

## Section 2

# Changes in Lifestyles Resulting from Network Use

### 1. Status of Internet Usage

#### (1) Internet usage pervades various aspects of people's lives

The number of Internet users in Japan continues to grow. At the end of 2003, the population of Internet users was estimated to be 77.30 million (up 6.1 points from the previous year), an increase of 7.88 million in just one year. The penetration rate now exceeds 60% at 60.6% (Figure 1-2-1).

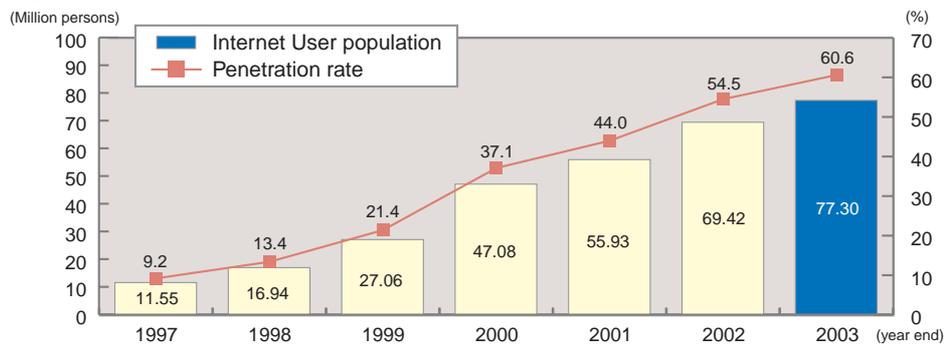
#### (2) Status of Internet usage

The most common use of the Internet when accessed

from home PCs is “e-mail” used as a means of communication (57.6%), followed by “searching for information on goods and services” (57.4%), “obtaining news and other information” (48.7%), and “purchasing goods and services” (36.8%) (Figure 1-2-2).

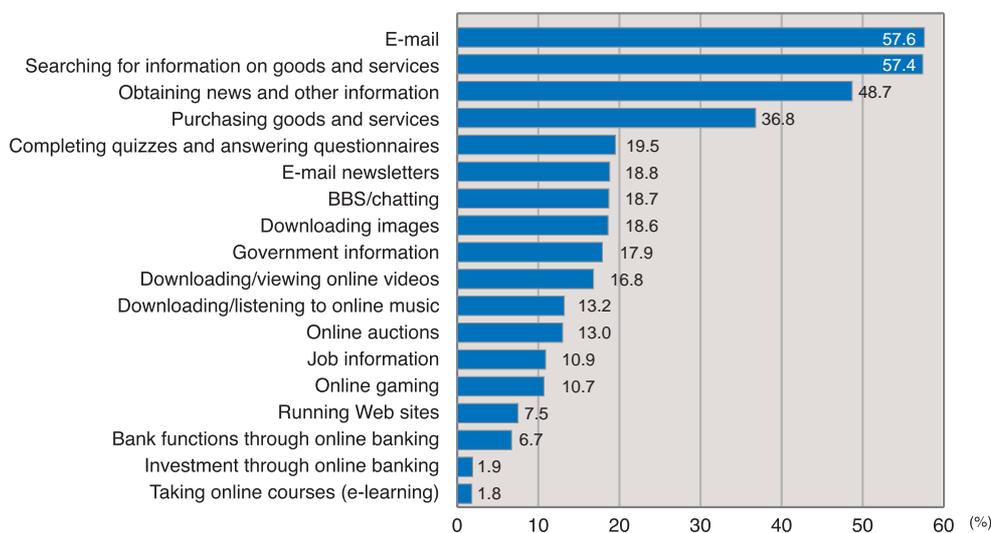
Concerning use of the Internet as an information-gathering tool, most Internet users rate highly the information-gathering speed of the Internet (98.4%) and use the Internet as their first means when searching for or gather information (93.5%). In addition, confidence in the information on the Internet is higher than in the past (88.4%) (Figure 1-2-3).

**Figure 1-2-1 Transitions in the Internet User Population and Penetration Rate**



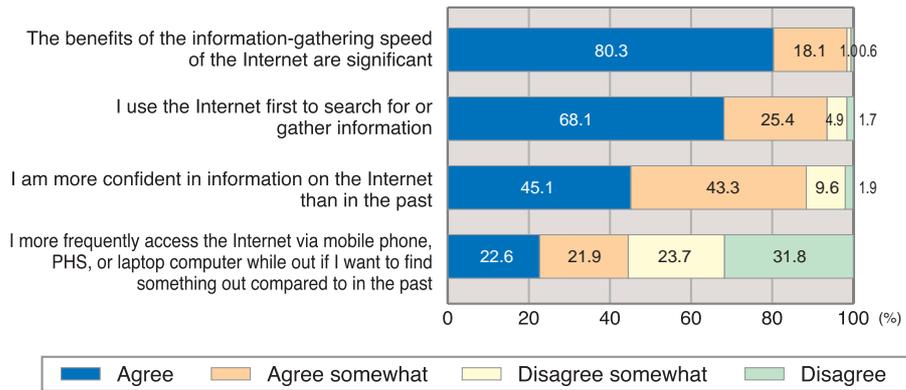
Source: Communications Usage Trend Survey, MPHPT

**Figure 1-2-2 Purposes of the Internet Use from Home PCs (multiple responses possible)**



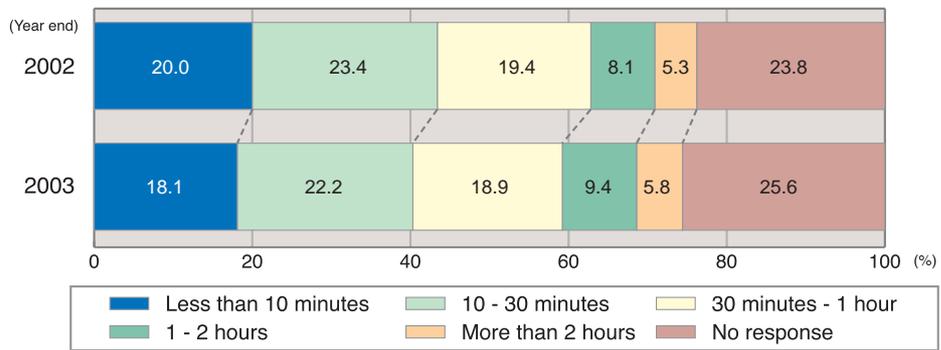
Source: Communications Usage Trend Survey in 2003, MPHPT

**Figure 1-2-3 How Users Feel about the Internet as an Information-gathering Tool**



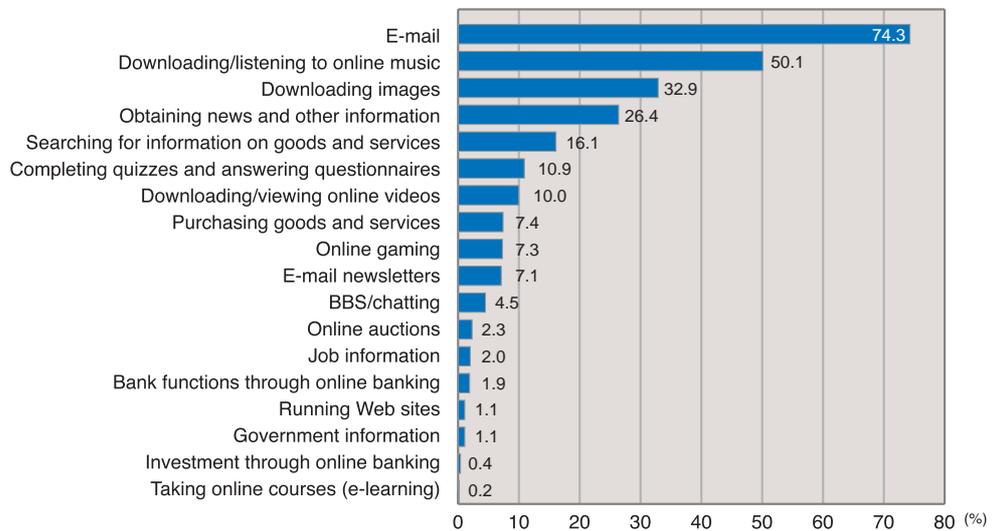
Source: Survey of Personal Activities in a Ubiquitous Network Society

**Figure 1-2-4 Average Time of Internet Use per Access from Home PCs**



Source: Communications Usage Trend Survey, MPHPT

**Figure 1-2-5 Purposes of Internet Use from Mobile Phones/PHS (multiple responses possible)**



Source: Communications Usage Trend Survey in 2003, MPHPT

Of those users who access the Internet from home PCs, a review of the change in the average time of use per access from the end of 2002 to the end of 2003 shows that short-term users who access the Internet for “less than 10 minutes” decreased by 1.9 points to 18.1%. In addition, the percentages of long-term users increased, with those accessing the Internet for “1 to 2 hours” increasing to 9.4% (up 1.3 points from the previous year) and “more than 2 hours” increasing to 5.8% (up 0.5 points from the previous year) (Figure 1-2-4).

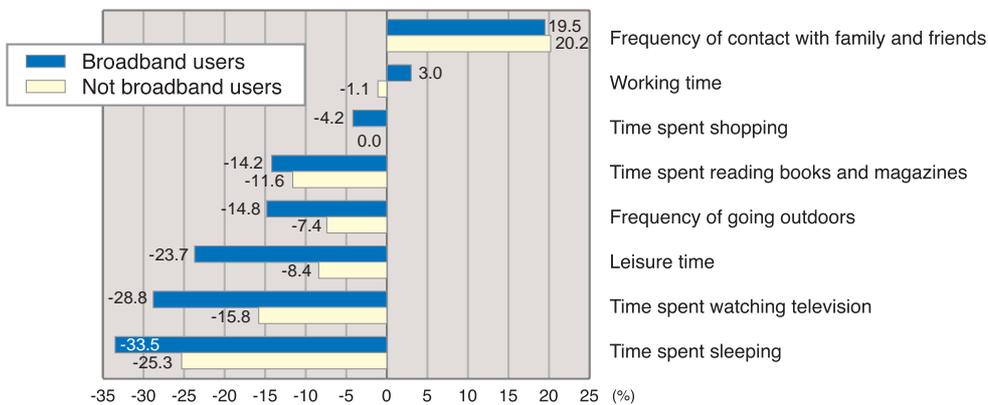
The most use of the Internet when accessed from mobile phones/PHS is “e-mail” at 74.3%, followed by “downloading and listening to online music” (50.1%), “downloading images,” (32.9%), and “obtaining news and other information” (26.4%) (Figure 1-2-5).

**(3) Changes in lifestyles resulting from Internet use**

When Internet users were asked about changes in their lifestyles, many responded that the “frequency of contact with family and friends” increased, regardless of whether they used broadband. Many broadband users responded that there were decreases in “time spent sleeping,” “time spent watching television,” and “leisure time,” and the decrease in resting and leisure times was particularly prominent (Figure 1-2-6).

Internet usage is not limited to the home, and usage sites are diversifying. Among people who use the Internet “multiple times per day” while outside the home or office, the most common use location is “lodging facilities (hotels and inns)” at 59.5%, followed by “stations and airports” at 57.0% and “eating facilities (coffee shops, fast food and other restaurants)” at 50.3%. Use in

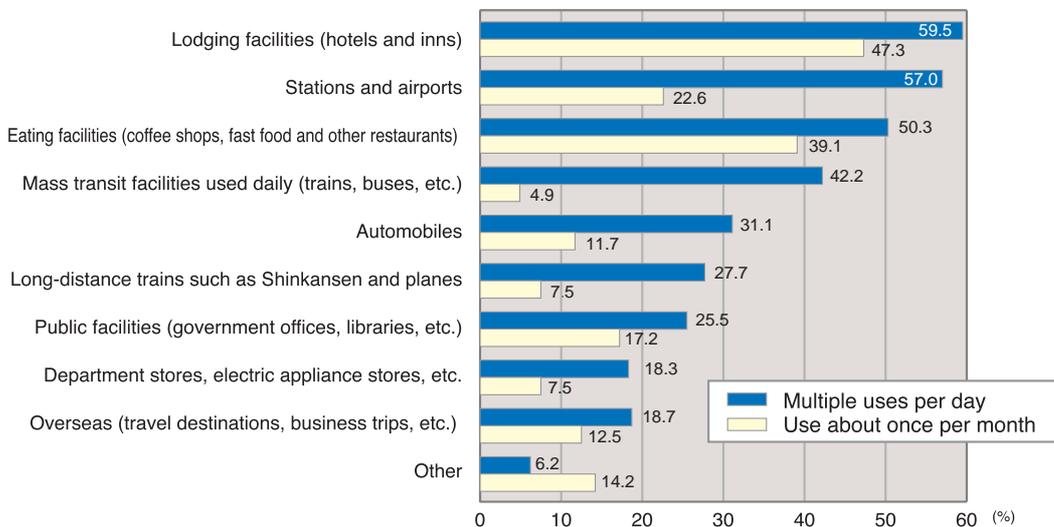
**Figure 1-2-6 Changes in Lifestyles from Network Use (multiple responses possible)**



Note: The percentage of respondents who answered “decreased” was subtracted from the percentage who answered “increased.”

Source: Survey of Personal Activities in a Ubiquitous Network Society

**Figure 1-2-7 Internet Use Sites Outside the Home or Office (multiple responses possible)**



Note: Connection to the Internet as used here excludes connections from mobile phones/PHSs.

Source: Survey of Personal Activities in a Ubiquitous Network Society

the “mass transit facilities used daily (trains and buses, etc.)” (42.2%) and “automobiles” (31.1%) were also relatively high, indicating that the frequency of Internet use while people are in transit is high (Figure 1-2-7).

#### (4) Internet use pervades day-to-day activities

##### (i) Internet use expands in all user segments

Internet use by individuals continues to increase and expand each year and is pervading a broad range of user segments. Looking at Internet use rates by age group at the end of 2003, Internet usage in the 60 years old and over group was 21.6%, substantially lower than the more than 90% rates in the 13 to 19 years old, 20 to 29 years old, and 30 to 39 years old groups. From the end of 2002 to the end of 2003, however, usage in the 60 years old and over group increased by 1.33 times, a faster rate of growth than in other age groups (Figure 1-2-8).

##### (ii) Internet usage during personal activities

Opportunities for users to access the Internet while engaging in day-to-day personal activities including sending and receiving e-mail, searching for and transmitting various types of information, and using various services are increasing. This type of network usage takes place during day-to-day activities, and use of the Internet regardless of time and locations is increasing.

Of the all time spent engaged in various personal activities, the percentage of time accounted for by Internet use while “resting at home” is 35.0% and while “at work or school” is 21.1%, thus taking up more than 20% of personal time. In addition, the percentage of Internet use time while engaged in “getting ready for

work, school, etc.” (18.2%), while “in transit (to and from work, school, etc.)” (13.2%), while doing “housework” (17.6%) and during “leisure, etc.” (19.3%) are almost all just under 20%. Thus, Internet use is increasing in all aspects of daily life (Figure 1-2-9).

## 2. Prospects for Network Use in the Future

### (1) Network usage intentions

Among persons who currently use the Internet, the most common intended future Internet uses were for personal purposes including “viewing Web sites” (69.9%) and “sending and receiving e-mail” (57.1%). There is also a high level of interests in “Access Internet services” (54.0%) including online shopping and making reservations. The level of interest in “Access Internet services” was the highest among non-Internet users (47.6%), indicating a high expectations concerning Internet services including greater convenience and greater enjoyment (Figure 1-2-10).

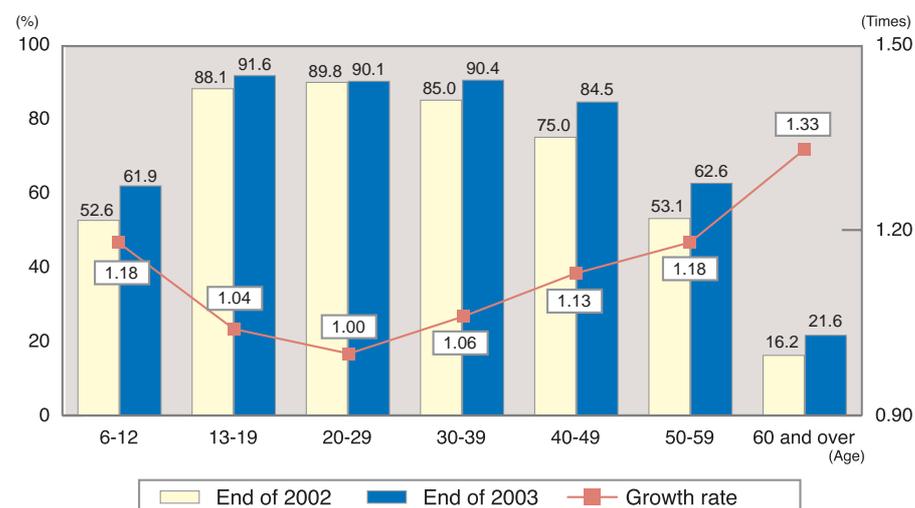
### (2) Examples of new network services in Japan and overseas

#### (i) Recent developments concerning network services in Japan

##### a. Network use in Security

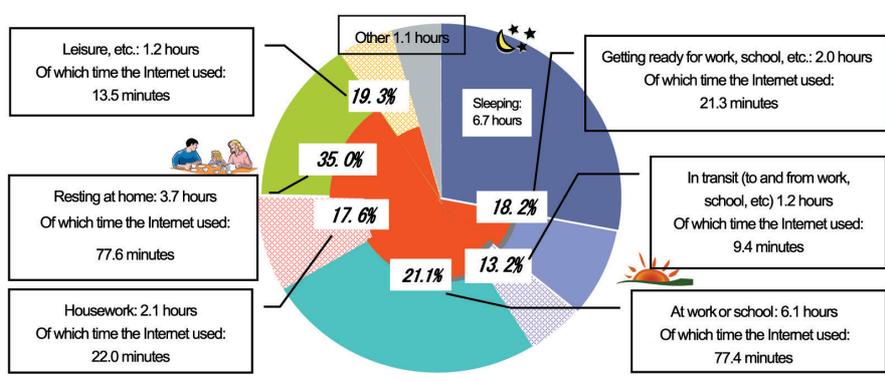
Testing was conducted at a kindergarten in Wakayama Prefecture of a system that allows guardians to check on their children while at home or at work using position data from RFID tags attached to the children and network cam-

Figure 1-2-8 Internet Usage Rates by Age Group



Source: Communications Usage Trend Survey, MPHPT

**Figure 1-2-9 Internet Usage in Day-to-Day Activities (totals for all respondents)**



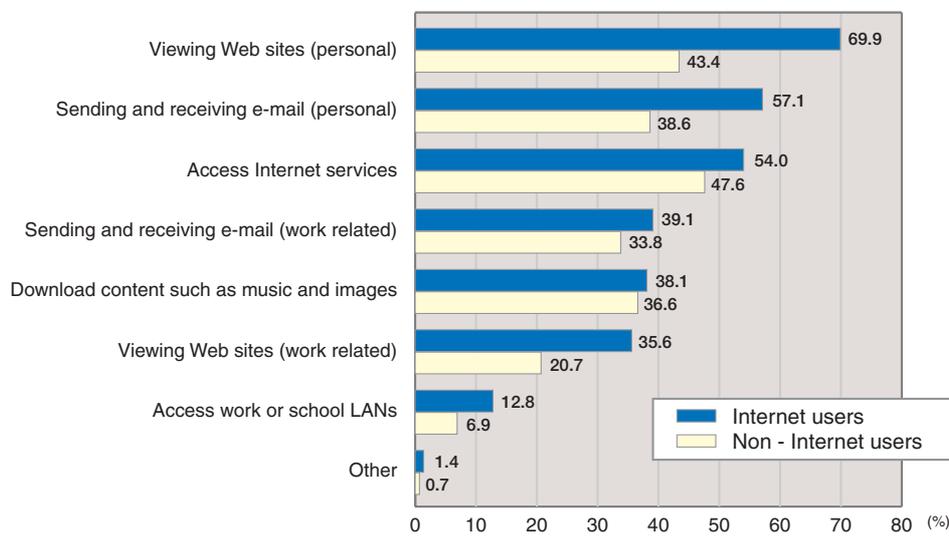
Note: The percentages in the graph are the ratio of the Internet usage time in a certain lifestyle scene; "getting ready for work , school, etc.," "in transit (to and from work, school, etc)," "at work or school," "housework," "resting at home" or "leisure, etc."

**Internet Use Applications (all respondents)  
(percentages of applications mentioned up to the second rank)**

	Getting ready for work, school, etc.	In transit (to and from work, school)	At work or school	Housework	Resting at home	Leisure, etc.
1st	Send/ receive e-mail 67.3%	Send/ receive e-mail 75.0%	Send/ receive e-mail 63.2%	Send/ receive e-mail 62.5%	Send/ receive e-mail 54.6%	Send/ receive e-mail 59.8%
2nd	Weather forecasts 25.6%	Transportation, time table, maps 24.6%	Search engines 33.4%	News, etc. 17.4%	Prizes, contests, free item applications 20.5%	Transportation, time table, maps 20.4%
3rd	News, etc. 24.4%	News, etc. 21.1%	News, etc. 28.4%	Prizes, contests, free item applications 11.9%	Search engines 15.9%	Weather forecasts 19.3%

Source: Survey of Personal Activities in a Ubiquitous Network Society

**Figure 1-2-10 Internet Use Objectives (multiple responses possible)**



Source: Survey of Personal Activities in a Ubiquitous Network Society

era data transmitted over optical fiber lines. This service has been praised by users for its ability to allow users to check on their own children while at kindergarten, something that was not possible in the past, and to allow others such as grandparents to view their grandchildren from remote locations, resulting in both a sense of security and enjoyment.

b. Network use in shopping

At conventional stores, payment has typically been made in cash or by credit card, but in recent years, use of cashless payment systems that use contactless IC cards or mobile phones has been increasing. The contactless IC cards of one company that provides electronic money services had issued more than 3.8 million cards by March 2004, and the number of shops where they can be used has increased to about 3,700 nationwide.

c. Network services originating in Japan spread throughout the world

Various network services developed and offered in Japan are steadily spreading throughout the world. The mobile phone Internet connection services that began in Japan in February 1999 are now offered by overseas partner communications carriers, primarily in Europe, and the number of subscribers exceeds 2 million (as of January 2004).

Use of contactless IC cards for public transportation services is expanding in Hong Kong, Singapore, China, and other areas, and in June of 2003, a cumulative total of 22.5 million cards have been issued.

Japanese game makers have launched online game services that can be accessed over networks in North America, and the number of subscribers is approximately 200,000 (as of January 2004).

**(ii) Recent developments concerning network services overseas**

a. Network services in the Republic of Korea

In the Republic of Korea, which boasts a highly-

developed broadband environment, new apartment complexes with home networks installed have been completed. Residents can use control panels in each room to operate home appliances and control electricity and gas as well as manage household functions such as operating home appliances from outside the home via a mobile phone.

b. Network Services in the United States

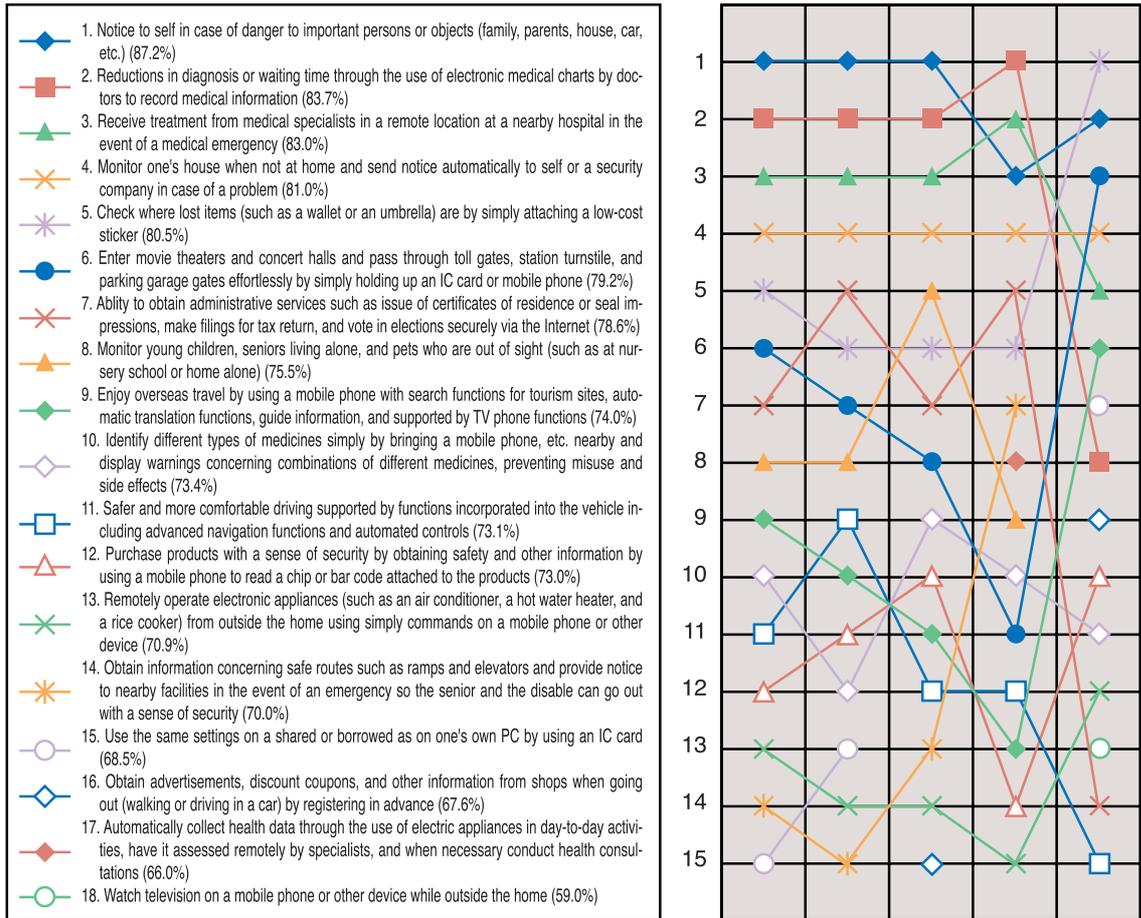
A theme park in the United States is offering a service that allows visitors to confirm the location of family and friends who accompanied them if they become separated. Visitors are given wrist-watch type wireless communications terminals and they can check on the location of other visitors who accompanied them at kiosks located throughout the park, making it possible to find lost children.

**(3) Expectations concerning ubiquitous network services**

It is expected that ubiquitous networks that allow users to connect to information and communications networks at any time from anywhere will be created in the near future.

Use intentions concerning ubiquitous network services that are currently under consideration indicate that working people face location and time restraints because of time spent working, and there are strong expectations that ubiquitous network services will help people overcome these restraints. Homemakers spend long hours in the home and have relatively heavy burdens in taking care of children or seniors, cooking, and performing housework, so expectations for ubiquitous network services to support these tasks are high. Seniors expect that ubiquitous network services will help them engage in meaningful activities without worry. Youth seek to use ubiquitous network services that will provide them with greater convenience and emotion (**Figures 1-2-11 and 1-2-12**).

Figure 1-2-11 Intent to Use Ubiquitous Network Services\* (multiple responses possible)



\* Ranked in the order of services with high levels of intent to use (the total of "definitely want to use" and "want to use somewhat" responses). The percentages after the services indicate the percentages of the respondents who want to use the services to all respondents.

\*\* Workers includes persons 20 years old and older who are employed; homemakers includes persons aged 20 to 59 who are full time housewives, individuals who work part time, and unemployed persons; seniors includes persons 60 years old and older; youth includes persons 15 to 19 years old and students 20 years old and older

Source: Survey of Personal Activities in a Ubiquitous Network Society

Figure 1-2-12 Image of Ubiquitous Network Services (Examples)

Children at a nursery school can be monitored from home using a network camera.

Monitor children at nursery school

Images of a patient at a clinic can be transmitted to a specialist at a hospital and emergency treatment instructions given.

Images and data are transmitted to a specialist, who can provide guidance on treatment

If an item is left on a train, a mobile terminal can be used to detect a signal from an RFID tag attached to the item and the item's location can be quickly determined.

The location of an item left on a train can be determined quickly

I forgot my backpack!

The backpack is on its way to XX Station

It's OK. Your backpack is there

When undergoing a medical exam, test results from another room are input into an electronic chart in real time and a diagnosis can be made based on that information.

Exam Room

Input test result in an electronic chart in real time

Perform a medical exam while confirming the content of the electronic medical chart

If you go out with the air conditioner on, notice can be sent to a mobile terminal.

The air conditioner is on. Do you want to turn it off?

Yes

No

Monitor and control appliances in the home

Source: Survey of Personal Activities in a Ubiquitous Network Society