

## Mobile Phones as Multiple Information Terminals: From the Research Project “People and Media Usage in Japan”

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This is a summary and analysis of a survey on trends in mobile phone use conducted in November 2006.<sup>1</sup> Mobile phone use in Japan rose rapidly from the late 1990s, with the number of subscribers reaching over 60 million by 2001, greater than the number of landline subscribers. As of February 2007, there were 95.76 million subscribers, and, added to the 4.91 million PHS subscribers, the total figure rose well over 100 million.<sup>2</sup> According to these figures, we have entered the “one mobile phone per person” era. Research by the Ministry of Internal Affairs and Communication shows that in 2006, there were more people using the Internet on mobile phones and PHS than those using the Internet on their computers (PCs).<sup>3</sup> The mobile phone is becoming a major information terminal through which people access the Internet.

As seen in Internet use, mobile phones have achieved rapid upgrades and functional diversity. In addition to standard communication functions such as making phone calls and sending e-mail, others such as web searches, music downloading, cameras, games, calendars, calculators, 1seg (one-segment; mobile digital terrestrial television broadcasting service) reception, video reception, and electronic payments for Internet shopping have become the focus of increasing attention. This shift has become more pronounced with the spread of 3G (third-generation) mobile phones, which make possible high-speed, high-volume data transmission. As such, mobile phones have increasingly become “multiple information terminals” used in every imaginable situation in daily life.

The purpose of the 2006 survey is to examine what kinds of people active-

<sup>1</sup> The survey was conducted as part of NHK Broadcasting Culture Research Institute’s continuing “People and Media Usage in Japan” research project.

<sup>2</sup> See Dentsu Communication Institute’s *Joho media hakusho 2007* [Research for Information and Media Society 2007] (Diamond Sha)

<sup>3</sup> According to the Ministry of Internal Affairs and Communications’ “Telecommunications Usage Trend Survey for 2005” (May 2006), there were 69.23 million people who accessed the Internet via mobile information terminals, and 60.01 million who did via their computers.

ly use such mobile phones, and the circumstances and intentions surrounding their use. We would particularly like to focus on the trends in Internet use via mobile phone (hereafter referred to as mobile phone Internet, or “mobile Net”), the circumstances surrounding communication by mobile phone and e-mail, and trends and intentions of video use including 1seg reception.

## METHODOLOGY

The survey was conducted November 20–22, 2006 as an Internet survey via mobile phone. The sample consisted of 800 monitors registered with a mobile phone Internet research company. The breakdown of the sample was 200 in each of the following four groups (1seg mobile phone users in their 20s or younger; non-1seg mobile phone users in their 20s or younger; 1seg mobile phone users in their 30s or older; and non-1seg mobile phone users in their 30s or older).

### **Outline of the Survey**

The sample was divided into those in their 20s or younger and those in their 30s or older, and additionally into those who use 1seg-equipped mobile phones and those who do not. These categories were created in order to learn whether there are any differences in circumstances and intentions of mobile phone use between the age groups, and whether any differences exist between 1seg users and non-1seg users. Hereafter, the four groups will be referred to as “1seg users 20s or younger,” “Non-1seg users 20s or younger,” “1seg users 30s or older,” and “Non-1seg users 30s or older.”

Prior to this study, Internet surveys via mobile phone had never been conducted by the NHK Broadcasting Culture Research Institute. Moreover, Internet surveys, including those conducted via computer, are still uncommon in Japan as a whole. Thus, the methodology is still in the trial-and-error stage.<sup>4</sup> Here, we will elaborate upon our survey method and our reasons for following it.

We explained the purpose of the survey via e-mail to 65,000 people registered with a research company to which we commissioned the survey, and requested their participation. Those who expressed an interest were asked to answer the survey on a rolling basis. The survey was finished when we accu-

<sup>4</sup> For information on the data collection methods, credibility, and security of Internet survey, including those using mobile phones, we referred to Japan Marketing Association’s “Intanetto chosa ni kansuru hinshitsu hosho gaidorain” [Quality Assurance Guidelines for Internet Surveys] (November 2006), among other sources.

**Figure 1. Gender and Age Group of Registered Monitors**

	(%)						
	Age 9 or younger	Ages 10-19	20s	30s	40s	50s	60s or older
Male	0.0	6.7	30.8	36.9	20.2	4.5	0.9
Female	0.0	6.0	40.5	36.9	11.9	1.7	0.2

mulated answers from enough people who met the requirements for subjects' age and 1seg use/non-use.

Whether Internet surveys are conducted via computer or mobile phone access, statistically speaking, the results are not accurate representations of target demographics unless a tool such as the Basic Resident Register has been employed to acquire random samplings. Especially in the case of Internet surveys via mobile phone, there tends to be a compositional bias in terms of registered monitors' attributes (Figure 1), as reflected in the higher concentration of young people among mobile phone Internet users than among people who access the Internet on computers.

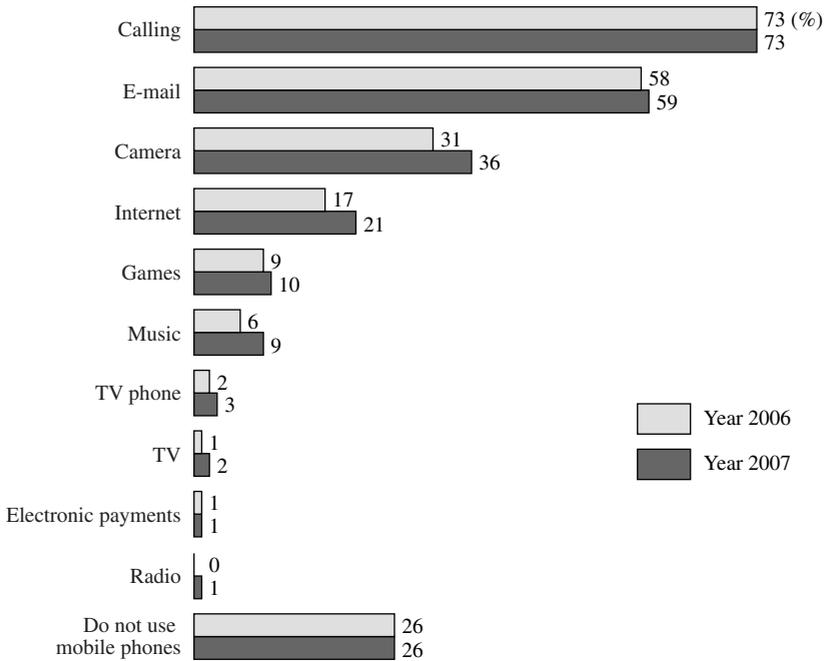
The survey was conducted as an Internet survey via mobile phone in spite of these constraints for two reasons. First, the subjects of this survey, mobile phone Internet users and 1seg users, have easy access to mobile phone Internet surveys. The number of people who use the Internet on their mobile phones already exceeds the number of people who use the Internet on their computers, but as will be discussed later, the majority of this use is for e-mail. It is difficult to secure a fixed percentage of people who actively access the Internet or 1seg broadcasting through standard methods for conducting public opinion polls. Second, since the survey is on "trends in mobile phone use," we decided that we could get a better grasp of how people—particularly active, technology savvy mobile phone Internet users ("pioneer users")—use the phone, e-mail, Internet, 1seg, and other functions of mobile phones by having them actually answer using the Internet via mobile phone.

### Mobile Phone Internet Users a Minority

Below is a rough overview of mobile phone Internet users based on an opinion poll taken in "People and Media Usage in Japan" project.<sup>5</sup> Figure 2 indicates mobile phone use by function, based on the same poll. "Calling" and "e-mail" stand at 73 percent and 59 percent respectively, whereas 36 percent of subjects answered "camera," and 21 percent said "Internet [web searches,

<sup>5</sup> Figures 2 and 3 are reprinted from Shiraishi Nobuko, Nakano Sachiko, and Yoshifuji Masayo, "Dejitaru media: Susumu chijo dejitaru hoso no ninchi" [Digital Media: Increasing Knowledge of Digital Terrestrial Television Broadcasting]. *Hoso kenkyu to chosa* (monthly journal of NHK Broadcasting Culture Research Institute), April 2007.

**Figure 2. Mobile Phone Use By Function**



**Figure 3. Use of Mobile Phone Functions By Gender and Age**

	(%)														
	General	Male							Female						
		20s	30s	40s	50s	60s	70s or older	20s	30s	40s	50s	60s	70s or older		
Calling	73	96	96	95	89	70	34	99	94	82	67	47	27		
E-mail	59	93	90	84	56	37	11	99	94	83	56	26	8		
Internet	21	56	41	31	19	8	1	63	33	23	6	1	0		
Camera	36	54	54	51	34	22	6	85	62	53	28	14	0		
Games	10	33	23	18	5	1	0	35	15	10	4	1	0		
Music	9	28	18	13	4	1	0	35	13	7	3	3	0		
TV Phone	3	5	7	5	0	0	0	12	4	3	1	1	0		
Electronic Payments	1	3	5	4	1	0	0	1	2	0	0	1	0		
Radio	1	5	2	1	2	0	0	5	2	0	2	0	0		
TV	2	4	5	9	1	2	0	2	2	1	2	1	0		
Do not use mobile phones	26	3	3	5	11	28	65	1	5	13	33	52	71		

Shaded items indicate figures that are statistically higher than the general average

viewing].” In other words, the national average of people using the Internet via mobile phone for non-email purposes is 21 percent, still a relative minority.

Figure 3 illustrates the various functions for which people use their mobile phones by gender and age group. Among both men and women, younger users are more likely to use various functions on their mobile phones than older users. This difference between age groups is particularly pronounced in “Internet [web searches, viewing]” use, with the majority of those in their 20s—56 percent of men and 63 percent of women—saying they use the Internet function of mobile phones. In contrast, the number of Internet users is extremely small among older users.

### OVERVIEW OF MOBILE PHONE USE

As is evident from the above, mobile phone Internet users who participated in our study are a minority within the general public, and are comprised mostly of young people. That is, mobile phone Internet users are media-savvy users primarily in their 20s or 30s, which is a fairly limited population. With this information in mind, let us review the results of the study.

#### Group Attributes

First, let us summarize the basic attributes of each subject group. Those in their 20s comprise over 80 percent of the “1seg users in their 20s or younger” and “non-1seg users in their 20s or younger” groups (Figure 4), but there is a slightly higher proportion of subjects aged 10–19 in the “1seg users in their 20s or younger” group than in the “non-1seg users in their 20s or younger” group. Of the “1seg users in their 30s or older,” 58 percent are in their 30s, 36 percent in their 40s, and 6 percent in their 50s. Within the “non-1seg users in their 30s or older” group, there is a relatively large proportion of those in their 30s at 70 percent, and those in their 40s comprise 27 percent while those in their 50s comprise 3 percent (Figure 4).

Looking at the subjects by occupation, “students” comprise 41 percent of those in the “1seg users in their 20s or younger” group, and 28 percent in the “non-1seg users in their 20s or younger” group. On the other hand, people

**Figure 4. Sample by Age Group**

	20 or younger (n=200)		30s or older (n=200)			
	Ages 10-19	20s	30s	40s	50s	60s or older
1seg users	20	81	58	36	6	1
Non-1seg users	13	87	70	27	3	0

(%)

**Figure 5. Sample by Occupation**

	20s or younger		30s or older	
	1seg users	Non-1seg users	1seg users	Non-1seg users
Students	41	28	0	0
Employed full time	33	27	56	40
Part-time workers	12	18	8	19
Homemakers	8	20	15	27
Other	8	8	22	15

(%)

**Figure 6. Sample by Gender**

	20s or younger		30s or older	
	1seg users	Non-1seg users	1seg users	Non-1seg users
Male	52	22	66	32
Female	48	78	34	69

(%)

“employed full time” comprise over half of “1seg users in their 30s or older,” while they comprise 40 percent of “non-1seg users in their 30s or older,” and “homemakers” account for 27 percent of this group. (Figure 5)

Figure 6, which indicates the percentage of male and female subjects, shows that more men than women are “1seg users” in both age groups, and more women than men were “non-1seg users.” Moreover, there is a larger proportion of men in their 30s or older who are “1seg users” than there are in their 20s or younger.

### Internet Use Via Mobile Phone

In all four groups, the greatest percentage of subjects said they use their mobile phones for Internet use “at least once a day” (Figure 7). Nearly 90 percent of “1seg users in their 20s or younger” said that they use their mobile phones to access the Internet “at least once a day.” On the other hand, only 60 percent of “non-1seg users in their 30s or older” use mobile phone Internet “at least once a day,” with 24 percent saying that they use their mobile phones for Internet access “less than three times a week,” a slightly larger proportion than other groups.

When asked what types of sites they access on their mobile phones (multiple answers possible, Figure 8), the most common response for those “in their 20s or younger” for both 1seg and non-1seg users was “music (including downloads).” “News,” “weather,” and information about “hobbies or recreation” were also high on the list. Among “1seg users in their 30s or older,” “news” topped the list, followed by “weather” and “music.” Among “non-

**Figure 7. Frequency of Mobile Phone Internet Use**

(%)

	20s or younger		30s or older	
	1seg users	Non-1seg users	1seg users	Non-1seg users
At least once a day	88	78	75	59
Three to four times a week	4	7	8	11
Less than three times a week	7	14	13	24
Never	2	2	5	7

**Figure 8. Sites Accessed Frequently via Mobile Phone (Multiple Answers Possible)**

(%)

	20s or younger		30s or older	
	1seg users	Non-1seg users	1seg users	Non-1seg users
Video (including downloads)	31	29	26	12
Music (including downloads)	61	55	46	44
News	54	46	61	44
Weather	51	54	55	47
Restaurants, shops	26	30	31	30
Traffic	50	41	38	35
Hobbies, recreation	43	48	40	47
Household issues, housework	17	17	13	22
Government	6	2	3	5
Shopping, reservations	35	31	37	34
Auctions	33	22	27	20
BBS, chats	35	29	29	22
Blogs	27	33	18	16
SNS	25	25	18	10

1seg users in their 30s or older,” many answered “weather” and information about “hobbies or recreation.”

### Use of Various Functions

Across all four groups, the mobile phone function most commonly used is “e-mail” (see Figure 9). “Calling” is also common and particularly high among users “in their 30s or older.” On the other hand, for both 1seg and non-1seg users “in their 20s or younger,” “alarm clock” and “watch” rank higher on the list of commonly used functions, while “calling” comes in relatively low. According to the “People and Media Usage in Japan” survey results,<sup>6</sup> the most commonly used mobile phone functions were “calling” (73 percent), “e-mail” (59 percent), and “camera” (36 percent). However, subjects for this study appear to use a broader range of functions on their mobile phones.

<sup>6</sup> Shiraishi, Nakano, and Yoshifuji, “Degitaru media.”

**Figure 9. Commonly Used Mobile Phone Functions (Multiple Answers Possible)**

	20s or younger		30s or older	
	Iseg users	Non-Iseg users	Iseg users	Non-Iseg users
Calling	66	70	77	77
E-mail	96	98	98	97
Camera	64	63	61	57
Games	51	47	39	37
Playing music	56	31	36	20
TV phone	3	6	2	3
Electronic payments	17	6	23	7
Radio	17	1	17	3
TV	55	1	65	1
QR codes	38	21	30	23
Watch* <sup>1</sup>	72	73	67	76
Alarm clock* <sup>2</sup>	76	84	68	75
Scheduler* <sup>3</sup>	25	29	34	34
Calculator	52	65	50	62
Other	3	2	2	3

\*1 Watch (watch substitute) \*2 Alarm (alarm clock substitute)

\*3 Scheduler (schedule book substitute)

**Figure 10. Indispensable Media (Three Choices)**

	20s or younger		30s or older	
	Iseg users	Non-Iseg users	Iseg users	Non-Iseg users
1	Computer (Internet) 85	Mobile phone 80	Computer (Internet) 87	Computer (Internet) 74
2	Mobile phone 83	Computer (Internet) 70	Mobile phone 80	Mobile phone 71
3	TV 58	TV 57	TV 66	TV 69
4	Books 18	Books 27	Newspapers 25	Video/DVDs 28
5	Video/DVDs 15	Weekly magazines, periodicals, manga 20	Books 20	Newspapers 21

What exactly is the status of the mobile phone in people's everyday lives? Figure 10 shows what subjects consider "indispensable media," of which they were given the option of choosing a maximum of three. In all four groups, "computer" and "mobile phone" came in first and second, and "television"

third. While “books” is ranked fourth among “non-1seg users in their 20s or younger,” “newspapers” comes in fourth for “1seg-users in their 30s or older” and “videos and DVDs” for “non-1seg users in their 30s or older.”

According to “The Japanese and Television 2005” survey<sup>7</sup> conducted by the NHK Broadcasting Culture Research Institute, the top two “indispensable media” for all age groups from age ten to those in their 70s were “television” and “conversation with family.” A unique characteristic of subjects for this study—who are mobile phone Internet users—is their relative lack of dependence on television and naturally, a higher value placed on mobile phones as well as on computers.

### MOBILE PHONES AS A COMMUNICATION TOOL

Although the functions of mobile phones have increased in diversity and range of use, their origins lie in the telephone. That communication is most users’ primary purpose for using mobile phones remains unchanged. As such, let us focus on the use of mobile phones for communication purposes.

According to the results of the “IT jidai no seikatsu jikan chosa 2006” [Time Use Survey in the IT Age 2006] (hereafter referred to as the IT Time Use Survey) presented in the April 2007 edition of *Hoso kenkyu to chosa* [NHK Monthly Report on Broadcast Research], “mobile phone/e-mail” occupies about half of all Internet use. Compared to the results of the previous survey in 2001, in which “calling” was the most commonly utilized function of mobile phones, by 2006, use of mobile phones for “e-mail” had increased dramatically, occupying about the same proportion as “calling.” The percentage of people using mobile phones to make calls one day went from 23 percent in 2001 to 27 percent in 2006, while the percentage of people using mobile phones for e-mail one day increased from 16 percent in 2001 to 29 percent in 2006 (both national total, Monday).<sup>8</sup>

Here, let us present a breakdown of subjects’ use of mobile phones for making phone calls and sending e-mail, and in effect, of communication via mobile phone.

#### Calling

Asked about the frequency with which they use their mobile phones to make

<sup>7</sup> Shiraishi Nobuko, Hara Miwako, and Terui Daisuke, “Nihonjin to terebi 2005” [The Japanese and Television 2005]. *Hoso kenkyu to chosa*, August 2005.

<sup>8</sup> See Nakano Sachiko and Watanabe Yoko, “Kyuzo suru intanetto riyo no jittai” [Realities of the Rapid Increase in Internet Use], *Hoso kenkyu to chosa* (April 2007), for results of the Time Use Survey in the IT Age 2006. (See pp. 175–203 in this issue of *NHK Broadcasting Studies*.)

calls, the most common answer among all four groups was “one to four calls per day,” accounting for about 30 percent of the subjects. However, when those who answered “one to four calls per day” and “ten or more calls per day” are combined under the single category of “at least one call a day,” the figure is just under 40 percent among those “in their 20s or younger” while the figure is just below 50 percent among those “in their 30s or older” for both 1seg and non-1seg users. This indicates that more subjects “in their 30s or older” use their mobile phones daily to make calls. The IT Time Use Survey, too, found that mobile phones were used for “calling” more commonly by men in their 30s and 40s than by people in their 20s or younger.<sup>9</sup> This is because—as we will indicate below—e-mail this become the primary mode of communication for the younger generation, a trend seen also in pioneer users.

### E-mail

According to the IT Time Use Survey, the biggest users of e-mail on mobile phones are men in their 20s and women aged 10–29. Women in this age group spend an average of almost an hour on e-mail.<sup>10</sup> In our study, we first asked subjects the number of e-mail addresses they have programmed in their mobile phone address books (Figure 11). The average number of addresses was 72 for 1seg users in their 20s or younger, 78 for non-1seg users in their 20s or younger, 58 for 1seg users in their 30s or older, and 52 for non-1seg users in their 30s or older. Regardless of 1seg use, subjects in their 20s or younger have more addresses than their older counterparts do. The most common number of e-mail addresses subjects had in their address books (excluding 1seg-users in their 30s or older) was 50.

**Figure 11. Number of Programmed E-mail Addresses (Free Answer)**

	20s or younger		30s or older	
	1seg users	Non-1seg users	1seg users	Non-1seg users
Average	72	78	58	52
Maximum	300	500	350	450
Minimum	3	3	1	0
Mode	50	50	30	50

<sup>9</sup> The national average spent talking on one’s mobile phone (survey on Monday) is 12 minutes, while the figure is higher for men in their 30s at 24 minutes, and men in their 40s at 20 minutes. The majority of this time is “work-related.”

<sup>10</sup> While the national average for time spent on mobile phone e-mail (Monday) is 19 minutes, the figure is 58 minutes for girls aged 10–19, and 50 minutes for women in their 20s.

**Figure 12. Frequent E-mail Correspondents**

	20s or younger		30s or older	
	1seg users	Non-1seg users	1seg users	Non-1seg users
Friends and acquaintances I see often	60	62	41	44
Friends and acquaintances I rarely see	14	12	16	17
People I have never met	3	2	2	4
Family	17	20	34	29
Work-related	3	3	6	6

(%)

Asked the frequency of e-mail use in a day, almost no subjects in the four groups answered “none.” Furthermore, about 40 percent of all but the “non-1seg users in their 30s or older” group said they use e-mail on their mobile phones “at least ten times a day.” The number was lower among “non-1seg users in their 30s or older,” at 30 percent.

We then asked subjects with whom they had the most e-mail exchanges (Figure 12). In all groups, the most common answer was “friends and acquaintances I see often,” which applied to 60–62 percent of both 1seg and non-1seg users in their 20s or younger, but comprised only less than 45 percent of those in their 30s or older. On the other hand, “family” is high on the list of people with whom subjects in their “30s or older” e-mail, at around 30 percent (the figure is less than 20 percent for those in their 20s or younger). The people with whom subjects exchange e-mail is indicative of their respective stages in life; young people primarily e-mail friends, while those in their 30s or older e-mail family members.

### Use of Communication Sites

In addition to e-mail, there are other Internet communication tools such as bulletin board (BBS) and chat systems. Participation in blogs and social networking services (SNS), which has increased tremendously, has become easier via mobile phone. How do pioneer users use these communication sites (Figure 13)?

Some 40 percent of subjects “in their 20s or younger” regardless of whether they are 1seg users or not participate in “BBS and chats,” while approximately 30 percent write or comment on “blogs” and use “SNS.” The figures are lower for those “in their 30s or older,” with around 30 percent participating in “BBS and chats” and 10-20 percent in “blogs” and “SNS.”

Though the phrasing differs slightly and the media is not limited to mobile

**Figure 13. Activities Engaged in Using Mobile Phone (Multiple Answers Possible)**

	20s or younger		30s or older	
	1seg users	Non-1seg users	1seg users	Non-1seg users
BBS or chats	43	44	31	27
Update own blog	27	33	14	14
Leave comments on others' blogs or trackback	22	30	14	14
Participate in SNS	29	27	19	11

phones, a similar question was asked in the IT Time Use Survey. Results from that study indicated that 35 percent of respondents in their 20s had participated in “chats and BBS,” while the same was true for 22 percent of respondents in their 30s. The figures were 25 percent and 11 percent respectively for those who said they “write blogs, write comments on others’ blogs, or trackback,” and 18 percent and 8 percent respectively for those who said they “participate in SNS.” There was a significant difference between subjects in their 20s and 30s. This age differential in the use of communication sites is also true among pioneer users.

### Networking on the Internet

Among the behavior described in the section above, interactions with people one has “met” on the Internet can be considered a distinct form of communication. Talking and exchanging information, sometimes anonymously with people one has never met is unique to the Internet. In addition, it is not uncommon for such people to exchange e-mail addresses or arrange to meet in person. Communication methods have recently become even more diversified, with blogs allowing people to voice their thoughts and opinions to unspecified numbers of people, online games that can be played with complete strangers, and SNS in which users can participate and build new communities through introductions from friends. What they have in common is the fresh appeal of constructing networks that are different from networks that already exist in people’s lives. Are our pioneer users of mobile phones forging new friendships through such methods on the Internet?

Approximately 60 percent of survey respondents in every group except for “non-1seg users in their 30s or older” said that they have made friends through the Internet. The same goes for 40 percent of “non-1seg users in their 30s or older.” The number of people in each group engaging in forms of communication unique to the Internet is in no way small.

**Figure 14. Programmed E-Mail Addresses of People Never Met**

	20s or younger		30s or older	
	1seg users	Non-1seg users	1seg users	Non-1seg users
Percentage of people with such addresses	37	39	26	21
Average number of such addresses among them	12	12	17	12

Are these subjects, then, exchanging e-mail addresses? We asked them how many of the e-mail addresses they have programmed in their mobile phone address books belong to people whom they have never met (Figure 14).

The proportion of those who have e-mail addresses belonging to people they have never met was slightly higher among younger people, at just under 40 percent among both 1seg and non-1seg users “in their 20s or younger,” and about 20–30 percent among both 1seg and non-1seg users “in their 30s or older.” Among such subjects, the average number of e-mail addresses belonging to people they have never met was about the same for all four groups, at 12–17 people.

Lastly, subjects were asked whether they had met with friends they had made on the Internet in person. About 40–50 percent of both 1seg and non-1seg users “in their 20s or younger” and “1seg-users in their 30s or older” said that they had. Only three out of ten “non-1seg users in their 30s or older,” who have made fewer friends on the Internet than other groups, have actually met them. About 20 percent of those “in their 20s or younger” regardless of 1seg use have made friends on the Internet but have never met them, while the same is true for about 10 percent of those “in their 30s or older.”

As expected, the younger age group seems to engage more actively in forms of communication unique to the Internet, but 1seg users “in their 30s or older” are just as active as their younger counterparts. Eight out of ten “1seg users in their 30s or older” who have made friends through the Internet have met them in person, which is a higher percentage than that of their younger counterparts.

### Summary

According to Iwata et al. (2006), communication among contemporary young people is complex; they have a tendency to try to keep constant, deep connections with limited numbers of friends, while also maintaining relationships with people selectively for different purposes and situations. Mobile phones

and the Internet cannot be ignored as factors contributing to this seemingly contradictory approach to interpersonal relationships. In particular, the ability to identify with the form of communication made possible by the Internet that spawns convenient, temporary oneness within anonymous relationships is a unique characteristic of this generation.<sup>11</sup>

It is clear from our survey of our pioneer users that there is an unmistakable difference in communication styles between those in their 20s or younger who have owned mobile phones since they were students, and those in their 30s or older. In fact, compared to the older group, those in their 20s or younger have more e-mail addresses programmed in their mobile phone address books, and the majority of subjects maintain their relationships with people they see on a regular basis by using e-mail. Moreover, more younger respondents participate in new communication sites such as blogs and SNS.

Among those in their 30s or older, 1seg users send e-mail more frequently than their non-1seg-using counterparts, and are also as active in making friends on the Internet as younger subjects. One-seg-users in their 30s or older, who are adapting to the increasing functionality of mobile phones, seem to have a similar sensibility to younger people when it comes to forging friendships on the Internet, but have a stronger tendency to meet people they “meet” on the Internet in person. In other words, younger people are less resistant to creating networks that have no direct connection to their everyday lives, and this implies that the very definition of “friends made on the Internet” may differ between age groups.

## MOBILE PHONES AS VIDEO RECEPTION TERMINALS

Video reception became possible on mobile phones after third-generation mobile phones went on the market in December 2001.<sup>12</sup> At the time, however, these terminals and video services failed to catch on among the general public because of the “heavy weight, short battery life, and limited reception range” of terminals as well as “high subscription cost.” It was only when a flat-rate service began in November 2003 that mobile phones became widely used for video reception.<sup>13</sup>

<sup>11</sup> Iwata Ko, Habuchi Ichiyo, Kikuchi Hiroo, and Tomabechi Shin eds., “Wakamonotachi no komyunikeshon sabaibaru” [Communication Survival of Youths]. Kouseisha-kouseikaku, 2006.

<sup>12</sup> In December 2001, NTT’s FOMA with high-speed Internet capacity went on sale.

<sup>13</sup> In November 2003 when au’s CDMA×WIN with high-speed communication capacity came out, a system of flat-rate packet data communication was adopted, in which e-mail and web access became available for a flat rate.

When mobile digital terrestrial television broadcasting 1seg service entered the market in April 2006, the penetration rate for mobile phone video terminals rose sharply. Partly because various video distribution services appeared on the scene around the same time, 91.2 percent of the 47.77 million domestic mobile phone shipments in 2006 were third generation mobile phones with video reception capabilities.<sup>14</sup> Now, over half of the Japanese population can use their mobile phones to watch videos.

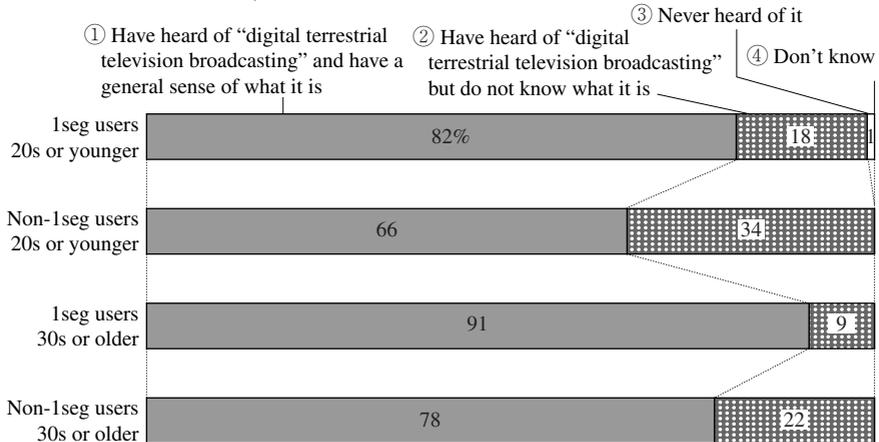
### Knowledge and Appeal of Digital Broadcasting

Except for “non-1seg users in their 20s or younger,” knowledge of digital terrestrial television broadcasting is high among respondents to this survey. In particular, 91 percent of “1seg users in their 30s or older” responded that they “have heard of ‘digital terrestrial television broadcasting’ and have a general sense of what it is,” a fairly high percentage compared to the national average and the other three groups in this study (Figure 15). It appears that 1seg users in their 30s or older are a technology-savvy population when it comes to digital terrestrial television broadcasting.

This is evident in what respondents find appealing about digital terrestrial television broadcasting. The respondents to this study have a higher opinion

**Figure 15. Knowledge of Digital Terrestrial Television Broadcasting**

*Mobile Phone Internet Survey*



Reference: “People and Media Usage in Japan” opinion poll (n = 1,365)

① 66% ② 32% ③ 2% ④ 1%

<sup>14</sup> According to data presented by Japan Electronics and Information Technology Industries Association (JEITA) on February 15, 2007.

**Figure 16. Appeal of Digital Terrestrial Television Broadcasting**

	20s or younger		30s or older		(%)
	1seg users	Non-1seg users	1seg users	Non-1seg users	National total
Higher definition than in earlier TVs	83	72	85	71	62
Data broadcasting provides weather and news at any time	52	43	69	52	32
Interactive programming allows direct participation in programs through quizzes, etc.	45	30	46	38	13
More than two programs can be broadcast simultaneously on one channel	22	19	21	19	18
Available on mobile phones	58	20	70	32	16
None	6	14	3	15	17

Mobile phone Internet survey

At least 50 percent more than the national total

At least 50 percent less than the national total

“People and Media Usage in Japan” opinion poll

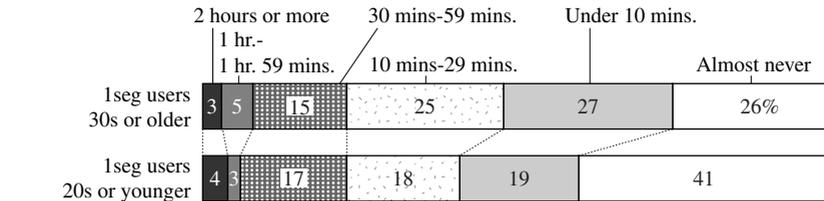
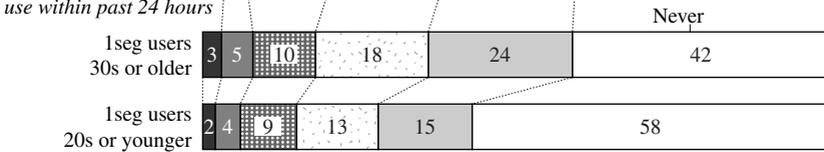
of digital terrestrial television broadcasting than the general national population. Among high image quality, high functionality, multichannels, and mobility, they placed the most value on high functionality and mobility (Figure 16). This tendency is high among 1seg users, especially among those in their 30s or older.

Why the difference in “1seg users in their 30s or older” and “non-1seg users in their 20s or younger?” Figure 10 on page 158 provides an explanation. The difference is in the demand for “games” and “music.” Some in the mobile phone industry hold the view that many in their 30s or older make mobile phone purchases for 1seg, while younger people look for high functionality. That is, for younger people, 1seg happens to come with the high spec mobile phones they buy, and digital broadcast reception is not necessarily the primary function they look for in mobile phones. This is confirmed in patterns of 1seg viewing.

**Digital Broadcasting/1seg Viewing**

Figure 17 shows the amount of time subjects spend viewing digital terrestrial

<sup>15</sup> From a presentation made by KDDI’s Kamiyama Takashi at the National Association of Broadcasters (NAB) Tokyo session on March 14, 2007.

**Figure 17. Minutes Spent on 1seg Use***Minutes normally spent on 1seg Use**Minutes spent on 1seg  
use within past 24 hours*

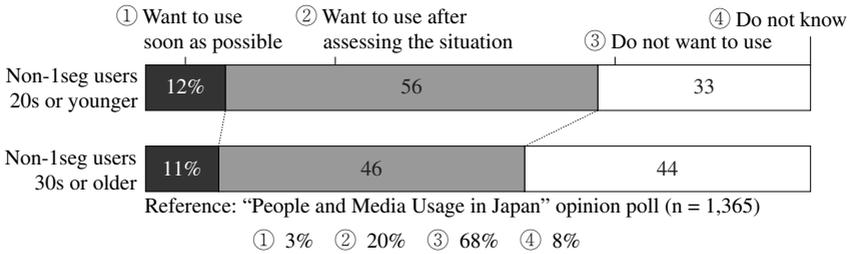
television broadcasting. The most common answer is “under 10 minutes,” followed by “10–29 minutes,” and the percentage of people who said they watch for “30 minutes or more” is approximately 20 percent. According to log analyses of 1seg use by a mobile phone company<sup>15</sup>, use among people aged 10 through their 40s peaks after 8 P.M. Heavy 1seg use continues past 11 P.M. for youth aged 10–19; it is likely that a fairly large number view 1seg in their own rooms, and that the aforementioned 20 percent of those who view 1seg for “30 minutes or more” presumably watch 1seg under these circumstances. However, the mobile phone company’s log analysis indicates that the majority of viewing occurs when users are out, which most likely corresponds to the majority of people who view 1seg for short periods of time as revealed in our survey.

What is striking is that among the group in their 20s or younger 40 percent said that in their normal days—and nearly 60 percent within 24 hours of the survey—they “almost never use 1seg” despite owning mobile phones with such capabilities. These figures are 10-20 percent higher than those for subjects in their 30s or older. In Figure 9 on page 158, “TV” reception is 10 percent lower for this younger group than their older counterparts as a “frequently used function” of their mobile phones. It appears that there are many in this age group for whom 1seg was not a consideration when they bought their mobile phones.

What about non-1seg users? Figure 18 compares the results of the public opinion poll (part of the “People and Media Usage in Japan” project) and the results of this survey. According to the poll, non-1seg users have very little

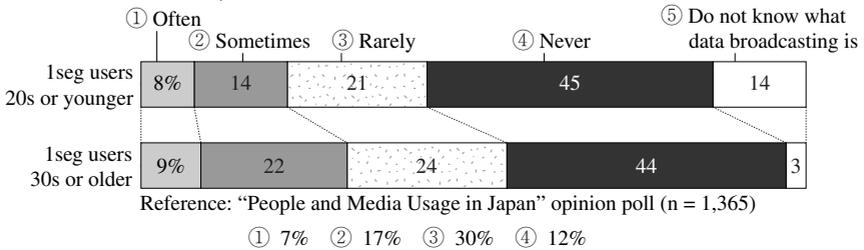
**Figure 18. Desire to Use Iseg**

*Mobile Phone Internet Survey*



**Figure 19. Frequency of Data Telecast Use**

*Mobile Phone Internet Survey*



intention of acquiring digital terrestrial television broadcasting capacity. Most of the cited reasons, such as “functions on current mobile phone are sufficient,” “do not want to watch TV on such a small screen,” and “do not want to watch TV when I am out,” almost entirely eliminate the possibility that they may acquire mobile phones with digital terrestrial television broadcasting capacity. In comparison, around 60 percent of the non-Iseg users in our survey indicated intentions to acquire Iseg mobile phones. Furthermore, those who cited reasons for not getting Iseg comprised less than 10 percent of the group. Considering the current shift towards Iseg as a standard function of all third generation mobile phones, the spread of Iseg among mobile phone Internet users is just a matter of time.

**Television Viewing and Internet Use**

According to our survey, over half of those with Iseg mobile phones use the Iseg capabilities they have, which is a substantial percentage of users. It cannot be said, however, that Iseg and digital terrestrial television broadcasting services are adequately available to them.

Figure 19 indicates the frequency with which respondents use data broadcast in connection with Iseg and digital broadcasting. According to these fig-

**Figure 20. Activities While Watching TV**

(%)

	20s or younger		30s or older	
	1seg users	Non-1seg users	1seg users	Non-1seg users
E-mail friends and acquaintances via mobile phone	71	84	61	66
E-mail friends and acquaintances via computer	22	21	32	28
Internet use via mobile phone	62	65	51	45
Internet use via computer	57	49	59	58
Retrieve information from data broadcasting or interactive functions of digital TV	11	3	14	4
Participate in quizzes and surveys via mobile phone	23	22	25	22
Participate in quizzes and surveys via computer	16	14	26	18
Participate in quizzes and surveys via digital TV	6	2	6	3

ures, there is very little difference between the rate of digital broadcasting viewers in the public opinion survey who use data broadcasting services and the rate of supposedly pioneer 1seg users in our survey who use data broadcast. This figure for our survey respondents in their 30s or older is slightly higher, but not by much. According to a mobile phone company employee, the number of primary links in which users access sites via 1seg data broadcasting service is not as high as they had expected.<sup>16</sup> As with data broadcast on standard televisions, 1seg data broadcasting has yet to be widely utilized by viewers.

When viewers are interested in learning more about a topic covered on a television program, what do they do? We found from our survey that instead of using data broadcast, viewers turn to computers and mobile phones to access the Internet, where they search for more information. Even in the case of interactive programming, people participate via computers and mobile phones more than they do by using the interactive functions provided by digital television sets. We also found that quite a large number of people e-mail friends and acquaintances on their mobile phones while watching television (Figure 20). The survey results confirm the spreading of a “two-screen” or “three-screen” phenomenon of people’s lives.

<sup>16</sup> Kamiyama 2007

**Figure 21. Internet Video Use**

(%)

	20s or younger		30s or older	
	1seg users	Non-1seg users	1seg users	Non-1seg users
Register with sites and watch free videos via mobile phone	10	9	13	5
Register with sites and watch free videos via computer	23	15	28	12
Access sites that do not require registration and watch free videos via mobile phone	23	24	20	8
Access sites that do not require registration and watch free videos via computer	38	27	30	17
Register with sites and watch fee-based videos via mobile phone	2	2	2	2
Register with sites and watch fee-based videos via computer	3	2	8	3
Upload video on sites via mobile phone	2	0	2	1
Upload video on sites via computer	1	1	1	0

### Accessing Video Distributed on the Internet

Internet use while watching television occurs about as often with mobile phones as it does with computers, and even more so when it comes to e-mail exchanges. The situation is different, however, when it comes to video sharing on the Internet. The following observations can be made based on the results shown in Figure 21.

- There is far less video sharing than data sharing
- Computer use exceeds that of mobile phones in both “free video viewing with registration” and “free video viewing without any registration required”
- Fee-based videos are rarely viewed as compared with free videos
- Even among the pioneer user population, only a small portion upload video on video-sharing sites
- 1seg users tend to watch video on the Internet more than non-1seg users

Currently, most videos accessed via the Internet are free, and used for viewing only by computer. Even among pioneer users, less than half view videos via the Internet. However, the number of monthly visitors to video sharing sites soared in 2006. Considering there were 10 million such visitors,<sup>17</sup> there is a possibility that the situation may soon change.

### Summary

More than ten types of mobile phones with 1seg capabilities are available on the market, and they are quickly reaching more and more users. From our survey, we learned that some of these users view 1seg as a second television, for use in their own rooms. In such cases, viewing times are generally 30 minutes or longer, but for the majority of users, who use 1seg when they are away from home, viewing times are shorter.

With regard to the relationship between television and mobile phones (or computers), there are quite a large number of people who look up information, participate in interactive programs, and e-mail friends while watching television. It is of note that many people are engaging in activities related to programs they are viewing using tools beyond the television set.

Currently, nearly half of pioneer users engage in video sharing on the Internet. However, few upload videos; most merely view them. We must assume that user rates are restricted by the quality of video content currently available on the Internet. In addition to examples overseas, in Japan, the number of accesses to YouTube rose sharply in the past year; this suggests that depending on available content, we may see great changes in the state of video-sharing.

In 2007, we expected to see an even greater number of third generation mobile phones than in 2006. If such is the case, there is a great possibility that 70–80 percent of mobile phone users will be able to watch videos on their mobile phones. Changes in the market will lead to tactical changes among service providers. Since there have been many past instances in which services created demand, we cannot deny the chance that our survey results will quickly become outdated.

## CONCLUSIONS AND TASKS FOR THE FUTURE

It is possible to characterize the results of our Internet survey on the trends in mobile phone use from two angles. Below, we will elaborate on these perspectives and identify the challenges that need to be tackled in the future.

<sup>17</sup> According to statistics gathered by NetRatings Japan, Inc.

### **Varied and Multi-layered Use of Mobile Phones**

First, we found that mobile phone users have a good command of increasingly high-performance, multi-functional mobile phones. However, there are differences between groups, based on the attributes of each population, such as age and 1seg-use.

For instance, all groups often use their mobile phones for “e-mail.” Those in their 30s or older, however, rank “calling” high on the list of commonly used mobile phone functions, while those in their 20s or younger do not. There is a great gap between 1seg users and non-1seg users when it comes to viewing videos on the Internet. Some actively engage in a new form of communication behavior by forging networks via mobile phone Internet, but the circumstances of such activities also vary by age bracket.

The mobile phone has spread to nearly the entire Japanese population, and its high-performance and multiple functions have made it the “comprehensive information terminal” now considered indispensable in daily life. The character of actual mobile phone use, however, is varied and complex. By dividing our subjects by age and 1seg use, we have been able to clarify some of these features, but it is possible that even more complexities will be identifiable in a study based on a wider range of subjects.

### **Simultaneous Use**

Second, we learned from this survey that people use their mobile phones as they watch television. The simultaneous use of computer and television had previously drawn attention, and various studies have been conducted of this phenomenon. Such studies pointed out that people not only watch television while using their computers, but that they also use the Internet to conduct further research on the information they get from watching television and also exchange e-mail about television programs they are interested in.

Our study indicates that the mobile phone has inserted itself into this relationship between the television and the computer and has become a fixture. As mobile phones, computers, and television develop close relationships, they give rise to simultaneous use. As the two-screen/three-screen phenomenon becomes the norm in people’s lives, the combinations of these “screens” are becoming more and more varied.

The respondents to our study use mobile phones more frequently than computers in exchanging e-mail with friends and acquaintances as they watch television. Furthermore, though still uncommon, there are people who conduct all of their parallel activities via their mobile phones; they watch television on their 1seg mobile phones as they simultaneously search for related

information on their mobile phones via data broadcast or the Internet. Once mobile phones with third generation capabilities and beyond become the norm, such mobile phone use is expected to increase.

Of course, it is hard to imagine that such simultaneous use will spread in the same way throughout society as a whole. If mobile phones continue to improve in performance and their functions go on expanding, there is a chance that new forms of communication behavior will evolve. Thus, it is important that we continue to investigate how the use of mobile phones, increasingly becoming “comprehensive information terminals,” is differing and diversifying among various social groups and individuals, and the kinds of changes such developments may bring to the state of television broadcasting and viewing.

*(Translated by Kobayashi Chikako)*