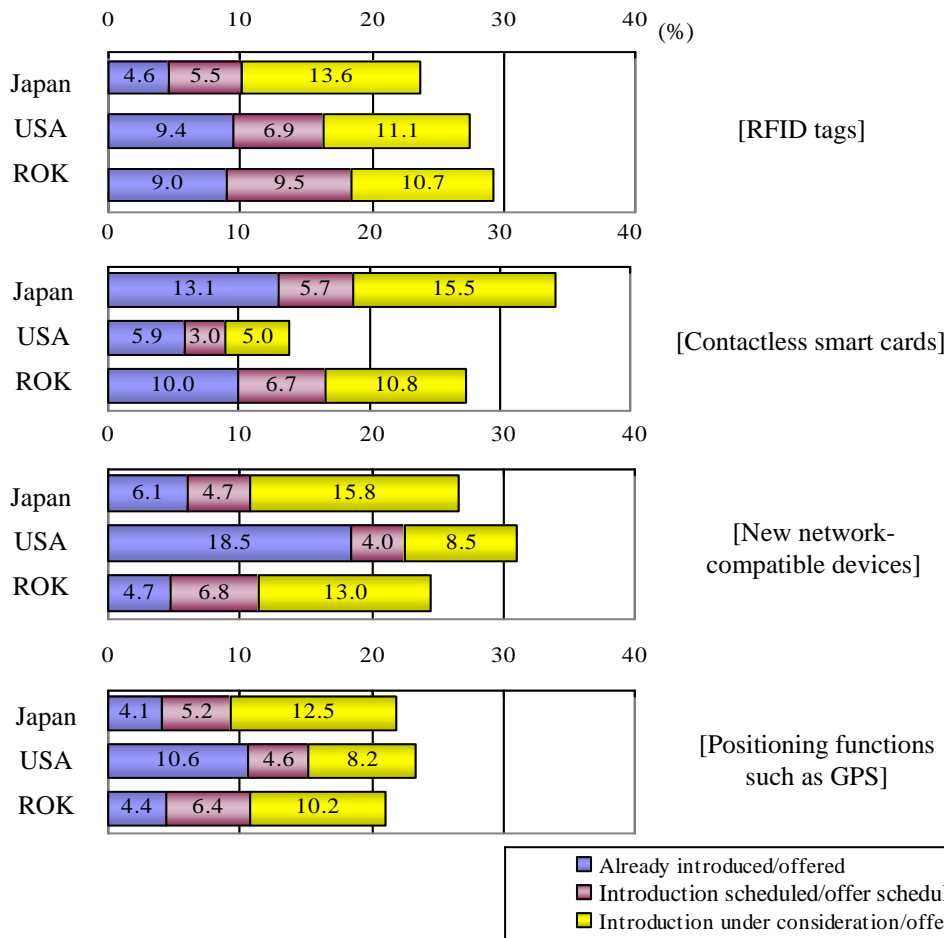
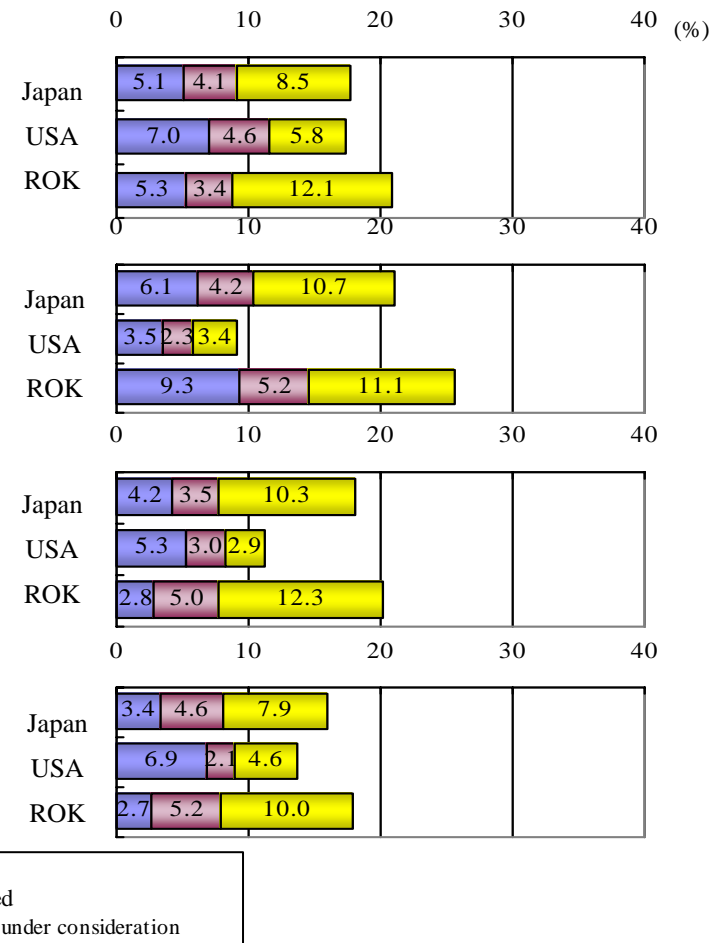


Figure 2: Offer of general consumer products and services using ubiquitous network tools



Source: “Survey on the Status of Corporate Use of ICT” (Web survey)

4-1. Example Use of Ubiquitous Networks (Mobile Phones with Contactless Smart Card Technology)

- ◆ The service most frequently used by the users of mobile phones with contactless smart card technology (379 persons) was electronic money settlements. The users had a high degree of satisfaction and a high intent to continue using the services, and believed that the services would spread in the future.

Figure 1: Example of service



Figure 2: Services used by users (multiple responses possible)

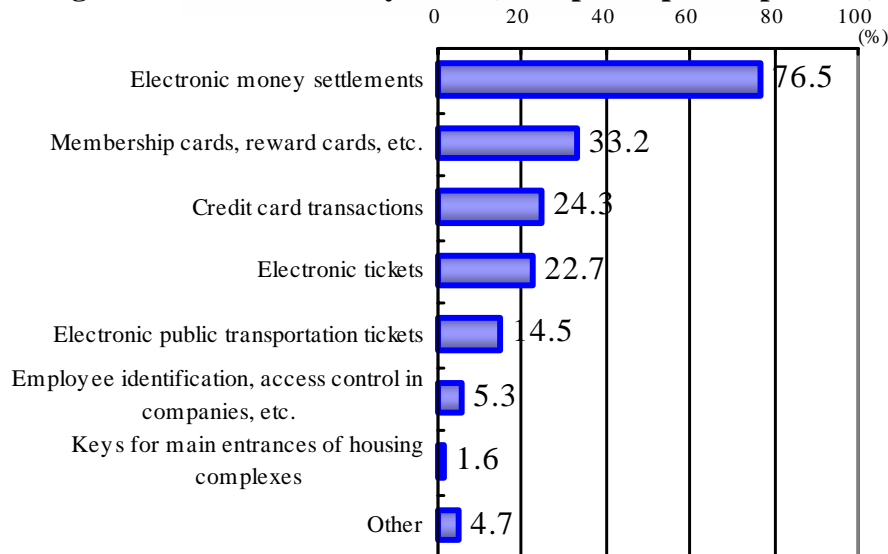


Figure 3: Degree of user satisfaction for the services

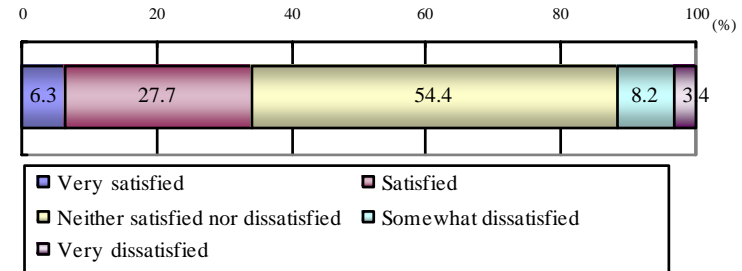


Figure 4: Users' intent to continue using the services

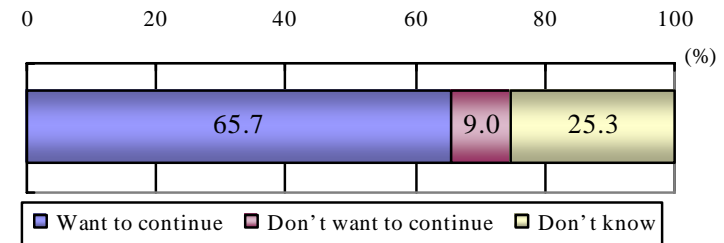
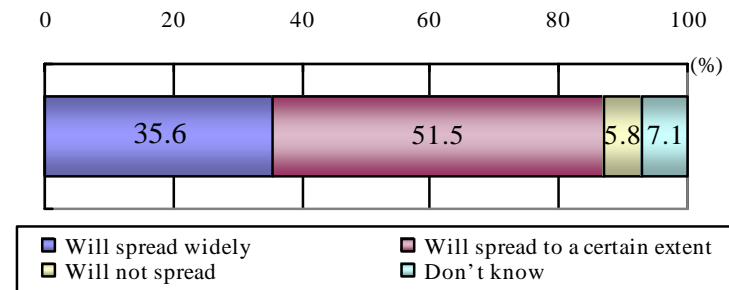


Figure 5: Prediction concerning spread of the services in the future



Source: "Survey on Trends Concerning a Ubiquitous Network Society" (Web survey)

4-2. Example Use of Ubiquitous Networks (Home Security Services)

- ◆ Users of home security services (services that detect and report any suspicious intruder or send video images of the inside of the house to users who are away by using network cameras, sensors, etc.) (176 persons) had a high degree of satisfaction and a high intent to continue using the services, and they believed that the services would spread in the future.

Figure 1: Example of service

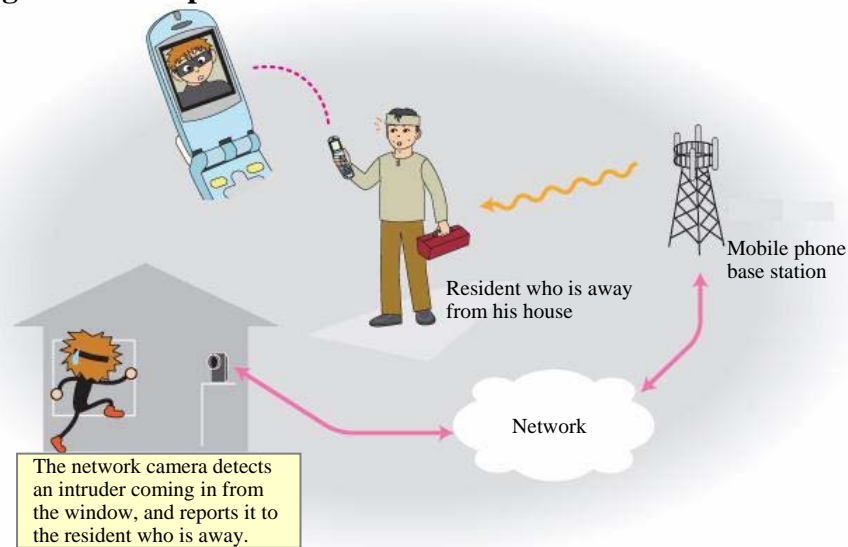


Figure 2: Benefits in using the services (multiple responses possible)

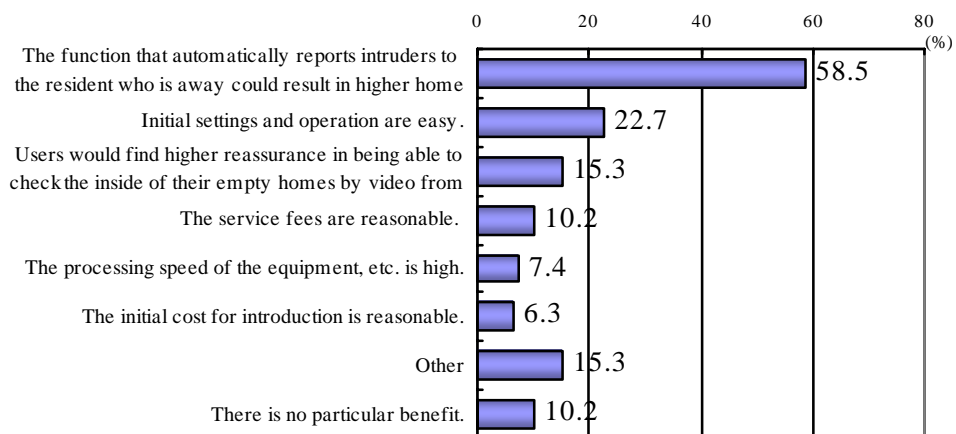


Figure 3: Degree of user satisfaction for the services

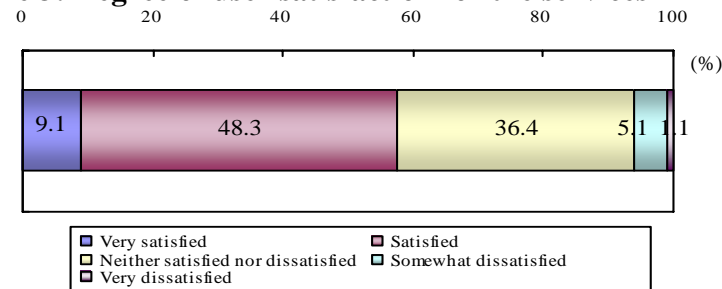


Figure 4: Users' intent to continue using the services

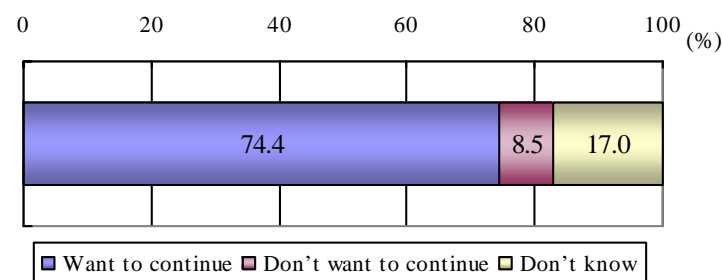
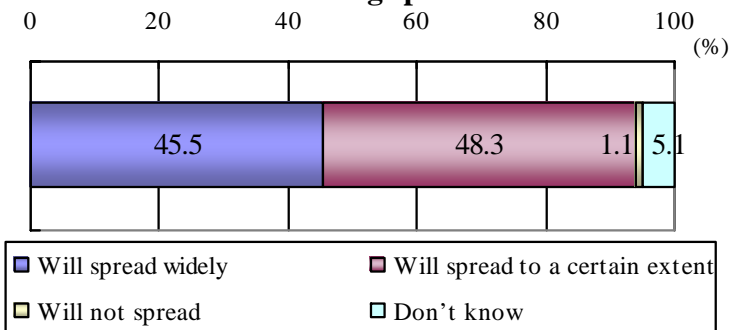


Figure 5: Awareness concerning spread of the services in future



4-3. Example Use of Ubiquitous Networks (Services using RFID Tags)

- ◆ People who have experienced using food traceability systems applying RFID tags (134 persons) had a high opinion of the services, a high degree of satisfaction, and a high intent to continue using the services, and they believed that the services would spread in the future. Meanwhile, 24.6% of the users agreed with the statement “I want to buy food for which the production/distribution information can be checked even for a slightly higher price,” and 20.9% disagreed.

Figure 1: Example of service

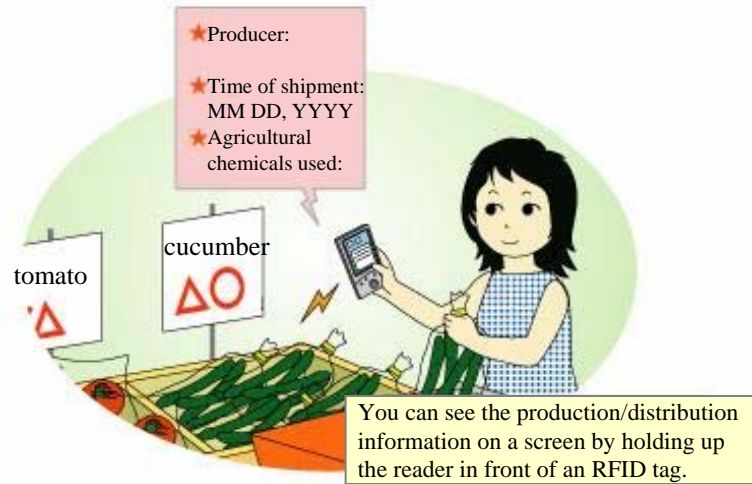


Figure 2: User evaluation of the services

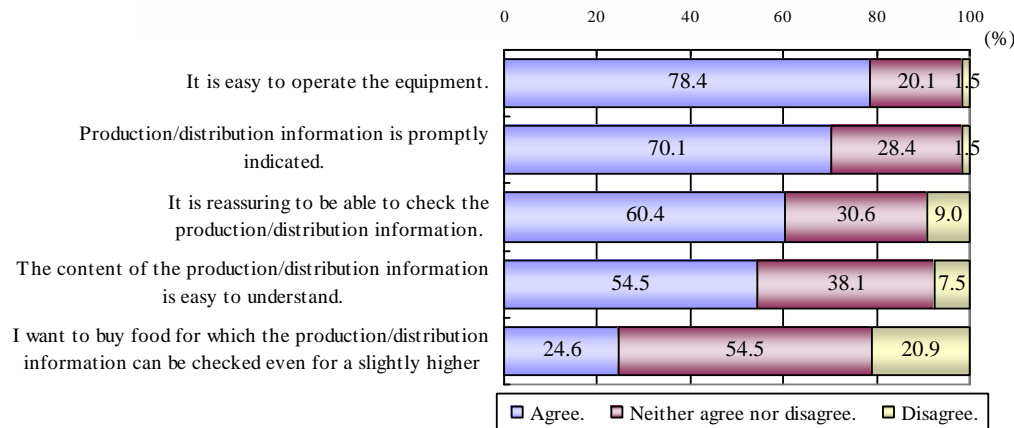


Figure 3: Degree of user satisfaction for the services

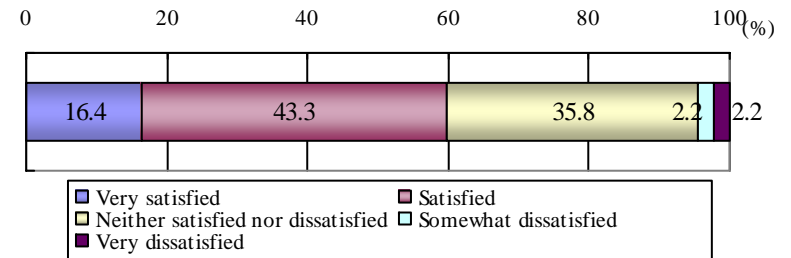


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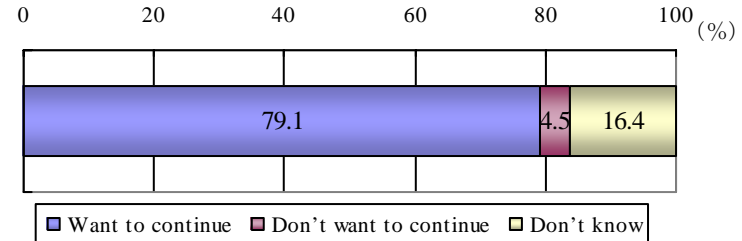
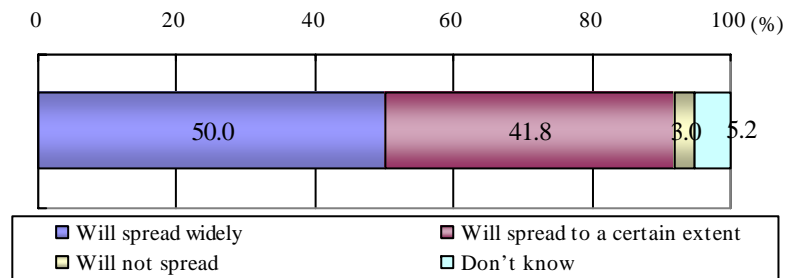


Figure 5: Prediction concerning spread of the services in the future



Source: “Survey on Trends Concerning a Ubiquitous Network Society” (Web survey)

4-4. Example Use of Ubiquitous Networks (Utilization of RFID Tags for Safety of School Children)

◆ The Kinki Bureau of Telecommunications of the Ministry of Internal Affairs and Communications (MIC), implemented a demonstration test for a system that records the school arrival and departure times by RFID tags, notifies parents of this information by e-mail, etc. under the cooperation of an elementary school in Wakayama Prefecture (October 25 - November 5, 2004). In the questionnaire survey conducted to the participants after the test, most of the respondents indicated that they felt more reassured throughout the program.

Figure 1: Outline of the demonstration test

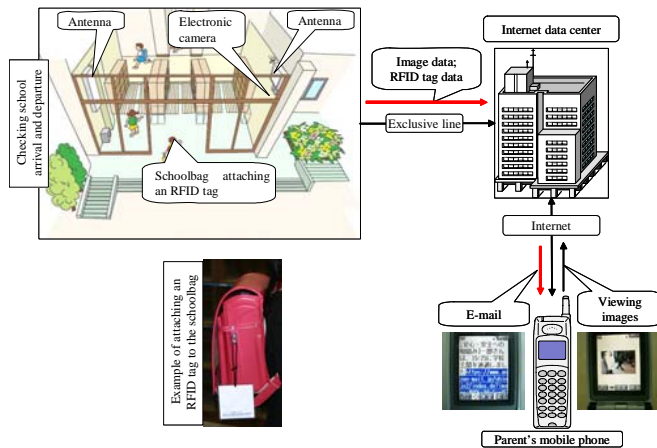


Figure 2: Frequency of checking the school arrival and departure notification

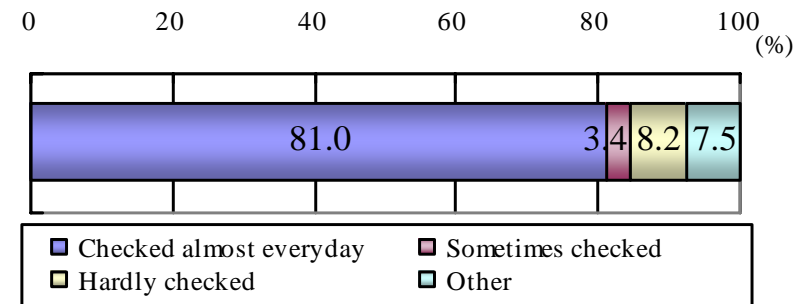


Figure 3: Overall impression of the program

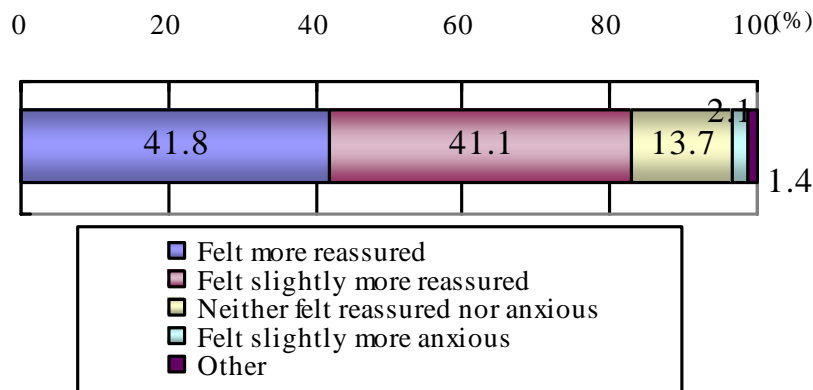
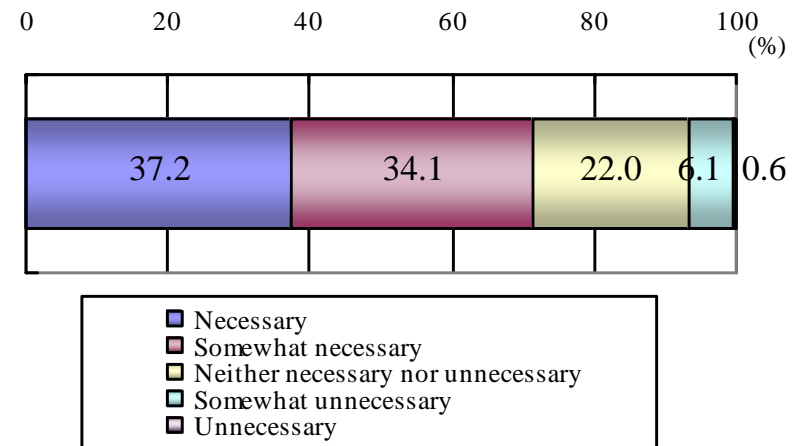


Figure 4: Future need for the program



Source: Kinki Bureau of Telecommunications, MIC, "Study Group on Utilization of RFID Tags in the Public Sector" (March 2005)

4-5. Example Use of Ubiquitous Networks (Utilization of GPS for Vehicle Control)

- ◆ A petroleum-products company established a system applying the positioning function of GPS mobile phones in order to deal with gas stations' inquiries on the time of arrival of tank lorries more efficiently and to reply to their inquiries more quickly. After introducing this system, the time required for dealing with an inquiry was shortened from about 15-20 minutes to 3-4 minutes.

Figure 1: Operational flow before the introduction of the system

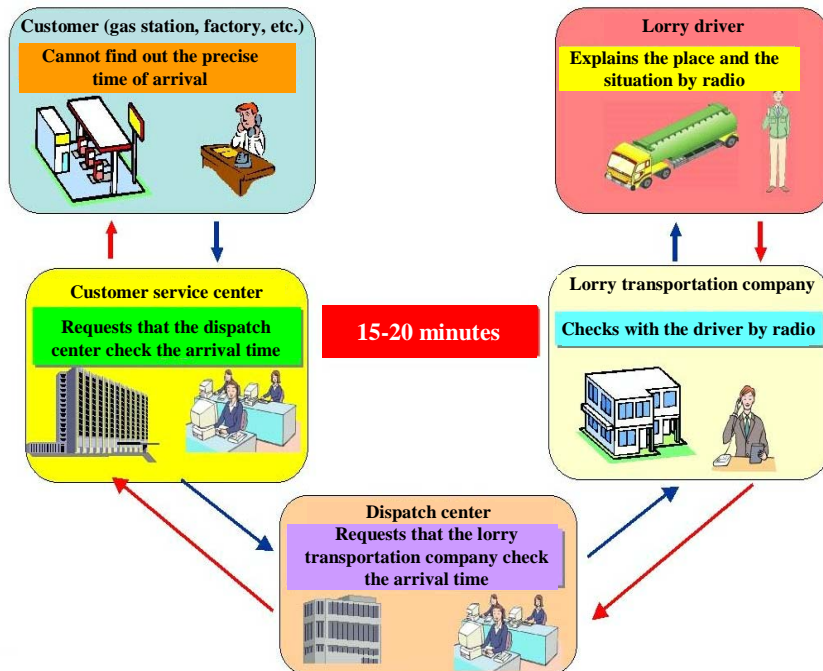
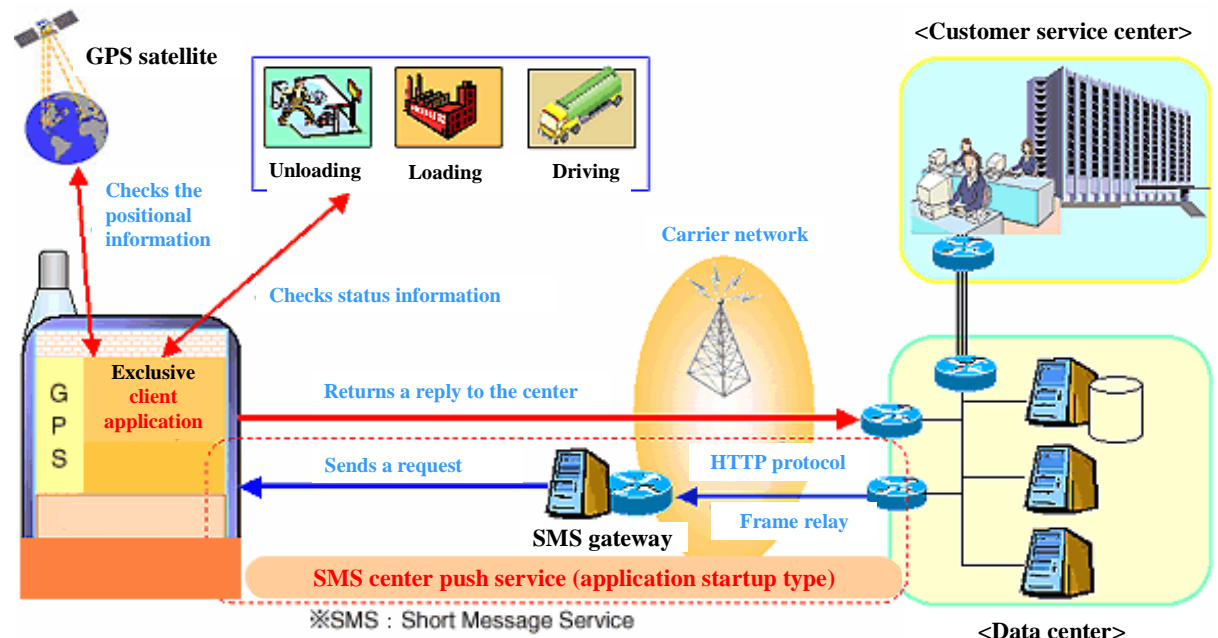


Figure 2: System outline



Source: The company's document.

5. Japan's Future Challenges and Solutions Using Ubiquitous Networks

- ◆ The “Policy Roundtable for Realizing a Ubiquitous Network Society” conducted a consumer questionnaire survey concerning the important theme that Japanese society should address toward 2010. As a result, the most-mentioned theme was “achieving a safe and secure living environment,” indicated by nearly 70% of the respondents.
- ◆ In addition, more specific challenges were investigated, and examples of solutions using ubiquitous networks were identified through consumer group interviews. While these solution examples vary in the extent of progress, ranging from those in the concept phase or the demonstration test phase to those in the pilot project phase, use of them is expected to become widespread in society in the not-so-distant future through efforts to establish the respective business models and satisfy other preconditions.

Figure 1: Important theme that Japanese society should address toward 2010 (multiple responses possible)

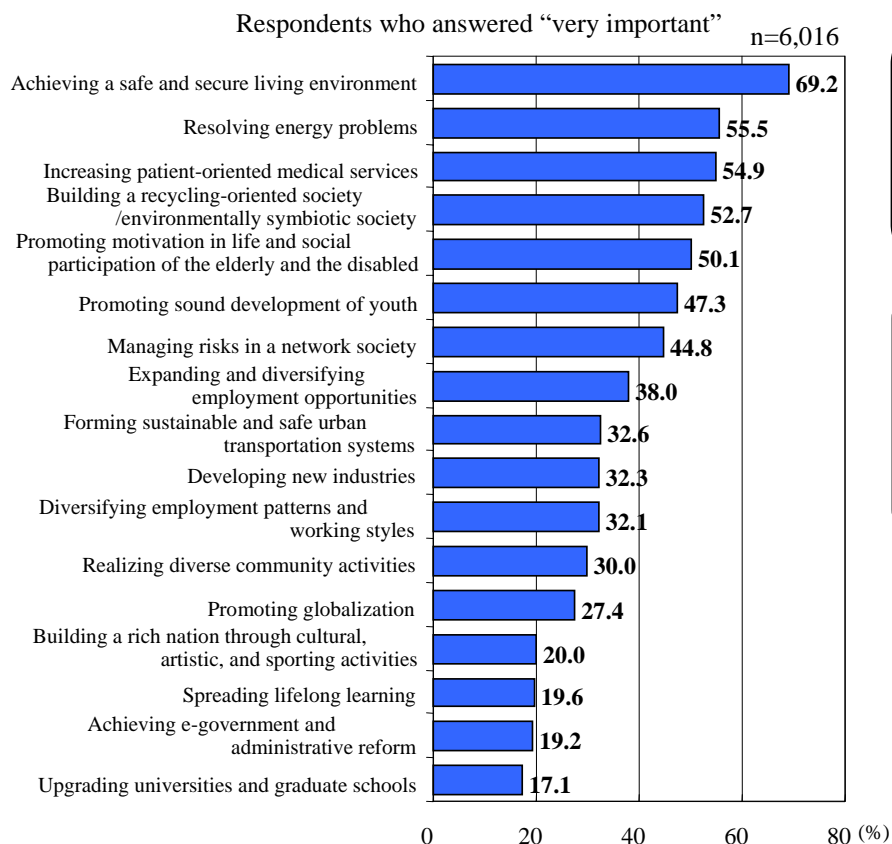
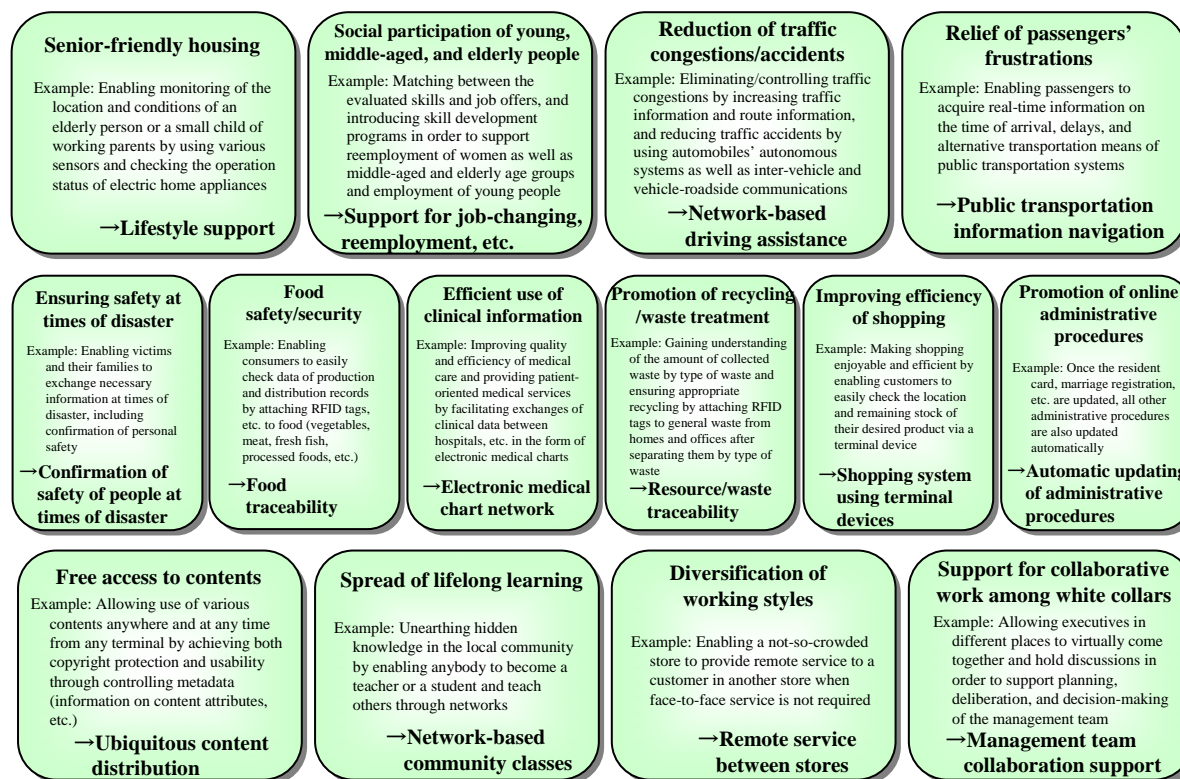


Figure 2: Specific future challenges and solution examples using ubiquitous networks



Produced from the final report of “Policy Roundtable for Realizing a Ubiquitous Network Society.”