



Section 3 New Lifestyles by Ubiquitous Networks

1. Current state of ICT usage in people's lives

(1) Internet use

The Internet population at the end of 2007 is estimated to be 88.11 million people (up by 0.7% from the previous year), with a penetration rate estimated to be 69.0% (up by 0.5 points) (Figure 1-52).

When personal Internet use is compared by generation between 2007 and 2004 (three years earlier), use is expanding across all generations; particularly, use by the generations between 50 and 79 years of age, which increased by about 10 points from three years

earlier (Figure 1-53).

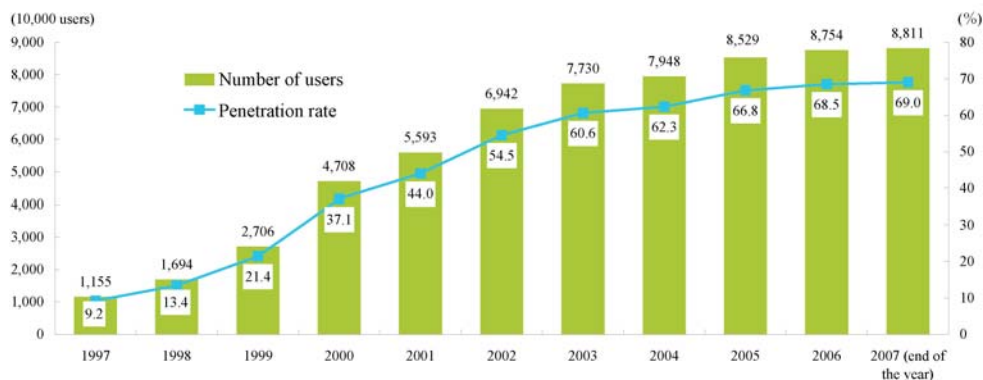
(2) Broadband use

The proportion of Internet users on home computers who use broadband circuits is 40.6% of the entire population above age 6 as of the end of 2007, which accounts for 79.6% of home Internet users (Figure 1-54).

(3) Web use

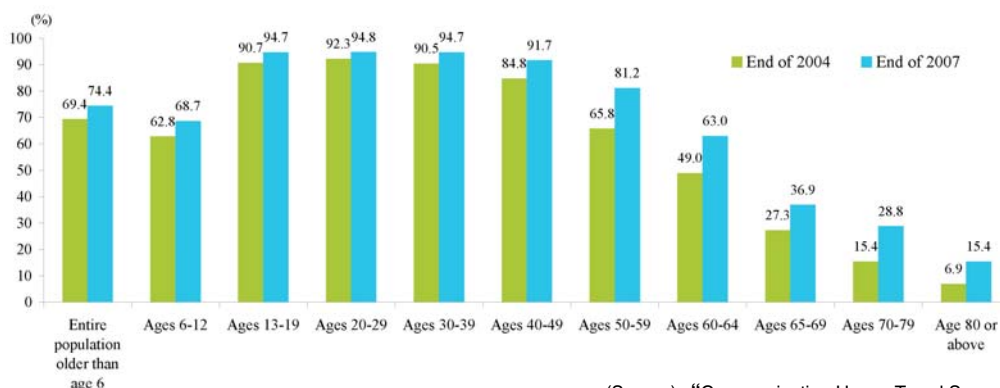
When the characteristics of use by function/services by generation⁵ are examined, use of Internet shopping, Internet auctions and financial transactions

Fig. 1-52 Trends in the number of Internet users and penetration rate



(Source) "Communication Usage Trend Survey," MIC

Fig. 1-53 Internet use by generation (comparison between end of 2004 and end of 2007)



(Source) "Communication Usage Trend Survey," MIC

⁵ Students, persons not in employment employed and part-time workers aged 20-29 are classified as the young generation, full-time employees and those engaged in family businesses are classified as the working group, housewives aged between 20-

64 and persons not in employment and part-time workers aged between 30-64 are classified as the homemaker group, and those over 65 years of age are classified as senior citizens (excluding those in employment).

show only a small difference in the usage rate among generations. On the other hand, there is a gap between the young generation and other generations in terms of use for viewing videos and listening to music, looking up/writing in SNS, and online games. The former use is to use the website as a “tool”, and this is already established in every generation. The latter use is to use the website as a “media” source, and although this usage is yet to be established, it is assumed that it will expand as the young generation grows up (Figure 1-55).

2. Media and information in the ubiquitous society

(1) Media use in today’s society

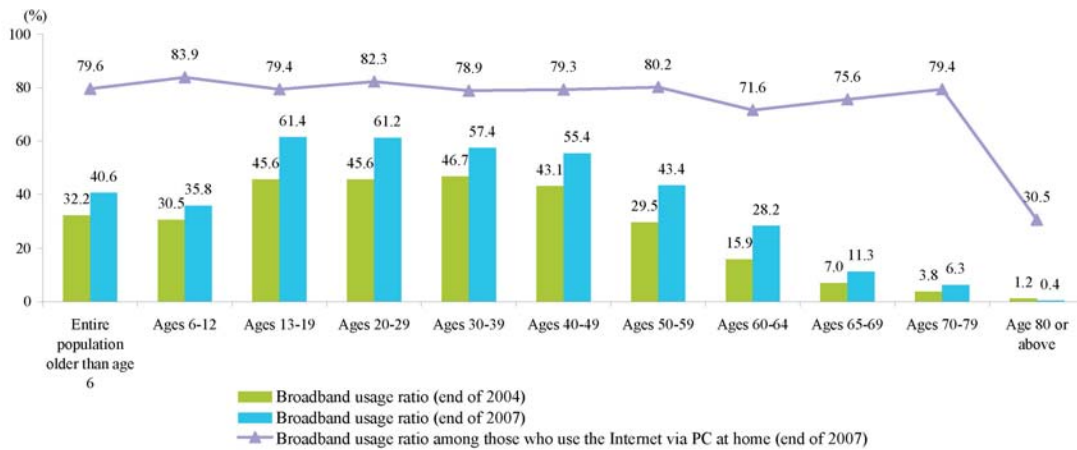
Questionnaire surveys were conducted about the frequency of use in the past two to three years of the following six media that have been picked as those likely to be being used in daily life, namely: TV, newspaper, magazines/books, radio, website/e-mail on PCs (hereinafter referred to as “PCs”), and “web-

site/e-mail on mobile phones (hereinafter referred to as “mobile phones”) (Figure 1-56). The response “no change” tends to be the most cited on a whole. When looking at the respondents who chose either “increased” or “decreased”, more young people responded that their use of newspapers has decreased than those who responded that their use had increased; a difference of 4.1 points, indicating that the young generation is reading fewer newspapers. With respect to PCs, the response of “increased” exceeded that of “decreased” by 53.1 points among the young-generation, whereas the figure is only 23 points among senior citizens. As for mobile phones, the response of “increased” exceeded that of “decreased” by 38.8 points among the young generation, whereas the percentage of the response of “increased” and that of “decreased” is nearly the same among senior citizens.

(2) Evaluation of media

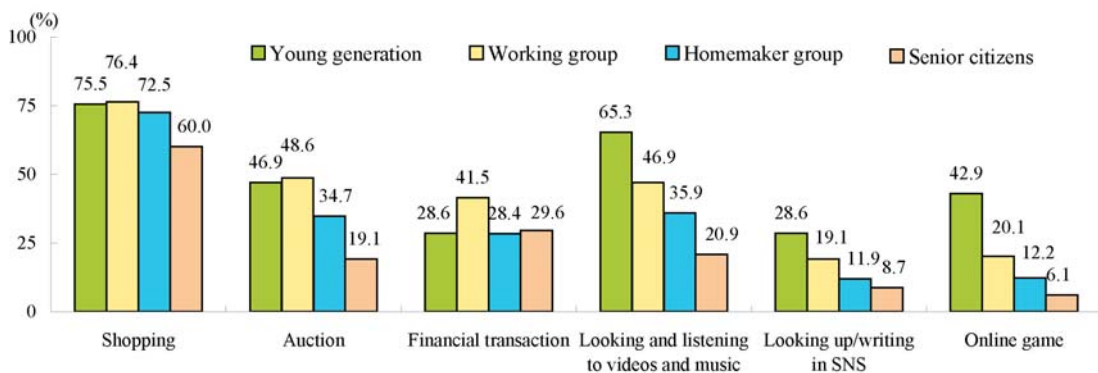
Figure 1-57 is the summary of the results of a questionnaire survey as to how the media is evaluated by users.

Fig. 1-54 Broadband use by generation (comparison between end of 2004 and end of 2007)



(Source) “Communication Usage Trend Survey,” MIC

Fig. 1-55 Function/services used on the website (PCs/mobile phones) (Multiple answers)

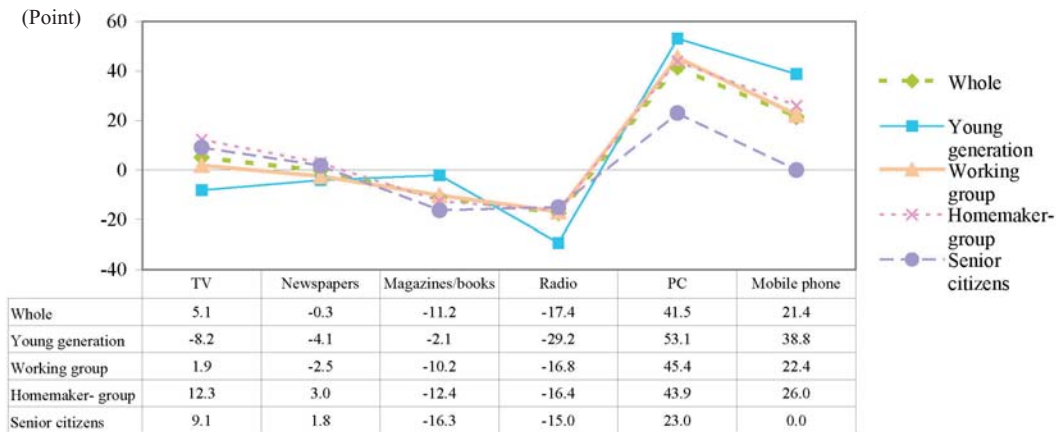


(Source) “Investigative Study on Access to Information and Consumer Behavior in the Ubiquitous Network Society”

The results by generation show that PCs are evaluated “high” among the young-generation on the whole, whereas senior citizens tend to appreciate newspapers more. When looking at the results by

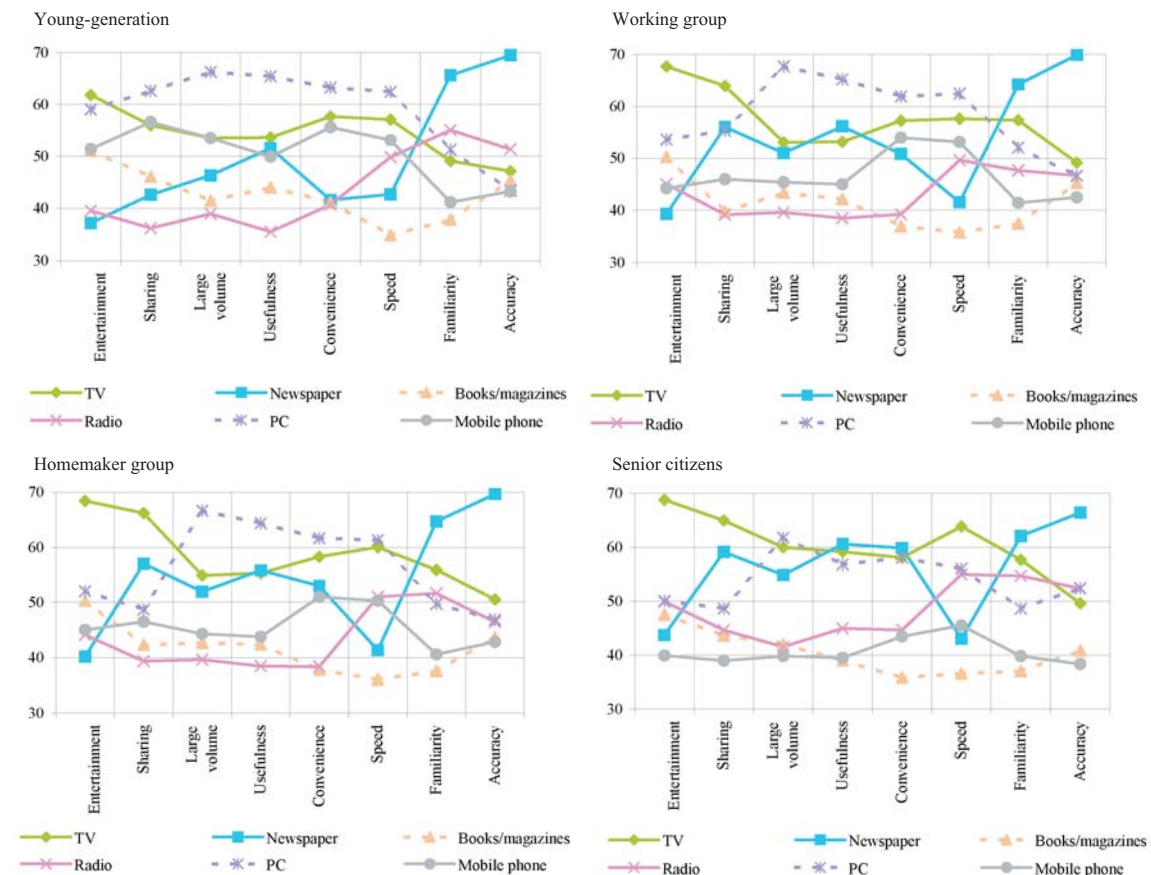
media, the “entertainment” aspect of TV media, “accuracy” and “familiarity (dealing with familiar topics)” aspects of newspapers, “large volume (of information)” aspect of PCs are highly appreciated by

Fig. 1-56 Change in the frequency of media use over the past 2-3 years (the figures are obtained by subtracting the percentage of “reduced” responses from the percentage of “increased” responses)



(Source) “Investigative Study on Access to Information and Consumer Behavior in the Ubiquitous Network Society”

Fig. 1-57 Evaluation on media (The proportion of respondents who answered “there is a relevant characteristic” has been converted to deviation score)



(Source) “Investigative Study on Access to Information and Consumer Behavior in the Ubiquitous Network Society”

all groups. With respect to PCs, “utility (usefulness)”, “convenience (easy access)”, and “speed” are highly appreciated by the young-generation, working group and homemaker group. As for mobile phones, the young-generation evaluates “sharing (transmission or storing of own ideas and opinions)” and “convenience” as “high”.

As seen from the above results, TV’s evaluation has been established as an entertainment media and newspapers as accurate and familiar media. It is thus thought that they will continue to play a role by making use of such characteristics. On the other hand, the volume, utility, convenience and speed of PCs are highly appreciated and the sharing and convenience of mobile phones are also highly appreciated, particularly by the young-generation, and the use of PCs and mobile phones as media tools is expected to expand.

3. Changes in consumer behavior

(1) New consumption patterns in the ubiquitous society

One of the most remarkable changes in people’s lives caused by advanced ubiquitous networks is a change in consumption patterns. Before the ubiquitous society arrived, it took time to exchange information and the volume of information exchanged was markedly smaller, and consumers’ consumption took place within a limited time and with limited information. There is a principle of AIDMA which is a theoretical model of consumers’ psychological processes with regard to product purchase in such limited circumstances. This principle proposes that consumers’ behavior is composed of five stages: “attention” to a product, “interest” in the product, “desire” for the product, “memory” of the product, and “purchase

(action)” of the product.

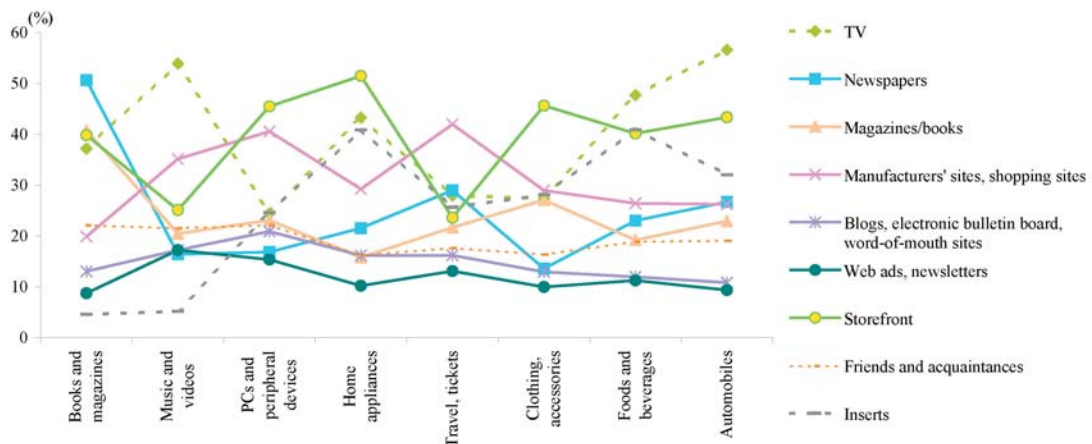
However, now that large volumes of information can be exchanged in an instant regardless of time or place, new consumption patterns have emerged, besides AIDMA. Specifically, after consumers pay “attention” to and become “interested” in a product, they gather “information” on the product on the Internet and make comparisons and examinations of several attractive products using the information collected, and make purchase decisions after “evaluation on options”, and move to actual “purchase”. Furthermore, a consumer who has actually purchased a product discloses his/her own experience of the purchase on the Internet and the information is “shared” among consumers. Such “word of mouth information” becomes a source of information on the product for other consumers. Thus, after becoming interested in a product, a new process of consumer behavior centered on “information” seems to take place.

(2) Attention/information collection/evaluation of options

A. Attention

When looking at the information sources of individual products that have caught consumer attention and interest, the products with the most cited response of “storefront” are PCs and peripheral devices, home appliances, and clothing/accessories. The products with the most cited response of “TV” are music/videos, foods/beverages, and automobiles (Figure 1-58). By transmitting information that impacts on a wide range of consumers with a combination of music and images, TV plays an important role in giving an opportunity for consumers to form an image of the product, know about and become inter-

Fig. 1-58 Information sources that serve as a trigger to learning about the product and increasing interest (multiple answers allowed)



(Source) “Investigative Study on Access to Information and Consumer Behavior in the Ubiquitous Network Society”

ested in the product. The proportion of the Internet as an information source remains at a low level as a whole, indicating that the Internet serves relatively little in giving an opportunity for consumers to know and become interested in a product.

B. Information collection

We asked what methods were used to collect information about the details and reputation of a product in the 12 months before its purchase. The products with most the cited response of “storefront” are PCs and peripheral devices, home appliances, clothing/accessories, foods/beverages, and automobiles. The products with the most cited response of “manufacturers’ sites” are music/videos, PCs and peripheral devices, and travel/tickets (Figure 1-59). Compared with the “attention” stage, the response of “manufacturers’ sites” are large on the whole, next to “storefront,” showing the high percentage of people who are gathering information through the Internet. It is fair to say that the Internet is a suitable means for information collection since it can accurately send the very information that a consumer wants to that very consumer. On the other hand, the number of respondents who selected “TV” which ‘plays’ an important role at the stage of “attention” was relatively small on the whole. It is thus fair to conclude that TV, which transmits one-way information about the characteristics of a product, is not necessarily suitable for consumers to use for gathering information, and the role of TV as part of the information collection process is smaller than at the “attention” stage.

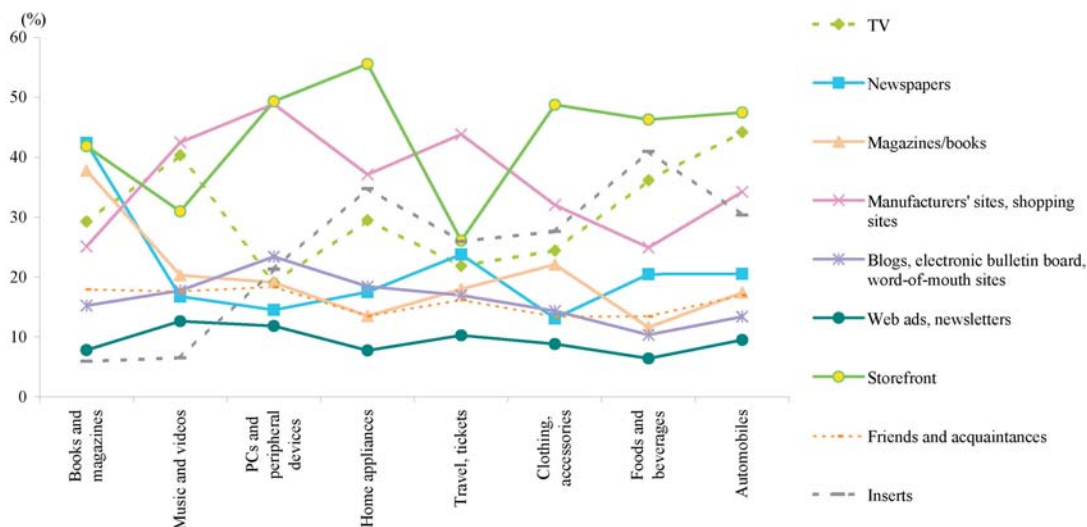
C. Evaluation of options

We asked about the means of evaluation of functions and retail shops for several products prior to purchase. Eight types of target products can be roughly divided into two types of product group depending on the method of evaluation (Figure 1-60). One group includes music/videos, PCs and peripheral devices, travel/tickets with a relatively high citation of “manufacturers’ sites”, and the other group includes books/magazines, home appliances, clothing/accessories, foods/beverages and automobiles with a relatively high citation of “storefront”.

With respect to the former product group with many responses of “evaluation based on the manufacturers’ sites”, price and function are the central factors when evaluating a product before purchase. Many people listen to music on the website before buying. As shown, when making a purchase decision, the decision can be made instantly as long as information is available since the basis for evaluation can be obtained through the Internet. In other words, there is little necessity to evaluate a product by going to a shop and the process from information collection to decision making is quite short.

On the other hand, with respect to the latter product group with many responses of “evaluation at a storefront”, people seem to evaluate a product based on criteria that cannot be collected through the Internet, such as the looks and design of the product, contents, quality, size, etc., in addition to price and functions. When deciding to buy such a product, people tend to decide to buy the product by going to shops and considering where the product is positioned on the evaluation axes. In other word, when evaluating the options, there are products that have high famil-

Fig. 1-59 How people gathered information such as details on products and reputation before purchasing in the last 12 months (multiple answers allowed)



(Source) “Investigative Study on Access to Information and Consumer Behavior in the Ubiquitous Network Society”

ilarity with Internet use and there are other products that do not have familiarity depending on the characteristics of the product and evaluation axes set by consumers. Nonetheless, if more information is made available on the Internet, Internet use for evaluating options can possibly be expanded.

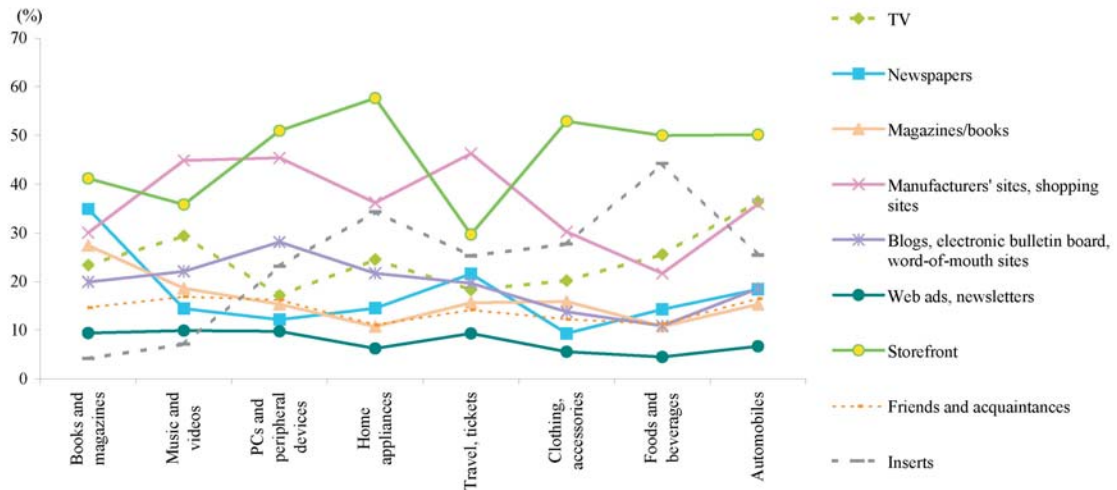
(3) Purchase/Sharing

A. Purchase

The most frequently used channels for the purchase of products in the last 12 months were examined, and it was found that the products with the most cited answer of “storefront” were automobiles (92.9%), foods/beverages (91.2%) and home appliances (84.6%). The products with the most cited response of “PCs/mobile phones” were travel/tickets (53.4%), music/videos (32.5%) and PCs and peripheral devices (25.1%) (Figure 1-61). The results show that the prod-

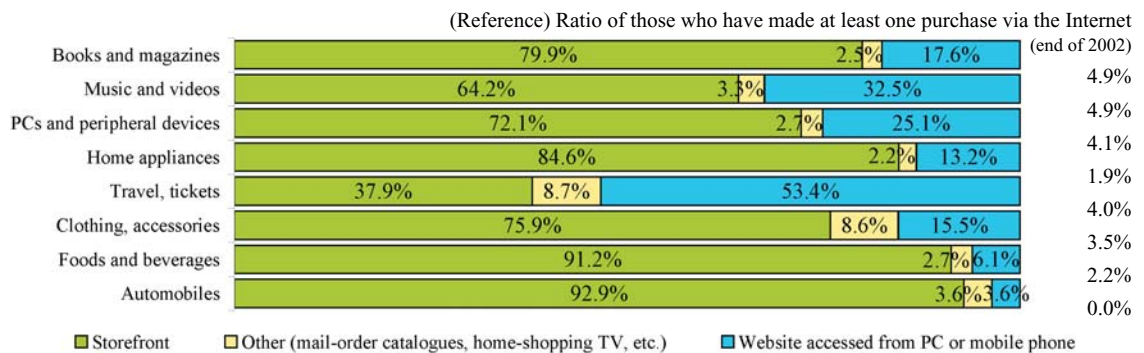
ucts cited as “using manufacturers’ sites” in section (2)-C Evaluation of Options, correspond with the products cited as “using PCs/mobile phones for purchase”, which supports the hypothesis that the process from information collection to purchase decision is short for these products. When compared with five years ago, the ratio of those who purchase products via the Internet is increasing rapidly. This trend is particularly notable for products of consistent quality and for which the entire process from information gathering to purchase decision can be done via the Internet, such as travel/tickets or music/videos. For example, the proportion of those who make travel/ticket purchases via the Internet has already exceeded that of those who make in-store purchases. The Internet has been widely established as a purchase channel and online shopping is coming to threaten the position of storefront purchasing.

Fig. 1-60 How people evaluated the functions of products and stores beforehand in the last 12 months (multiple answers allowed)



(Source) “Investigative Study on Access to Information and Consumer Behavior in the Ubiquitous Network Society”

Fig. 1-61 The most frequently used channel to purchase products in the last 12 months



*Since those who purchased automobiles via websites of PCs/mobile phones in the last 12 months are negligibly low, the figures here are listed as reference.

(Source) “Investigative Study on Access to Information and Consumer Behavior in the Ubiquitous Network Society”
 “Communication Usage Trend Survey (2002),” MIC

B. Sharing of purchasing experience

We then asked if they have shared their own purchase experiences by product type, the young-generation who have shared their experiences via websites accessed by PC and mobile phones cited “books/magazines” most frequently, at 20.8%, followed by “travel/tickets” at 17.0% and “music/videos” at 16.7%. It is thus fair to say that the trend of sharing the purchase experience with the general public is gradually spreading, led by the young-generation (**Figure 1-62**). It is expected that such a trend will expand across the generations.

In response to such new movement, companies are also expanding their efforts to find new contact points with consumers, centered on the Internet. For instance, the rate of companies with more than 100 employees which launched company websites has reached 83.6%, proving that use of the Internet is being widely spread as a means to provide information to business partners and consumers (**Figure 1-63**). The percentage of companies which have launched at least either a business blog or SNS is 6.8%, or one company out of about 15 companies. As seen by the number of employees, the percentage of large corporations with more than 2,000 employees is high at 15.5%, proving that the movement of using consumer-participatory CGM (Consumer Generate Media) for business activities is gaining momentum, particularly among large corporations.

Under such circumstances, the so-called “Web 2.0”, which contributes to the further expansion of ubiquitous networks, the flow of information concerning consumption, with, for example, the disclosure of opinions of consumers themselves and the use of evaluations of other consumers as a criteria for making

decisions about their own consumption, is now becoming a two way communication pathway, in which participants involved in consumption send and receive information, evolving from the traditional one-way path in which companies, the suppliers of products, used to send information to consumers. On Web 2.0, information concerning companies and products is not necessarily positive, but may contain critical and negative information that the companies have been reluctant to release.

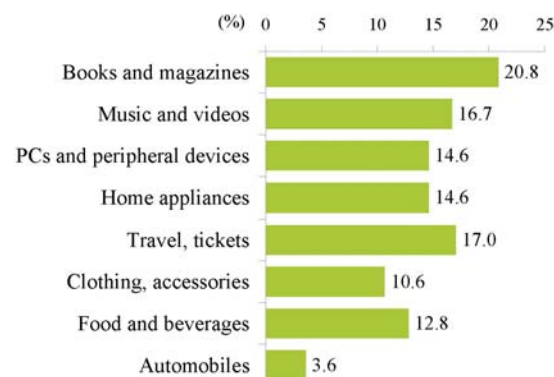
Therefore, in a society with abundant information, in order for companies to provide consumers with information concerning their products effectively, it is increasingly necessary to review conventional corporate strategies and to build new relationships with consumers; specifically, actively utilizing information sent by consumers and developing more effective advertising..

4. Tasks for realizing a safe and secure ubiquitous network society

(1) Experiences of damages accompanying the use of the internet

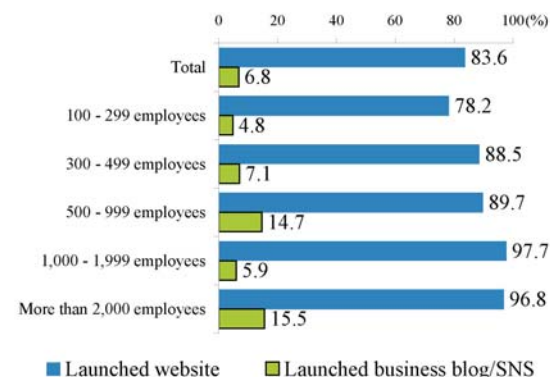
When being asked about any bad experiences accompanying the use of the Internet in households in the past 12 months, the most cited response was “received unsolicited e-mails”, at 40.8% as of the end of 2007, followed by “Detected computer virus but not infected” at 20.0%, and “Infected by computer virus” at 16.0% (**Figure 1-64**). As for bad experiences accompanying the use of mobile phones, “received unsolicited e-mails” was most frequently cited, followed by “received fictitious-claim e-mails” at 7.9%, indicating a tendency toward damaging e-

Fig. 1-62 Share of those who had shared their own purchase experiences with others via websites accessed by PC and mobile phone among young generation



(Source) “Communication Usage Trend Survey (2007),” MIC

Fig. 1-63 Ratio of companies launching websites, business blog and SNS (by number of employees)



(Source) “Communication Usage Trend Survey (2007),” MIC

mails.

Companies using ICT networks were then questioned in the same manner, and frequently cited answers were “detected computer virus but not infected” at 37.7% and “infected by computer virus” at 16.7% (Figure 1-65).

(2) Internet use by young people

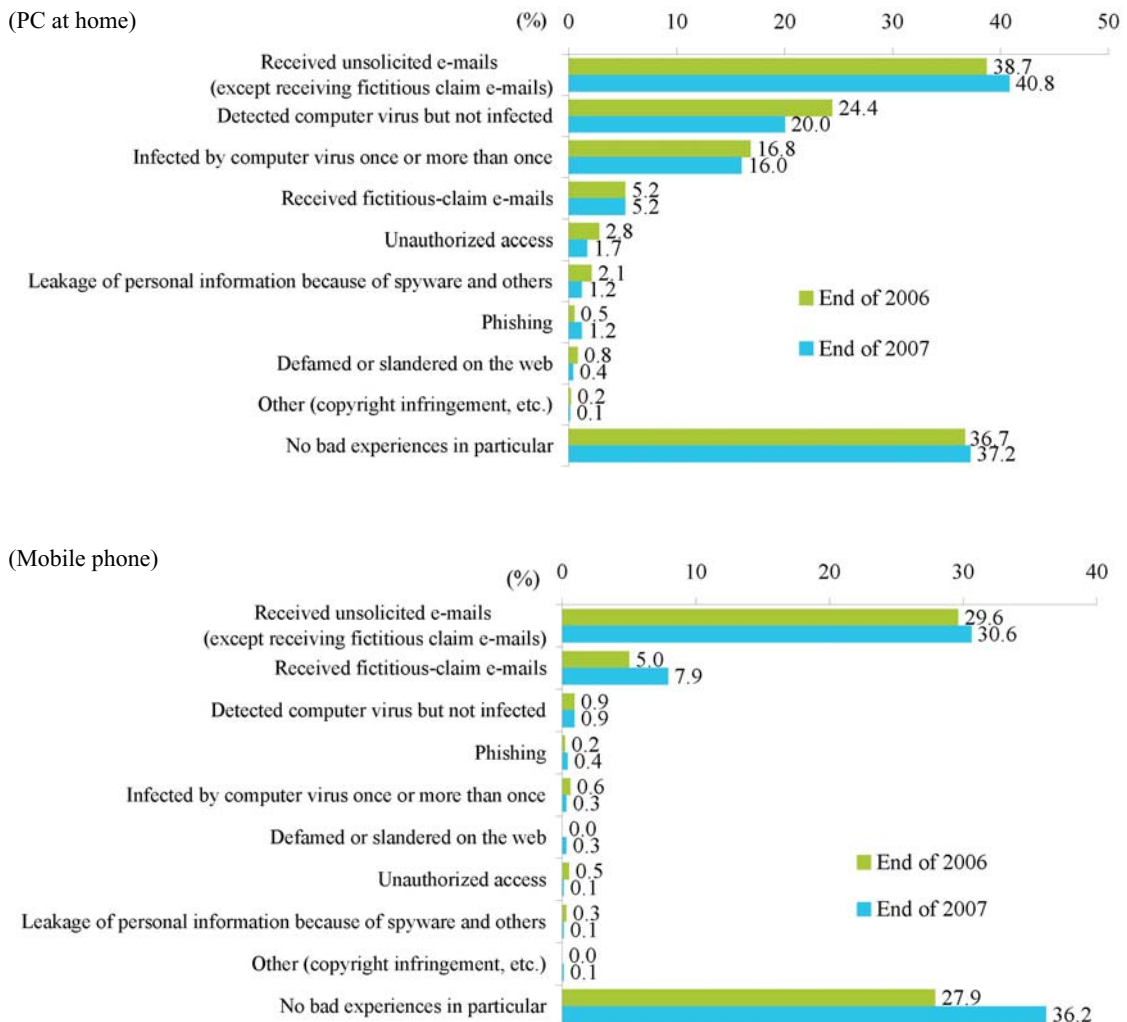
Rapid penetration of the Internet brings about great convenience to users, or the general public, but at the same time, the importance of safe and secure use of the Internet by young people is increasingly pronounced; for example, it has been pointed out that young people are involved in crime through access to harmful sites and that the so-called “underground school website” has been a hotbed for bullying.

We asked households with children under age 18 whether they were aware of filtering software services,

and 77.7% of households (up by 5.7 points from the previous year) answered either “know well” or “have heard of” filtering software used on PCs and 63.3% of households (up by 21.6 points from the previous year) responded either “know well” or “have heard of” filtering software used on mobile phones (Figure 1-66).

As to the question of whether a filtering software service is actually used, 12.9% of households (up by 1.8 points from the previous year) use filtering software on a PC and 21.6% of households (up by 14.2 points from the previous year) use filtering software on a mobile phone, depicting the spread of use compared with the end of 2006 (Figure 1-67). As a background to the penetration of the use of filtering software services lie public-private efforts for developing an environment where young people can be connected to the Internet safely and securely; for example, the

Fig. 1-64 Bad experiences accompanying the use of ICT networks in households (multiple answers allowed)

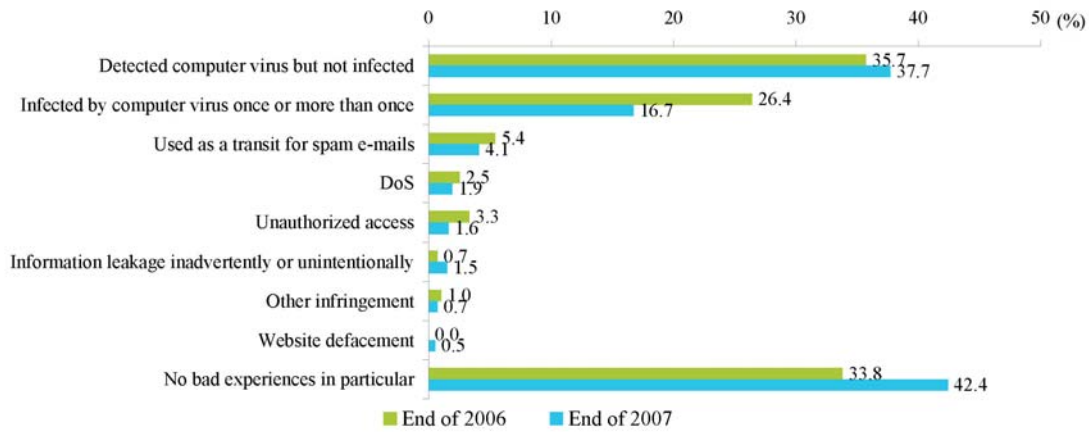


(Source) “Communication Usage Trend Survey,” MIC

Ministry of Internal Affairs and Communications requested mobile phone operators, etc., to enhance their voluntary efforts for the spread and promotion of

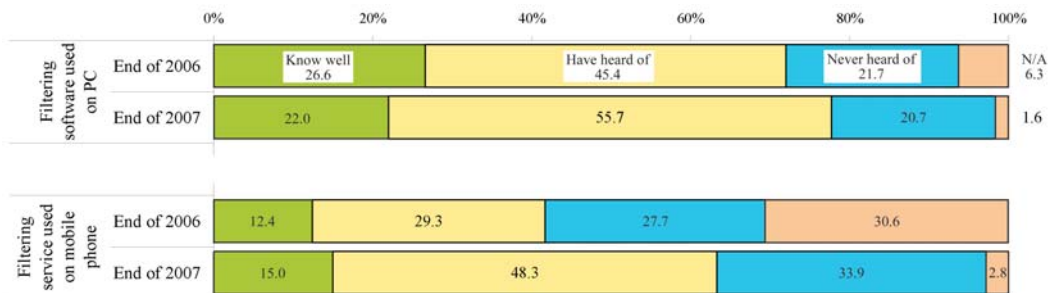
filtering services, in addition to an improvement in awareness.

Fig. 1-65 Bad experiences accompanying the use of ICT networks in companies (multiple answers allowed)



(Source) "Communication Usage Trend Survey," MIC

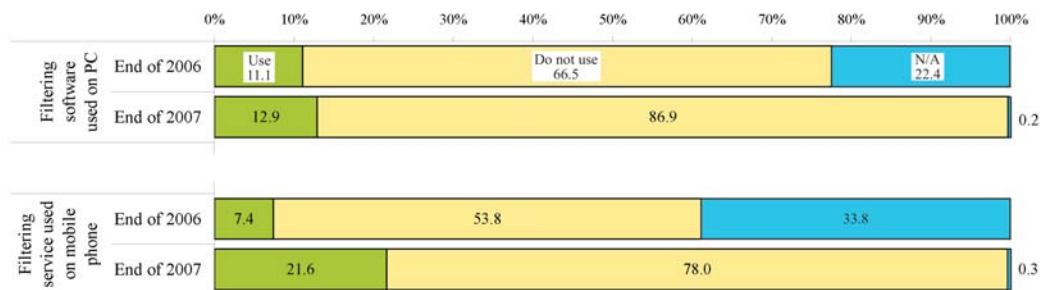
Fig. 1-66 Awareness of filtering services



* Asked of households with children age 18 or younger.

(Source) "Communication Usage Trend Survey," MIC

Fig. 1-67 Filtering services use



* Asked of households with children age 18 or younger that access the Internet via PC or mobile phone.

(Source) "Communication Usage Trend Survey," MIC