Communications Usage Trend Survey in 2002

MPHPT has compiled the Communications Usage Trend Survey as of the end of CY2002 in order to grasp the usage trends in telecommunications and broadcasting services within households (those making up households), offices (establishments) and companies (enterprises).

<Outlines of the survey>
"Communications Usage Trend Survey", which is composed with following 3 sections: "Households", "Offices (establishments) " and "Companies (enterprises) ", has been conducted annually since 1990* as a statistics survey authorized by the MPHPT in accordance with the Statistical Report Coordination Law.   In 2002, the survey conducted as indicated below:

(*The section "Companies (enterprises)", which was conducted as the annual survey on "Corporation Networks" in 1993, 1995 and 1996 separately, has been added in 1997 as a section of "Communications Usage Trend Survey".)

Section	Households	Offices (establishments)	Companies (Enterprises)
Survey area	Nationwide		
Survey period	December in 2002		
Purpose	The usage trends and demands of telecommunications services and broadcasting services by households, establishments and enterprises will be viewed through the survey. The findings will be considered as basic data for making future communications policy.		
Survey Subjects	Households (including single households) headed by someone aged 20 or older as of April 1, 2002	Establishments with more than 5 regular employees excluding the industries "Postal Services" and "Telecommunication" as defined in JSIC.	Enterprises with more than 100 regular employees excluding the industries "Agriculture", "Forestry", "Fisheries " and "Mining" as defined in JSIC.
Sample Size	6,400	5,600	3,000
Sampling Method	Random Sampling (Stratified Two-stage Sampling on city, town or village status)	Random Sampling (Systematic Sampling on regular employee size for each industry)	Random Sampling (Systematic Sampling on regular employee size for each industry)
Effective replies (Rate)	3,673 (57.4%)	3,354 (59.9%)	1,954 (66.5%)

NOTE: "JSIC" stands for "Standard Industrial Classification for Japan"

Highlights of the survey results have been released on the website "Information & Communications Statistics Database" at http://www.johotsusintokei.soumu.go.jp/. For your reference, followings are some of the highlights:
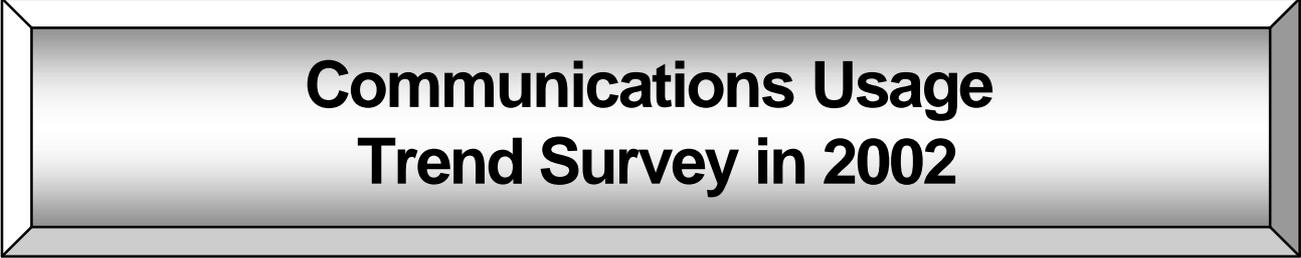
Communications Usage
Trend Survey in 2002

Key Survey Results

1. Internet Penetration

Number of Internet Users and Penetration Rate at the end of 2002

The number of Internet users increased by 13.49 million compared to 2001, reaching 69.42 million persons. The penetration rate is 54.5% (a 10.5 point year-on-year increase), surpassing 50% for the first time. More than one of every two people use the Internet.


Million persons
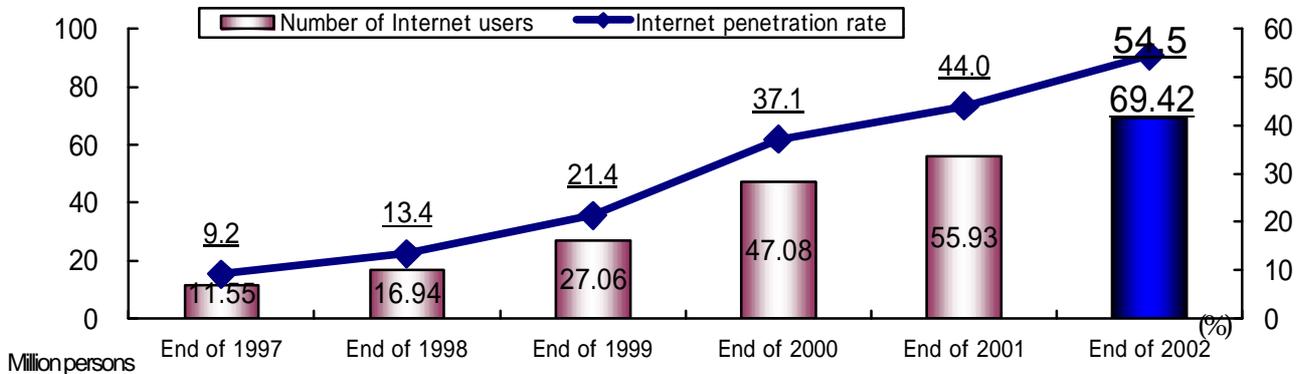
Notes
1. The number of Internet users includes persons six years old or older who use one or more PCs, mobile information terminals such as cell phones and PDAs, game devices, or television devices to access the Internet.
2. The domestic Internet penetration rate as of the end of 2002 (54.5%) was calculated based on the estimate from this survey of 69.42 million Internet users and the total population as of the end of 2002 of 127.38 million persons from the "Projected future population and proportion by age group, 2000-2050: Medium variant" by the National Institute of Population and Social Security Research.
3. The figures for 1997 to 2000 from the "2001 White Paper on Information and Communications in Japan" (Ministry of Public Management, Home Affairs, Posts and Telecommunications). The figures for 2001 are estimates from the 2001 Survey of Trends in Communications Usage.
4. Estimated figures for 2000 and earlier are not capable of direct comparisons because of increases in usage among senior citizens and elementary school students and expansion of the subject age groups (up to 1999, the subject age group was 15 to 69; in 2000 it was 15 to 79, and in 2001 it was 6 and older).

Internet Penetration Rates of Households, Business Establishments, and Enterprises

Internet penetration rates of households and business establishments increased rapidly to 81.4% (up 20.9 points from the previous year) and 79.1% (up 11.1 points), respectively. The enterprise penetration rate also increased to 98.4% (up 0.8 points).
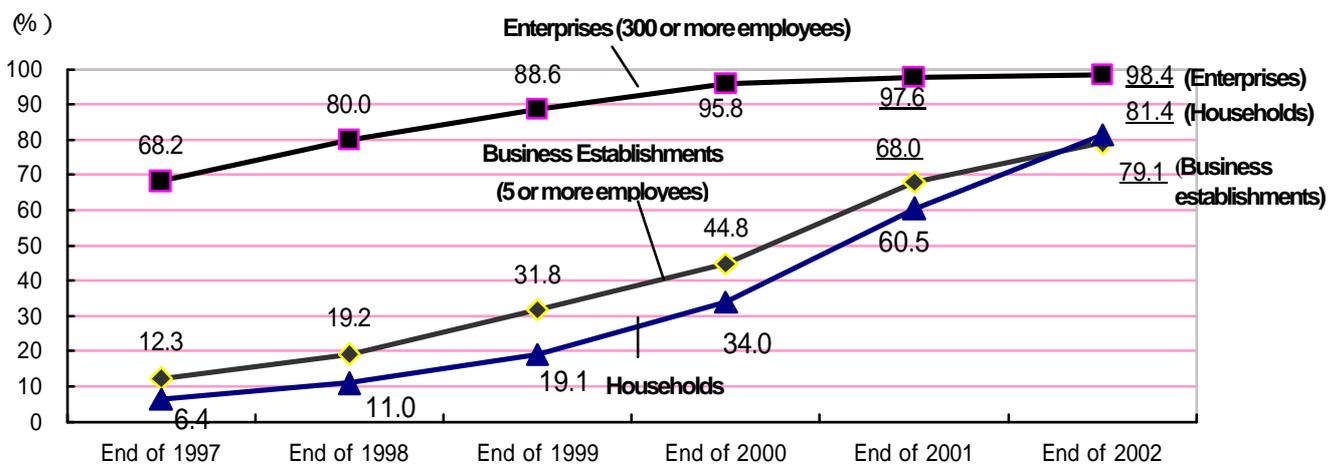

Note: The "household penetration rate" is the percentage of households where a household member uses a PC, cell phone, or other device to access the Internet for personal use from "home or other location."

1

Reference

Countries and Territories with More than 10 million Internet Users
Japan is second only to the United States in the number of Internet users.

Country	Million persons
United States	165.75
Japan	69.42 Million
China	59.1
United Kingdom	34.3
Germany	32.1
South Korea	26.27
Italy	19.25
Russia	18
France	16.97
Canada	16.84
Brazil	13.98
Taiwan	11.6
Australia	10.63
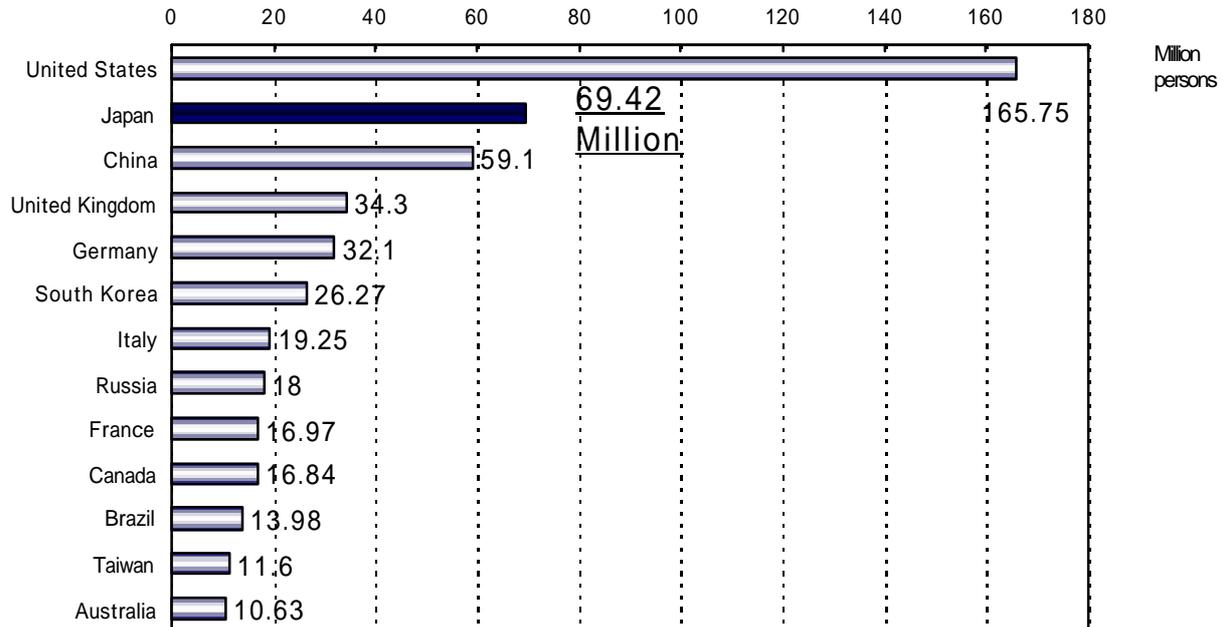
Countries and Territories with Internet Penetration Rates Higher than 50%
Japan's rank in Internet penetration rate is 10th, a substantial move up from 16th place last year.

Country	Penetration Rate (%)
Iceland	69.8
Sweden	67.8
Denmark	62.7
Netherlands	60.8
Hong Kong	59.6
Norway	59.2
United States	59.1
United Kingdom	57.2
South Korea	56.2
Japan	54.5 — 10th place (16th place last year)
Australia	54.4
Canada	52.8
New Zealand	52.7
Switzerland	52.7
Finland	51.9
Taiwan	51.9
Singapore	51.9
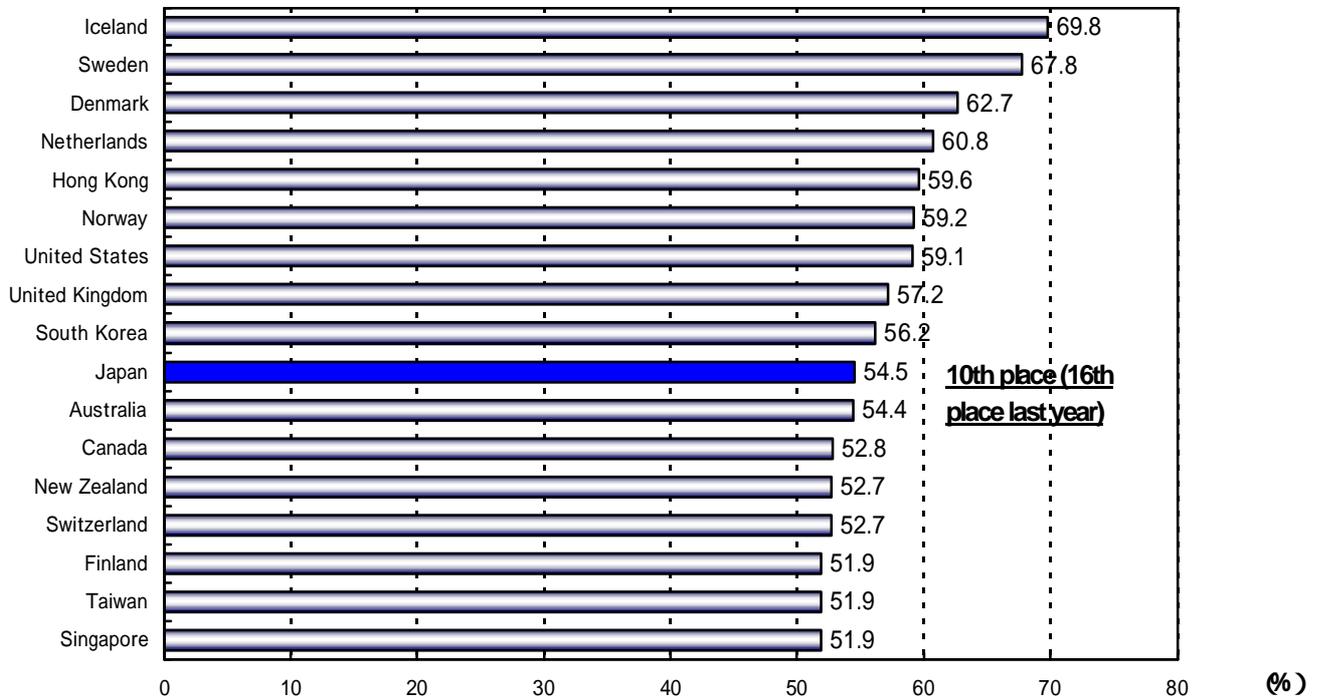
Notes: The figures for Japan are form the results of the 2002 Survey of Trends in Communications Usage as of the end of 2002). Figures for South Korea are publicly announced figures from the Ministry of Information and Communication, Republic of Korea and figures for China are from the China Internet Network Information Center (both as of the end of 2002). Figures for other countries were taken from public records of NUA surveys (NUA data is compiled from information released by survey and other organizations in each country and is published on the NUA Web site. Survey methods and timing may differ from country to country, so the figures are for comparison purposes only).

2. Broadband Penetration Rates Among Households and Individuals

Internet Connection Methods from PCs in Households
Broadband connections increased by 14.7 points from last year to reach 29.6%. Telephone lines (dial-up) were down 2.3 points to 44.9%.
Always-on connections (broadband and ISDN) are used in 44.3%, or just less than half, of all households.

Changes in Household Internet Connection Methods (among houses with a PC used to connect to the Internet) (multiple responses possible)
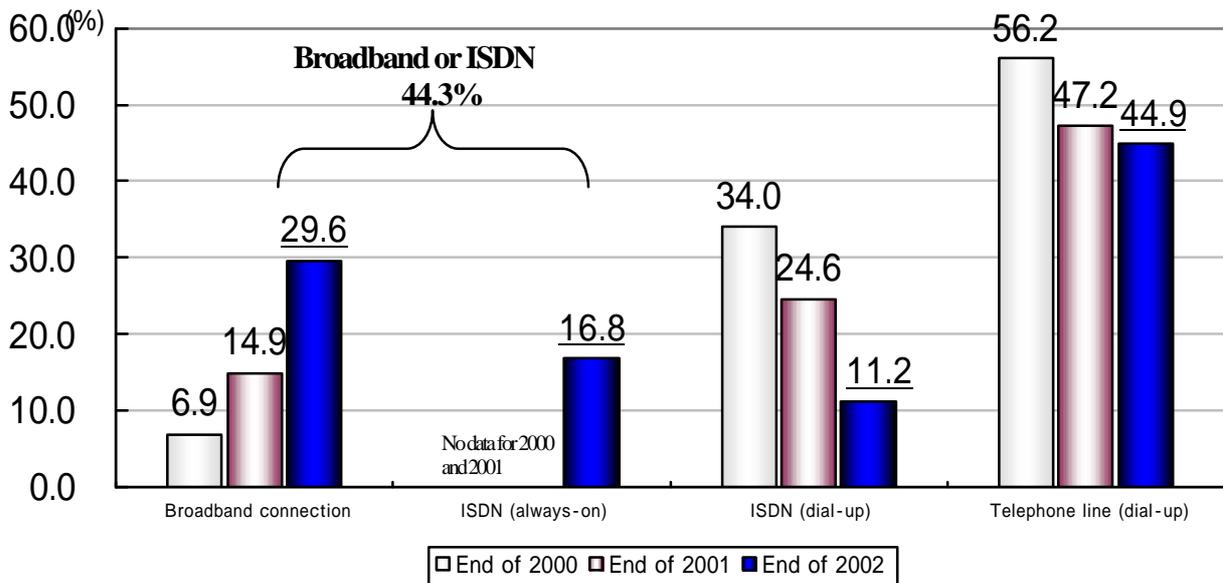
Notes: Broadband lines include DSL, cable Internet, wireless (fixed wireless access (FWA), etc.), and FTTH (fiber to the home) (FTTH has been included in the survey since 2001), ISDN (always-on) since 2002.

3

3. The Personal Digital Divide

Internet Usage Rates by Personal Attributes

Usage rates increased for every attribute compared to last year (the increases were particularly large among persons in their 20s, persons with annual income of less than 2 million yen, and persons living in small towns). Nonetheless, the digital divide is still present.

**Internet Usage Rates by Age**

	6-12 year olds	13-19 year olds	20-29 year olds	30-39 year olds	40-49 year olds	50-59 year olds	60-64 year olds	65 and older
End of 2001	49.2	72.8	68.5	68.4	59.0	36.8	19.2	7.7
End of 2002	52.6	88.1	89.8	85.0	75.0	53.1	32.8	9.9
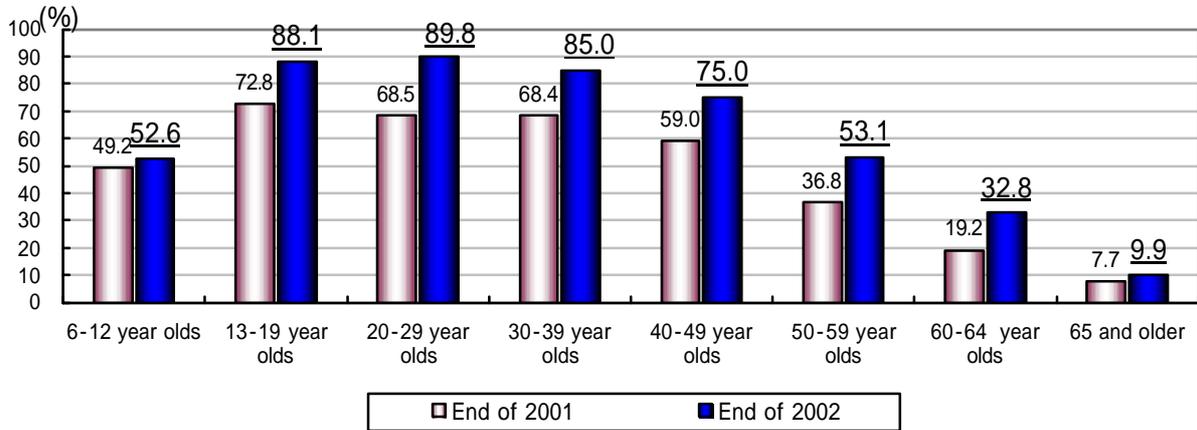
Internet Usage Rates by Annual Income

	Less than ¥2million	¥2million- less than ¥4million	¥4million- less than ¥6million	¥6million- less than ¥8million	¥8million- less than ¥10million	¥10million- less than ¥15million	¥15million- less than ¥20million	¥20million or more
End of 2001	25.3	35.0	44.3	50.1	50.3	57.2	54.6	55.3
End of 2002	45.6	51.9	59.7	62.7	64.5	68.5	70.7	70.9
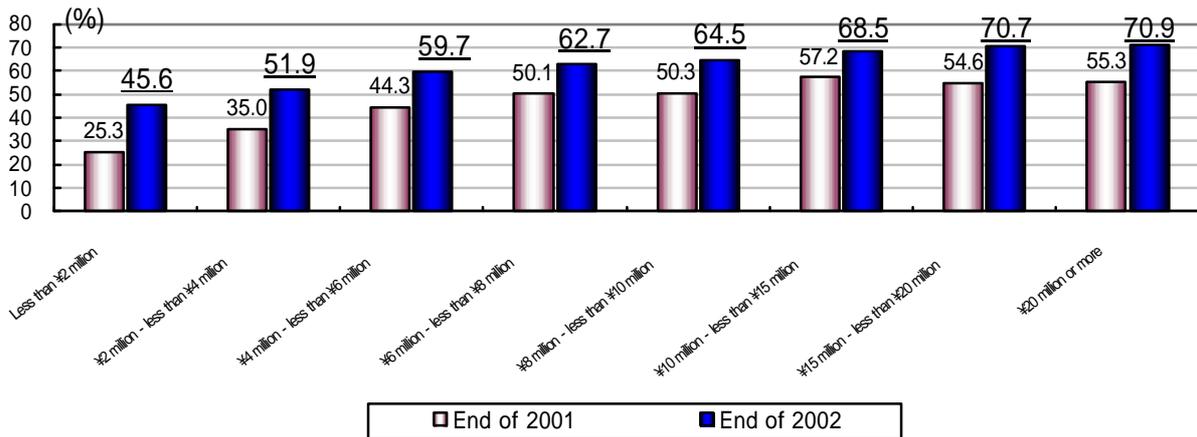
Internet Usage Rates by Gender

	Male	Female
End of 2001	53.0	40.6
End of 2002	68.3	55.9
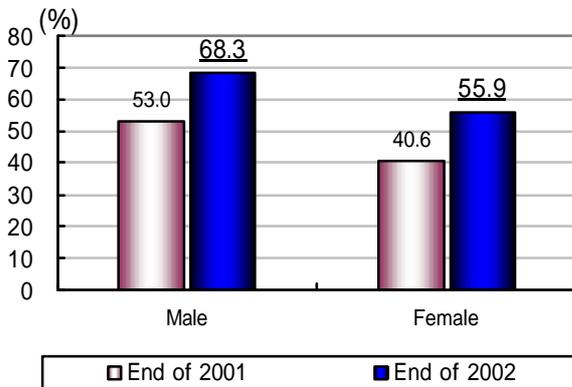
Internet Usage Rates by Size of Municipality

	Ordinance- designated cities and special districts	Other cities	Town and villages
End of 2001	54.4	45.3	36.4
End of 2002	67.8	60.8	53.8

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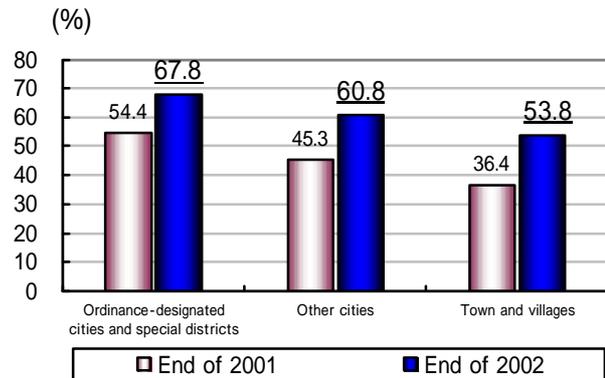
4. Concerns, Dissatisfaction, and Harm Among Individual Internet Users

The most common concerns and areas of dissatisfaction by Internet users when using the Internet are "protection of privacy" (54.1%) and "infection by computer viruses (41.4%).

Only 8.8% of users have no concerns or areas of dissatisfaction, and most Internet users use the Internet with some concerns and areas of dissatisfaction.

Concerns and Areas of Dissatisfaction When Using the Internet (multiple responses possible)

| Category	%
Protection of privacy	54.1
Cmputer viruses	41.4
Reliability of electronic payment systems	27.3
High communications costs	25.8
Disclosure of unlawful or harmful information	21.0
Equipment is expense	17.0
Slow connection speeds	16.8
Information searches are difficult	11.1
Reliability of certification technology	10.8
Equipment is difficult to operate	10.5
Protection of intellectual property rights	8.1
Don't know if e-mail I sent arrived	4.3
Necessary information is not available	2.3
No need to use	6.6
Other	2.1
No concers or dissatisfactions	8.8

Of users who access the Internet from a PC, 29.8% have incurred some harm from nuisance e-mail, viruses, etc. (1) Of the harm incurred, "discovery of or infection by a virus" was the most common at 20.7% followed by "nuisance e-mail" at 15.5%. The percentage whose PCs were actually infected by a virus is 10.4%.

Percentage of Users who Incurred Harm from Internet Usage and Breakdown of the Types of Harm (multiple responses possible) (in the past year)
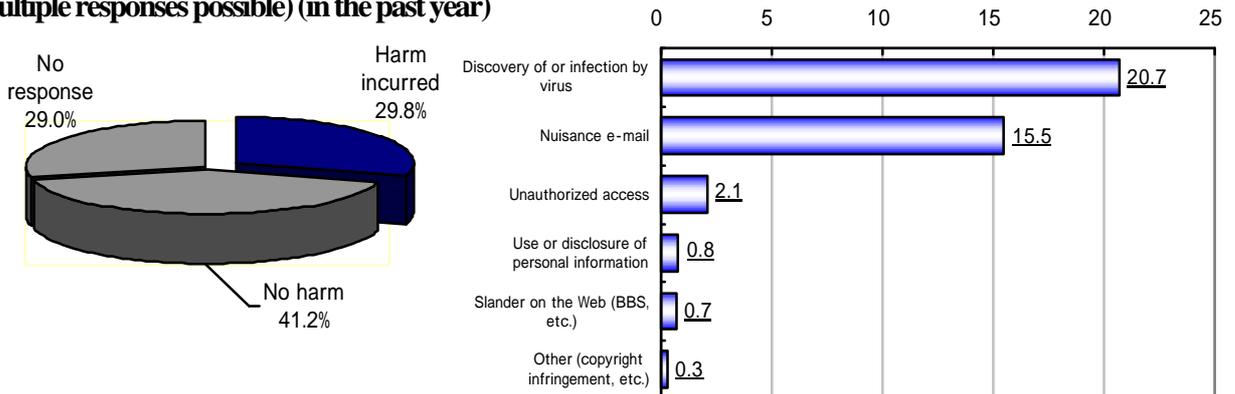
No response 29.0%
Harm incurred 29.8%
No harm 41.2%

Type of Harm	%
Discovery of or infection by virus	20.7
Nuisance e-mail	15.5
Unauthorized access	2.1
Use or disclosure of personal information	0.8
Slander on the Web (BBS, etc.)	0.7
Other (copyright infringement, etc.)	0.3

Virus and Unauthorized Access Countermeasures Taken by Internet Users (multiple responses possible)
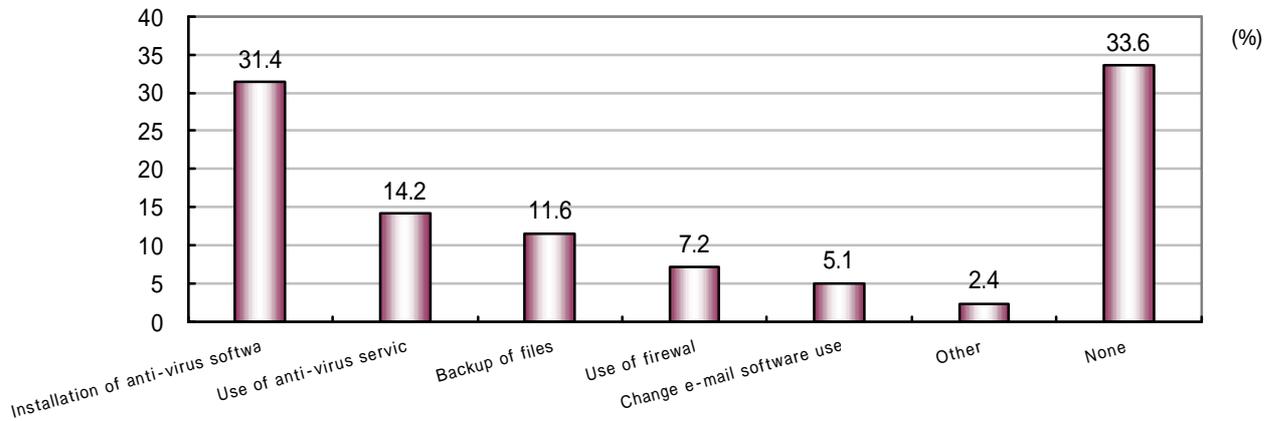
5. Barriers to Internet Use among Non-Users

The most common response non-users gave for not using the Internet is "no need" at 36.0%, followed by "difficulty using a PC" at 23.4% and "concerns about protecting privacy" at 14.8%.

Barriers to Internet Use among Non-Users (multiple responses possible)

Barrier	%
No need to use the Internet	36.0
Difficulty using a PC	23.4
Concerns about privacy	14.8
High cost of computer equipment	11.0
High communications charges	10.1
Disclosure of unlawful or harmful information	7.6
Concerns about virus infection	6.0
Concerns about reliability of electronic payment systems	6.0
Protection of intellectual property rights	3.1
No information required	3.1
Difficulties in searching for data	2.5
Concerns about the reliability of certification services	2.0
Don't know if e-mail I sent was received	1.5
Slow connection speeds	1.2
Other	4.4

6. Harm to Corporate Information and Communications Systems and Countermeasures

> **Harm to corporate information and communications networks (Internet, corporate communications networks, etc.)**
>
> The percentage of companies reporting harm incurred rose to 76.2%.
>
> The most common type of harm was 'discovery or of infection by computer virus" at 75.0%, while 43.5% of companies reported that they were actually infected by a virus.

Percentage of corporate information and communications networks incurring harm and types of harm (multiple responses possible) (in the past year)
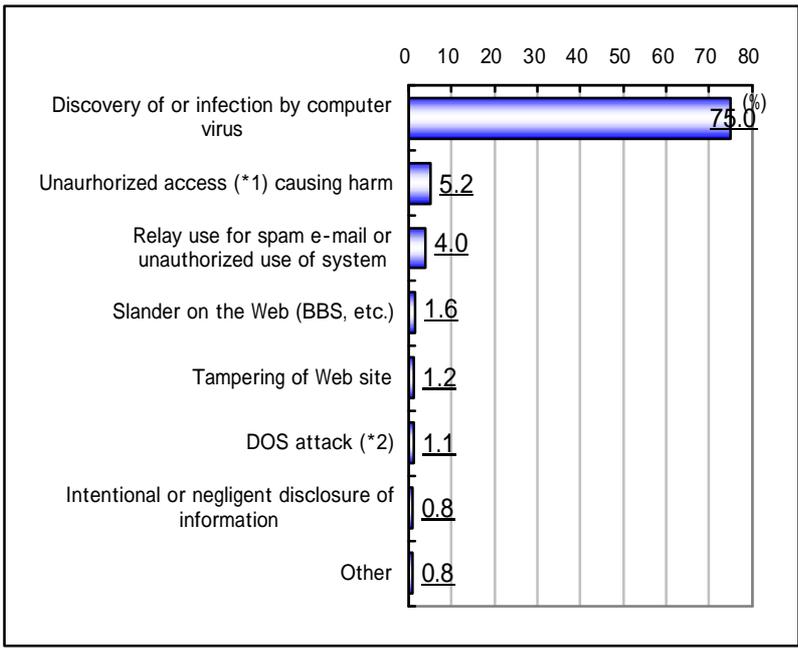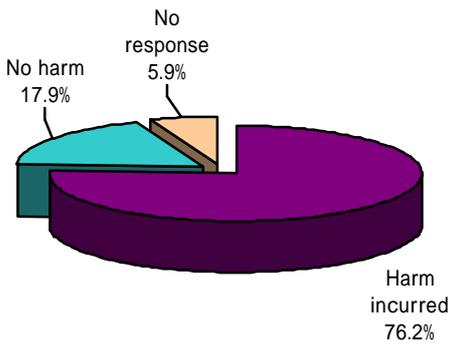
*1. Unauthorized entry to a corporate or other computer system to cause problems to the system or engage in unauthorized use.

*2. An attack intended to interfere with the provision of services by, for example, sending large volume of e-mail to a mail server to cause the system to go down.

Corporate Security Measures

The most common response was "installation of anti-virus software on PCs" at 83.8%.

Only 2.2% of companies indicated that they take no measures; thus, almost all companies implement some type of security measures.

Corporate Information and Communications Network Security Measures (multiple responses possible)

| Measure	Percentage
Installation of anti-virus software on PCs and other terminals (OS, software, etc.)	83.8
Access controls using IDs and passwords	64.9
Installation of anti-virus software on servers	55.9
Installation of firewalls	52.0
Employee training	20.9
Adoption of security policies	19.1
Construction of a virus wall when connecting externally	18.2
Use of agent servers	14.5
Line monitoring	12.5
Outsourcing security to an external organization	8.6
Adoption of anti-virus manuals and in-house training	8.5
Encryption of data and networks	8.2
Authorization of users through installation of certification technology	7.7
Security audits	6.5
Installation of intruder detection systems	4.0
Other	0.6
Don't know	1.0
None in particular	2.2

(%)

Other Survey Results
Part 1: Households and Individuals

1. Internet Penetration Rates

Breakdown of Terminals Used by Individuals for Access to the Internet

"PC" is the most common type of terminal, used by 57.22 million people (82.4% of Internet users use PCs). Access from "cell phones, PHS (personal handyphone system), and mobile information terminals" is used by 27.94 million people.
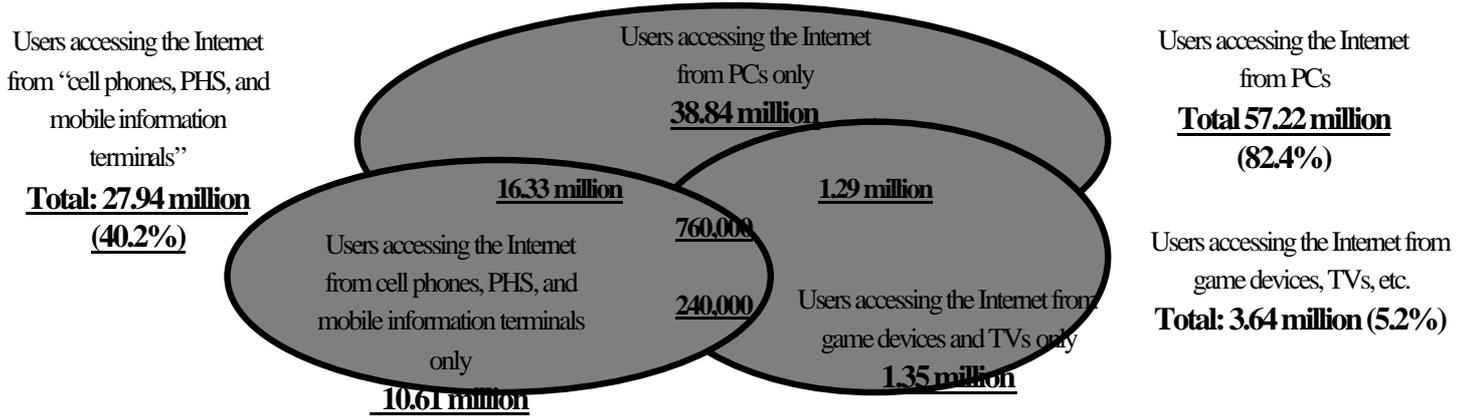
Users accessing the Internet from "cell phones, PHS, and mobile information terminals"
Total: 27.94 million (40.2%)

Users accessing the Internet from PCs only
38.84 million

Users accessing the Internet from PCs
Total 57.22 million (82.4%)

16.33 million

760,000

1.29 million

Users accessing the Internet from cell phones, PHS, and mobile information terminals only
10.61 million

240,000

Users accessing the Internet from game devices and TVs only
1.35 million

Users accessing the Internet from game devices, TVs, etc.
**Total: 3.64 million (5.2%)**

Note: Figures in parentheses indicate the percentage among all Internet users aged six years and older and do not add up to 100%. The numbers of users have been rounded off, which may result in discrepancies in the total.

Total: 69.42 million

Breakdown of locations where users access the Internet from PCs

"Home or other location" accounted for the greatest number of users at 45.85 million persons.
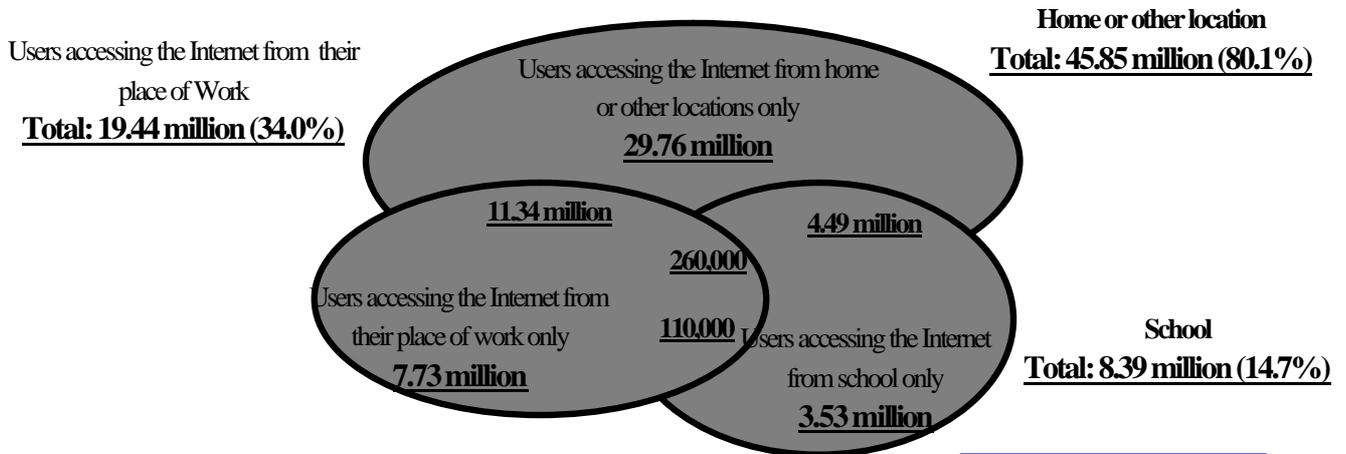
Users accessing the Internet from their place of Work
Total: 19.44 million (34.0%)

Users accessing the Internet from home or other locations only
29.76 million

Home or other location
Total: 45.85 million (80.1%)

11.34 million

260,000

4.49 million

Users accessing the Internet from their place of work only
7.73 million

110,000

Users accessing the Internet from school only
3.53 million

School
Total: 8.39 million (14.7%)

Total: 57.22 million

Note: Figures in parentheses indicate the percentage among all Internet users aged six years and older and do not add up to 100%. The numbers of users have been rounded off, which may result in discrepancies in the total.

Use of Broadband Connections by Individuals

Of users who access the Internet from "home" using a "PC," 31.1% use a broadband connection.

Use of Broadband Connections by Individuals (among users who access the Internet from "home" using a "PC")

No response
9.4%

Use broadband
31.1%

Do not use broadband
59.5%
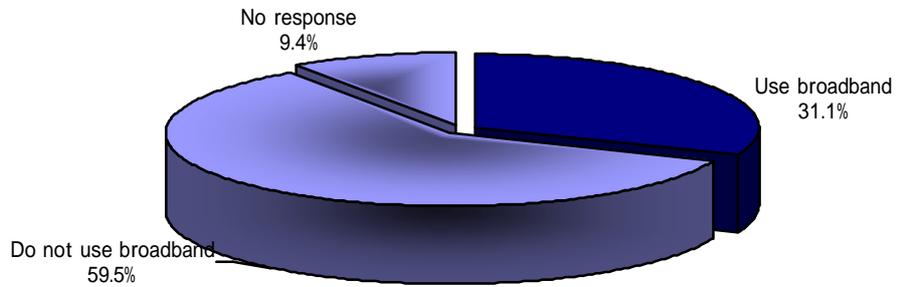
Use of Wireless LAN Services in Public Places ("hot spots") by Individuals

Wireless LAN services in public places are used by 8.8% of Internet users.

88

72.6

18.6

0   10   20   30   40   50   60   70   80   90   100 ( )

☐ Have used wireless LAN   ☐ Have not used wireless LAN
☐ No response
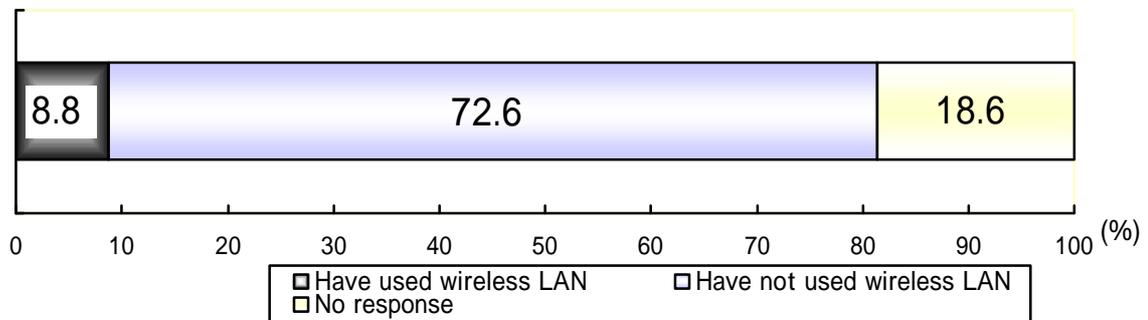
2. Internet Usage by Individuals

Breakdown of Internet Usage from PCs

"E-mail is the most common use at 65.3%, followed by "information searching" at 59.1%.

Breakdown of Internet Usage from PCs (multiple responses possible)

Category	%
E-mail	65.3
Information searches	59.1
News, weather, other information	46.5
Government and local government information	20.2
Online shopping	19.5
Bulletin board and chat	19.5
E-mail magazines	18.4
Downloading images	17.8
Contests and surveys	17.6
Downloading and viewing videos	12.9
Online auctions	11.5
Downloading and listening to music	11.5
Access to for-pay content	9.9
Job searching	8.4
Web site design	7.8
Online gaming	7.2
Online banking	5.4
Online investing	2.7
Internet telephony	2.5
E-learning	2.4

Breakdown of Internet Usage from Cell Phones

"E-mail" was the most common response at 83.3%, followed by "text messaging" at 45.8%.

Breakdown of Internet Usage from Cell Phones (multiple responses possible)

| Category	%
E-mail	83.3
Text messaging	45.8
Purchase of for-pay content	37.3
Viewing and downloading standby images	34.8
News, weather, and other information	31.5
Online shopping	19.9
Information searches	18.1
Contests and surveys	10.1
Downloading and viewing videos	9.3
E-mail magazines	5.8
Online gaming	5.5
Bulletin boards and chat	4.8
Online banking	1.7
Online auctions	1.5
Government and local government information	1.3
Job searching	1.1
Online investing	0.7
Web site design	0.6
E-learning	0.3

11

Frequency and Duration of Internet Use by Individuals

Among Internet users, the greatest number (42.9%) access the Internet at least once per day. The

most common duration of use is 10 minutes to less than 30 minutes (23.4%)

Frequency of Internet Use

Less often (at least once per year) 9.7%

No response 6.3%

At least once per day 42.9%

At least once per month 12.3%

At least once per week 28.8%
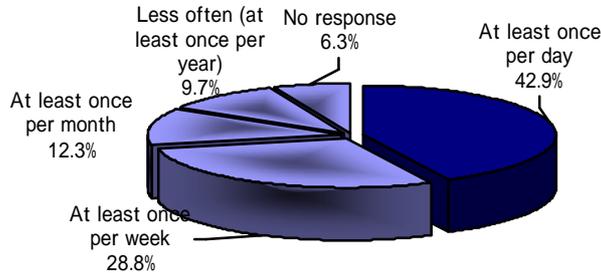
Duration of Internet Use (per use)

No response 23.8%

2 hours or more 5.3%

1 to less than 2 hours 8.1%

30 minutes to less than 1 hour 19.4%

Less than 10minutes 20.0%

10 to less than 30 minutes 23.4%
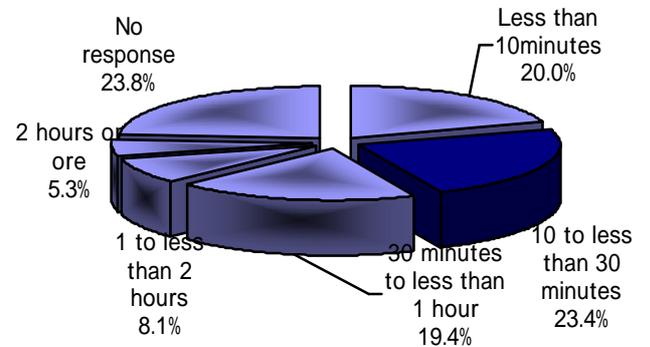
Online Shopping by Individuals

Of all Internet users, 20.8% use online shopping.

Use of Online Shopping (in the past year)

No reponse 37.4%

Have made a purchase 20.8%

Have not made a purchase 41.8%
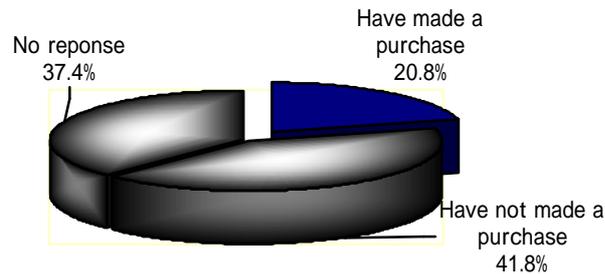
Breakdown of Online Shopping Purchases by Individuals

The most common response was "books and CDs" at 22.0%.

Breakdown of Online Shopping Purchases (multiple responses possible)

| Category	Value
Books and CDs	22.0
PC- related products (software, etc.)	18.7
Hobby- related items, toys, etc.	18.3
Event and transportation tickets	17.4
Clothing, accessories, and jewelry	14.6
Foods	9.8
Travel reservations	8.8
Furniture, electrical appliances, and household items	8.1
Other	5.6
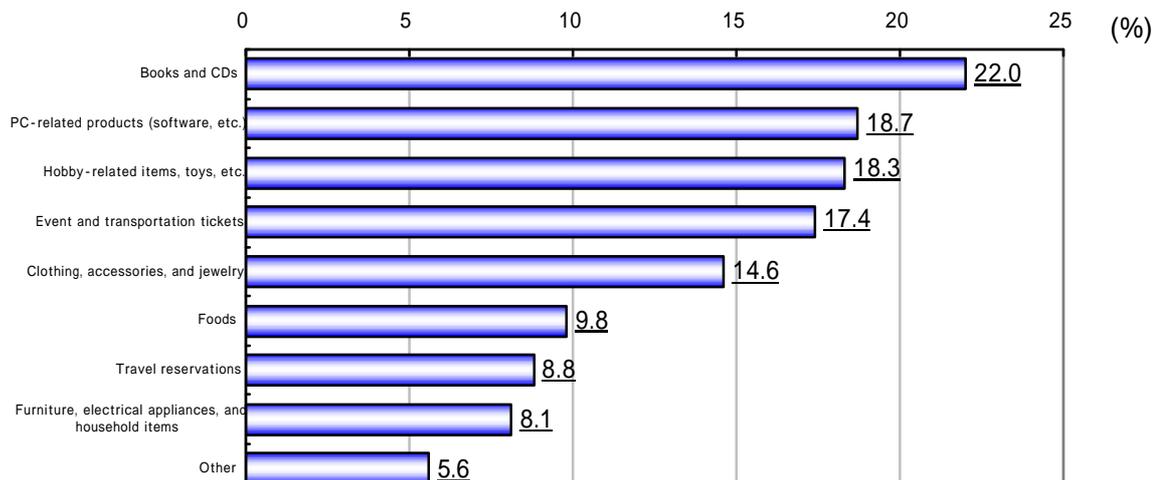
Online Shopping Purchase Amounts and Payment Methods Used by Individuals

The most common online shopping purchase amount (annually) was "more than ¥10,000 to ¥30,000" at 22.2%. The most frequently-used payment method was "credit card" at 18.4%.

Online Shopping Purchase Amounts

No response
30.6%

\10,000 or less
20.0%

\500,001 or more
2.0%

\10,001 - \30,000
22.2%

\100,001 - \500,000
9.6%

\50,001 - \100,000
7.8%

\30,001 - \50,000
7.8%
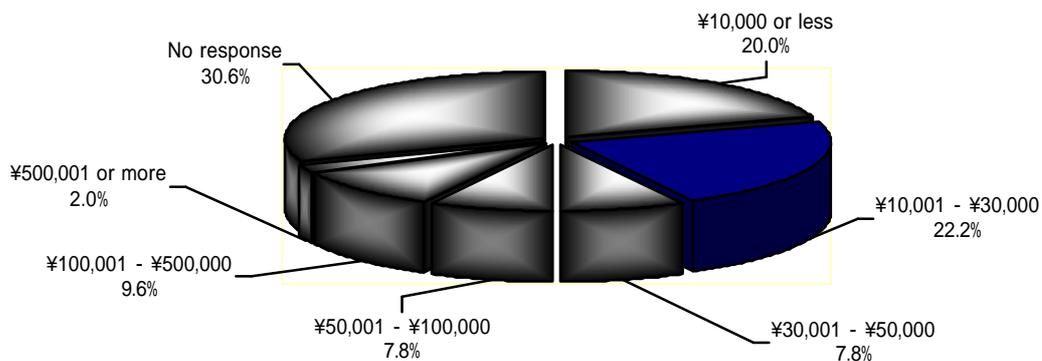
Payment Methods Used for Online Shopping (multiple responses possible)

(%)

	0	2	4	6	8	10	12	14	16	18	20

Credit card — 18.4

Postal payment or bank — 17.3

COD — 15.1

Convenience store — 9.2

Online banking — 3.1

ISP or telephone company — 1.3

Electronic money — 1.1

Other — 1.2

13
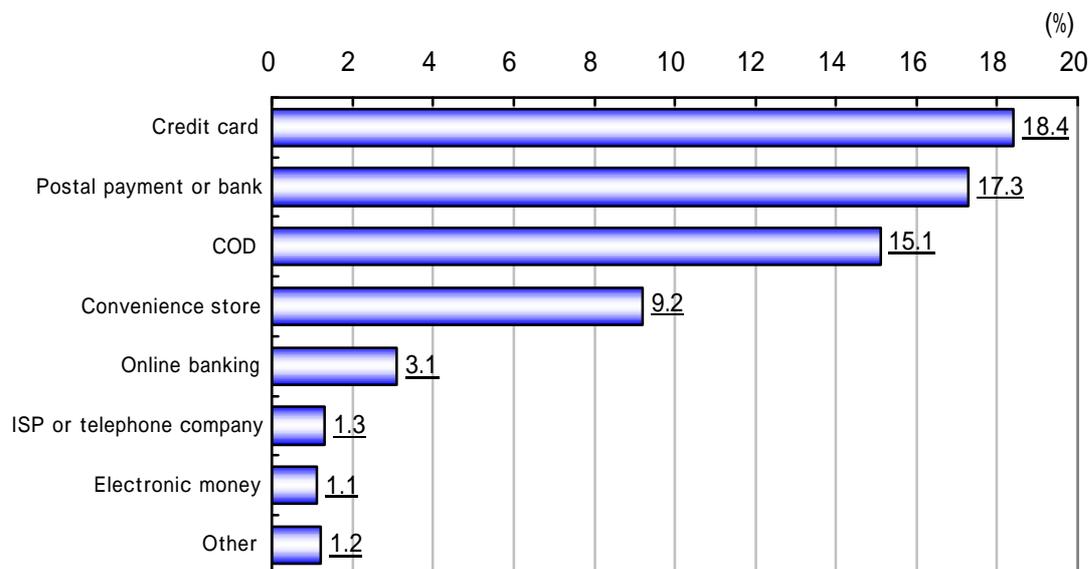
3. Purchase of For-Pay Content by Individuals

Among users who access the Internet from PCs, 9.9% have purchased for-pay content. The most common type of content purchased is "software" at 30.0% of purchasers, followed by "music and videos" at 22.7%. Among users who access the Internet from cell phones, 37.3% have purchased for-pay content, and the most common content purchased is "games" at 81.2% followed by "text messaging" at 50.8%.

Purchase of For-Pay Content by Internet Users who Access the Internet from PCs (in the past year)

No response 15.1%
Have made a purchase 9.9%
Have not made a purchase 75.0%
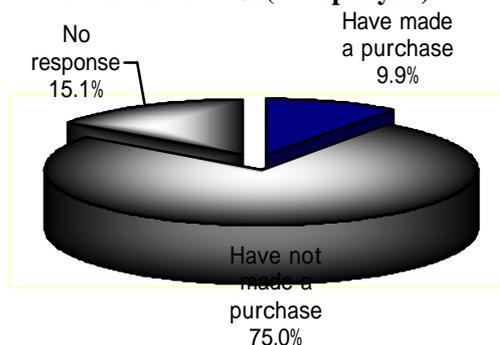
Purchase of For-Pay Content by Internet Users who Access the Internet from Cell Phones (in the past year)

No response 12.3%
Have not made a purchase 50.4%
Have made a purchase 37.3%
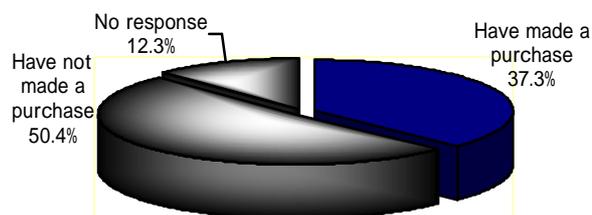
Breakdown of Content Purchased (multiple responses possible) and Purchase Amounts (total in the past year) by Users who Access the Internet from PCs

Content	(%)
Software	30.0
Music	22.7
Videos	20.7
News and weather information	17.4
Games	16.5
Screen savers	11.9
For-pay e-mail magazines	5.1
Electronic books	4.8
Other	1.3

No response 22.2%
\500 or less 15.8%
\1,000 or less 12.6%
\2,000 or less 10.7%
\5,000 or less 18.3%
\10,000 or less 9.9%
More than \10,000 10.4%
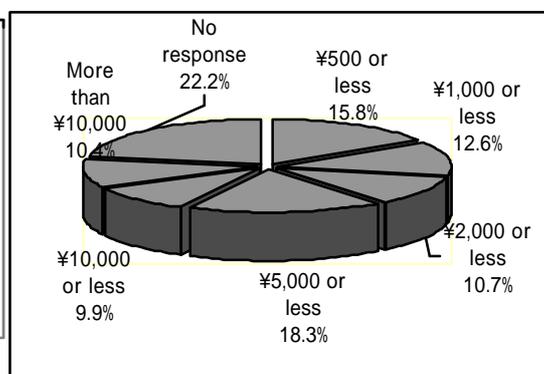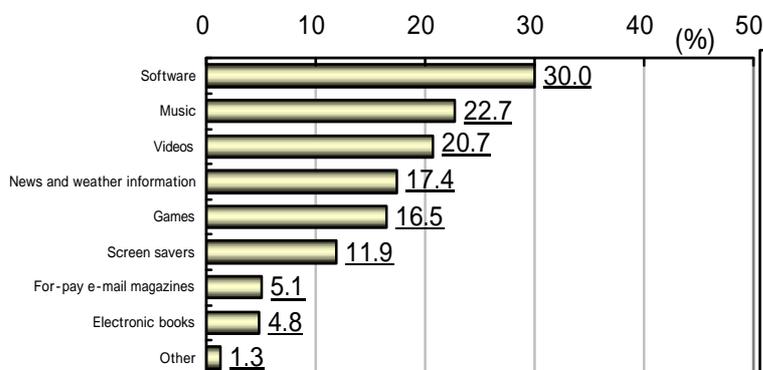
Breakdown of For-Pay Content Purchased (multiple responses possible) and Purchase Amounts (total in the past year) by Users who Access the Internet from Cell Phones

Content	(%)
Games	81.2
Text messaging	50.8
Software	22.6
Electronic books	18.5
Videos	16.7
Music	8.3
News and weather information	3.2
Wall paper	2.0
For-pay e-mail magazines	0.7
Other	4.0

More than \10,000 3.3%
No response 8.8%
\10,000 or less 6.0%
\500 or less 32.6%
\5,000 or less 13.3%
\2,000 or less 14.4%
\1,000 or less 21.6%
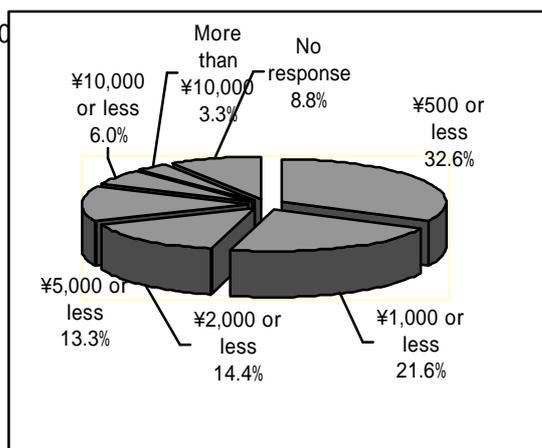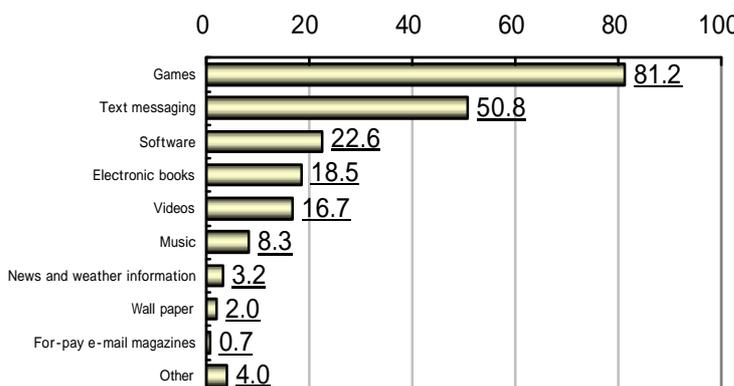
4. Concerns, Areas of Dissatisfaction, and Harm Incurred by Individuals

**Reasons why Individuals Do Not Use Online Shopping**

The most common reason why individuals do not use online shopping is that they "want to see the products before purchasing" at 31.7% followed by "no need or interest" at 28.1%.

Reasons for Not Using Online Shopping by Internet Users (multiple responses possible)

Reason	%
I want to see the products before purchasing	31.7
No need or interest	28.1
Concerns about protecting privacy	21.6
Concerns about disclosing credit card information	20.9
Concerns about receiving and returning products	18.9
Purchase procedures are bothersome	6.8
No products or services I want are available	5.9
Other	4.7
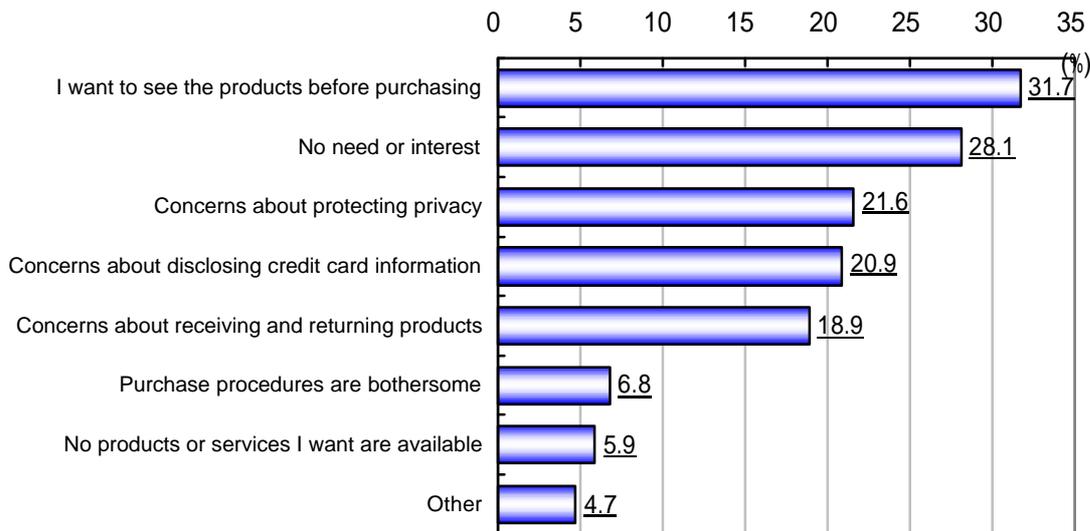
Among users who access the Internet from cell phones, 57.8% have incurred some type of harm such as nuisance e-mail or viruses. The most common type of harm is nuisance e-mail at 58.0%.

Users who have Incurred Harm from Internet Access from a Cell Phone and Types of Harm Incurred (in the past year) (multiple responses possible)

Have incurred harm 57.8%
No response 17.9%
Have not incurred harm 24.3%

| Type of Harm	%
Nuisance e-mail	58.0
Unauthorized access	1.4
Discovery of or infection by virus	1.1
Unauthorized use or disclosure of personal information	0.6
Slander on the Web (BBS, etc.)	0.1
Other (copyright infringement, etc.)	0.0

15
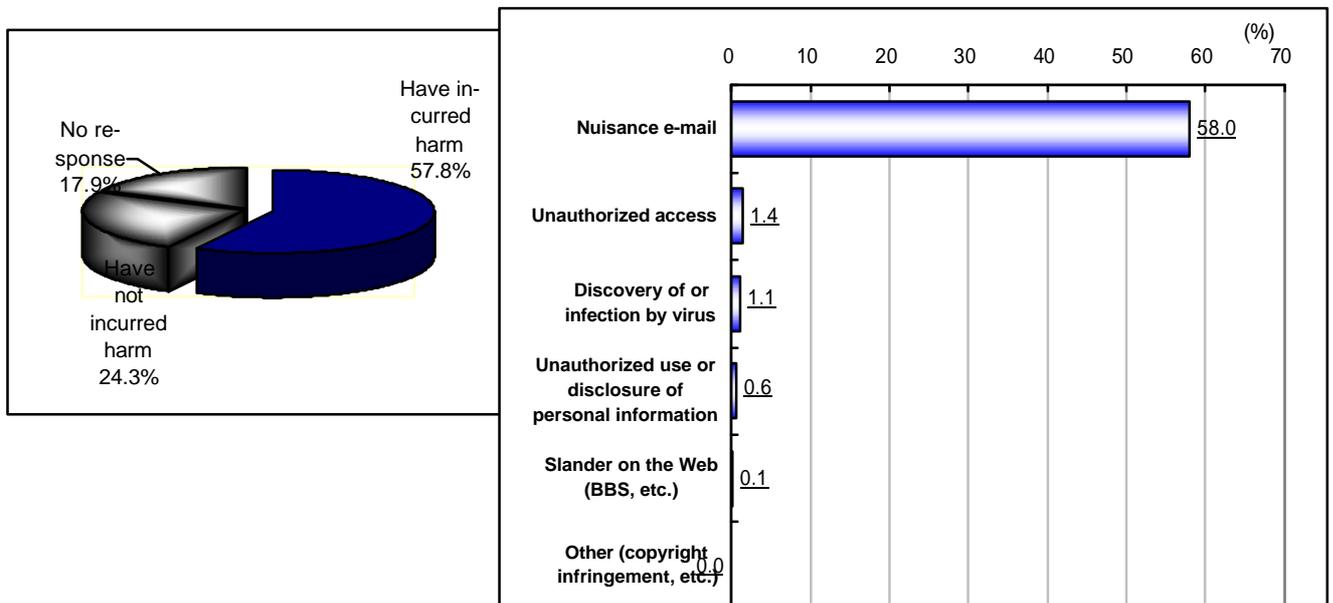
## 5. Use of Information and Communications Devices by Individuals

Use of Information and Telecommunications Devices by Individuals Broken Down by Age

Use of cell phones and PCs increased in all age groups from last year. The digital divide, however, is still present.

(1) Use of Cell Phones by Individuals

(%)

Legend: ☐ End of 2001 ■ End of 2002

Age group	End of 2001	End of 2002
Total	41.9	55.7
6 - 12 year olds	5.9	13.2
13 - 19 year olds	49.2	68.6
20 - 29 year olds	71.8	87.4
30 - 39 year olds	62.8	81.2
40 - 49 year olds	54.9	74.6
50 - 59 year olds	37.9	53.1
60 - 64 year olds	25.0	39.2
65 - 69 year olds	17.0	25.9
70 - 79 year olds	10.6	12.1
80+ year olds	5.7	1.3
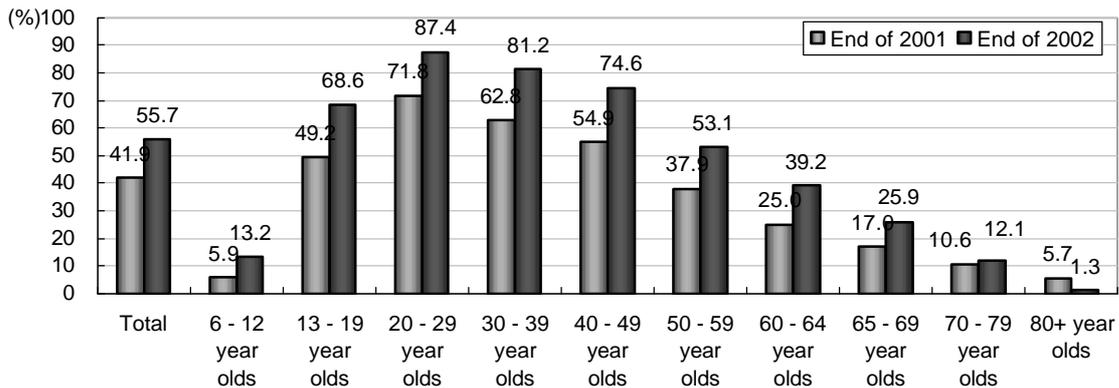
(2) Use of PHS by Individuals

(%)

Legend: ☐ End of 2001 ■ End of 2002

Age group	End of 2001	End of 2002
Total	3.3	3.4
6 - 12 year olds	1.4	1.8
13 - 19 year olds	2.6	2.4
20 - 29 year olds	4.1	3.4
30 - 39 year olds	6.4	6.5
40 - 49 year olds	4.8	5.2
50 - 59 year olds	3.1	3.4
60 - 64 year olds	1.6	2.3
65 - 69 year olds	0.6	1.8
70 - 79 year olds	1.6	0.9
80+ year olds	0.2	0.5
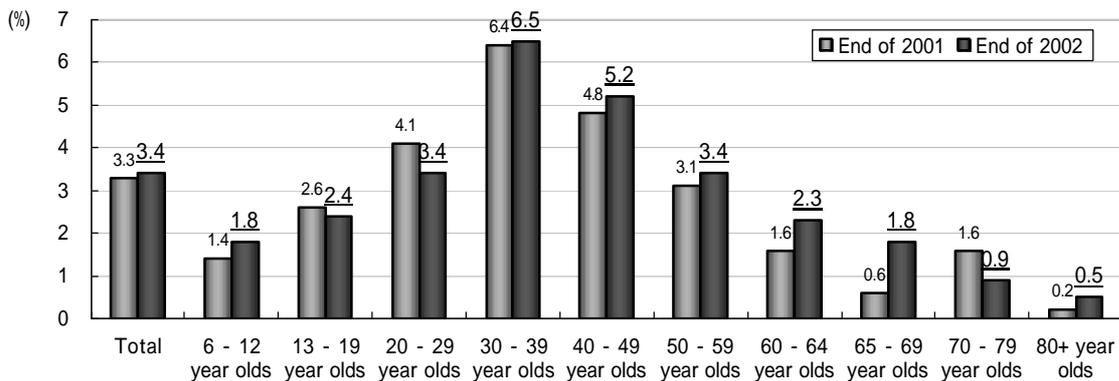
(3) Use of PCs by Individuals

(%)

Legend: ☐ End of 2001 ■ End of 2002

Age group	End of 2001	End of 2002
Total	34.4	41.8
6 - 12 year olds	32.3	48.2
13 - 19 year olds	43.1	58.2
20 - 29 year olds	46.5	61.4
30 - 39 year olds	51.7	58.8
40 - 49 year olds	47.1	53.0
50 - 59 year olds	29.9	34.5
60 - 64 year olds	18.5	23.1
65 - 69 year olds	13.4	13.5
70 - 79 year olds	5.8	5.6
80+ year olds	3.5	0.7

16
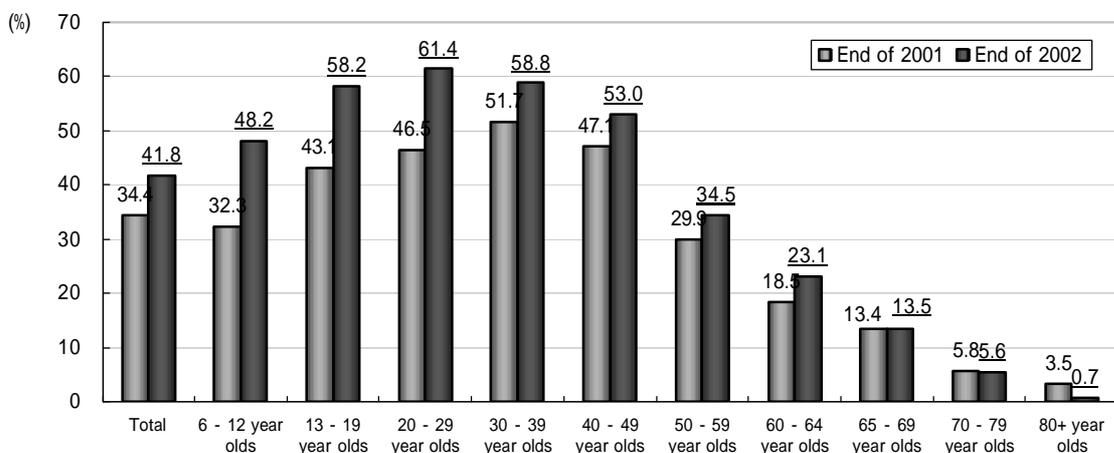
Use of Cell phones and PHS by Individuals (percentage of Internet use from cell phones and PHS)

The rate of cell phone and PHS use is 59.1%. Of these users, 49.6% have Internet-compatible devices. In the 13 to 49 year old age groups, use of Internet-compatible devices exceeds use of non-Internet compatible devices, but in the 50 year old and older age groups, the use of non-Internet compatible devices is higher.
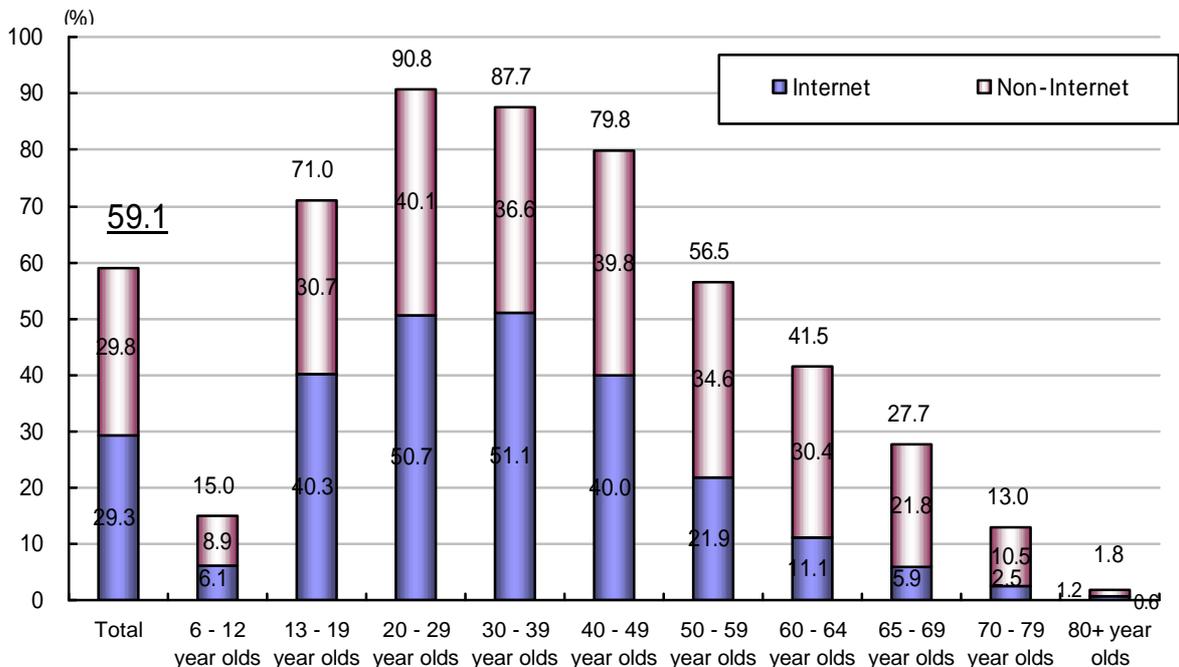
6. Ownership of Information and Communications Devices and Use of Broadcasting Services by Households

Use of Household LANs

Among households with two or more PCs (25.7% of all households), 35.5% use a household LAN.
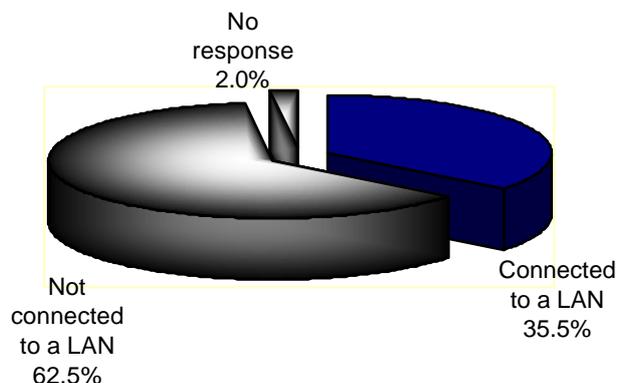
Ownership of Information and Communications Devices by Households

Ownership of cell phones by households increased by 10.5 points from the previous year to 86.1%.

Of those households with cell phones, 47.7% have Internet-compatible phones, an increase of 3.1

points. Also, PC ownership increased by 13.7 points from the previous year to 71.7%. Thus, the use

of information technology and devices by households is increasing steadily.

The rate of ownership of household electronic devices that can connect to the Internet is 3.2%.
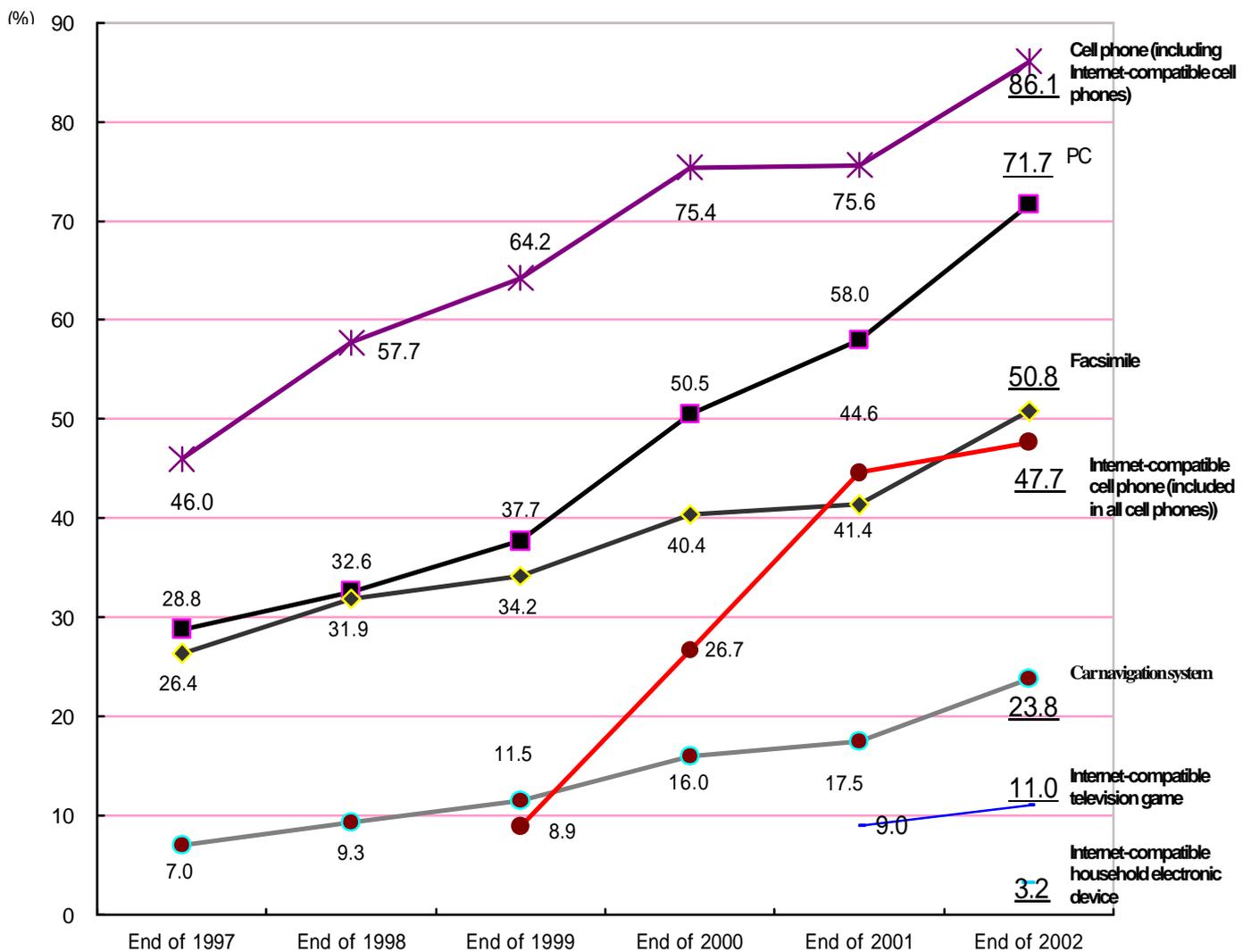

Note: Internet-compatible cell phones have been included in the survey since 1999, Internet-compatible televisions games since 2001, and Internet-compatible household electronic devices since 2002.

(%)

| | 0 | 10 | 20 | 30 | 40 | 50 | 60 |

Cable or satellite broadcasting

End of 1998	43.3
End of 1999	44.8
End of 2000	47.8
End of 2001	52.1
End of 2002	56.0

Satellite broadcasting (NHK BS broadcasting)

End of 1998	36.4
End of 1999	37.0
End of 2000	36.8
End of 2001	40.8
End of 2002	43.3

Satellite broadcasting (private BS and CS broadcasting)

End of 1998	8.8
End of 1999	9.4
End of 2000	10.9
End of 2001	17.8
End of 2002	18.5

Cable television

End of 1998	14.1
End of 1999	14.1
End of 2000	20.8
End of 2001	19.5
End of 2002	19.3
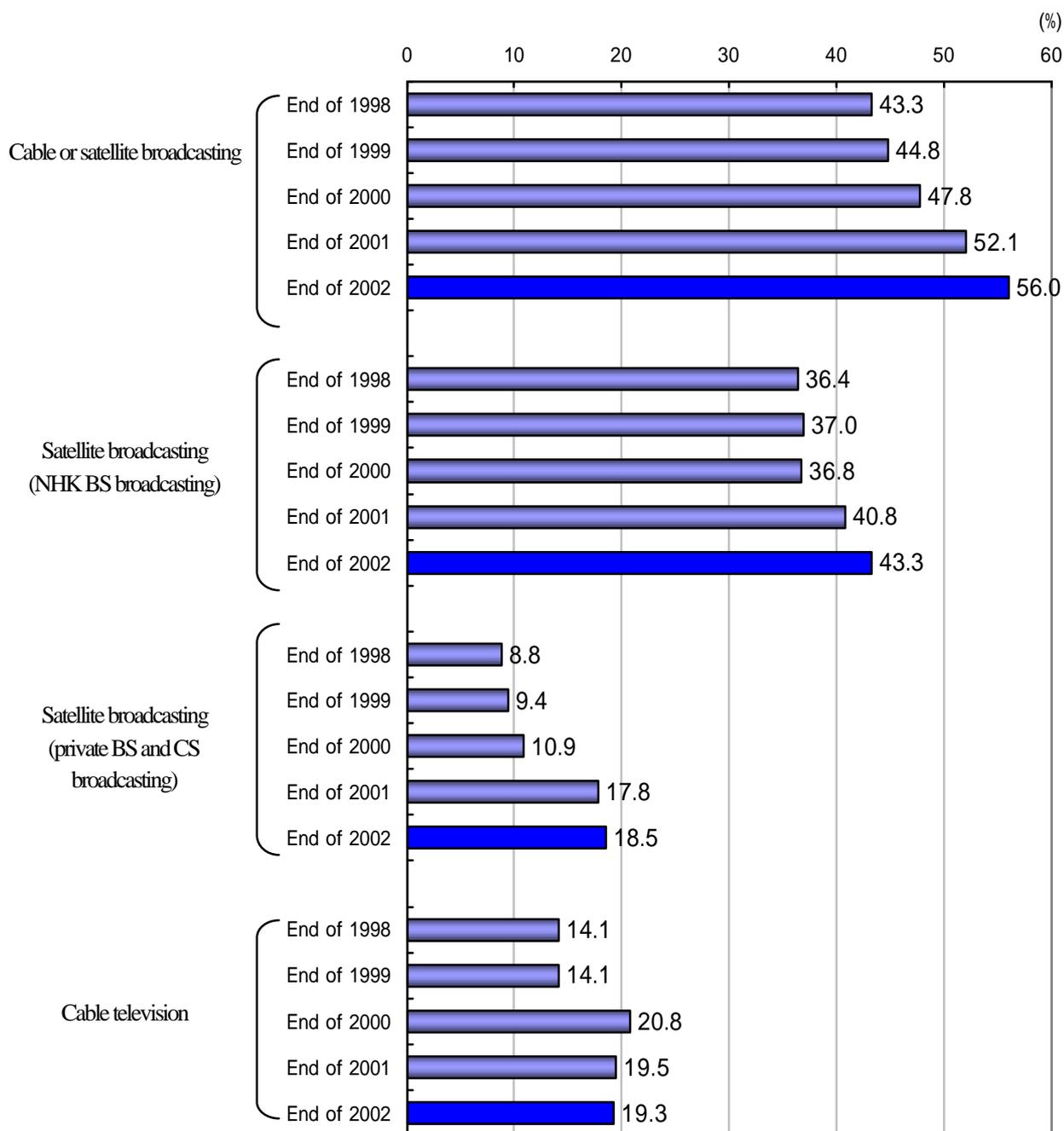
# Other Survey Results
Part 2: Enterprises

1 Internet Usage by Enterprises

Internet Usage by Enterprises

Internet use is increasing among enterprises in all categories of number of employees.

**The differences among enterprises with different numbers of employees is decreasing every year.**

Internet Usage by Enterprises (by number of employees)

	End of 1998	End of 1999	End of 2000	End of 2001	End of 2002
Overall	63.8	78.3	89.3	94.5	96.1
100-299 employees	57.6	74.4	86.9	93.2	95.1
300-499 employees	74.8	86.0	94.0	97.6	97.8
500-999 employees	78.6	87.8	95.9	96.6	98.2
1000-1999 employees	89.8	92.3	97.2	99.1	100.0
2000 or more employees	92.3	96.0	100.0	99.4	100.0
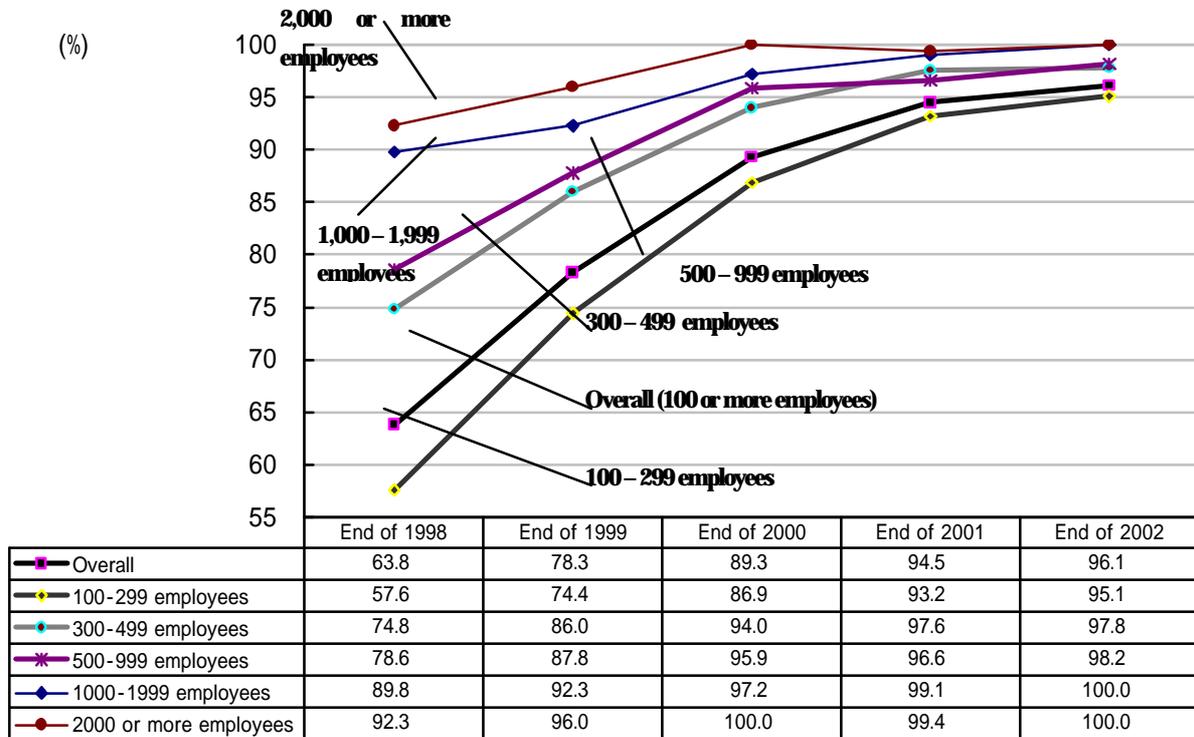
Note: The Internet usage rate among enterprises with 300 or more employees was 98.4% at the end of 2002.

Percentage of Enterprises with a Web Site

More than 80% of enterprises have a Web site. By industry, the highest percentage is in the finance and insurance sector at 91.7%.
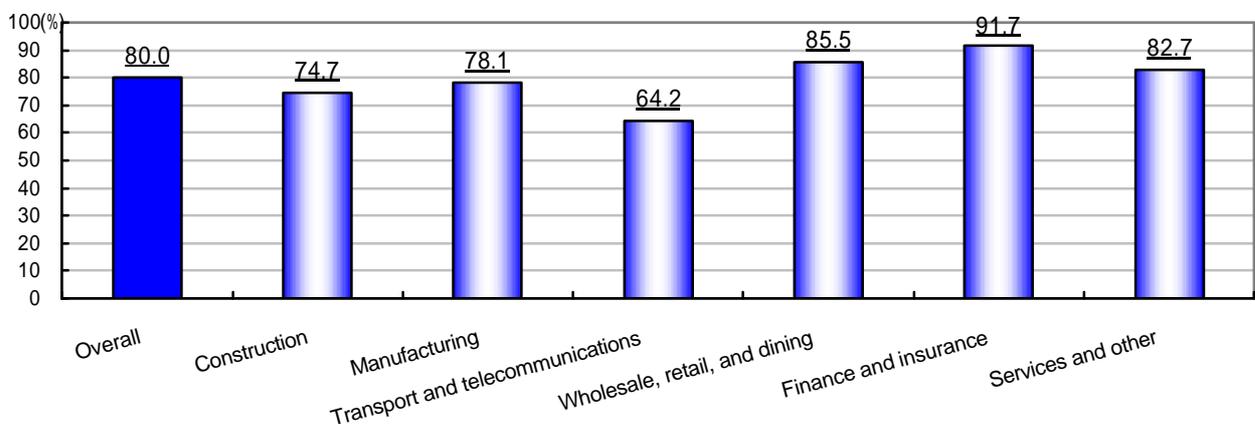
Use of Electronic Commerce by Enterprises

The percentage of enterprises that conduct business-to-business (B2B) electronic commerce is 26.7%, while 13.0% of enterprises engage in business-to-consumer (B2C) electronic commerce.

By industry, the "wholesale, retail, and dining" sector has the highest rate of B2B electronic commerce at 34.1%, while the "finance and insurance" sector has the highest rate of B2C electronic commerce at 30.5%.

Use of Electronic Commerce by Enterprises (multiple responses possible)
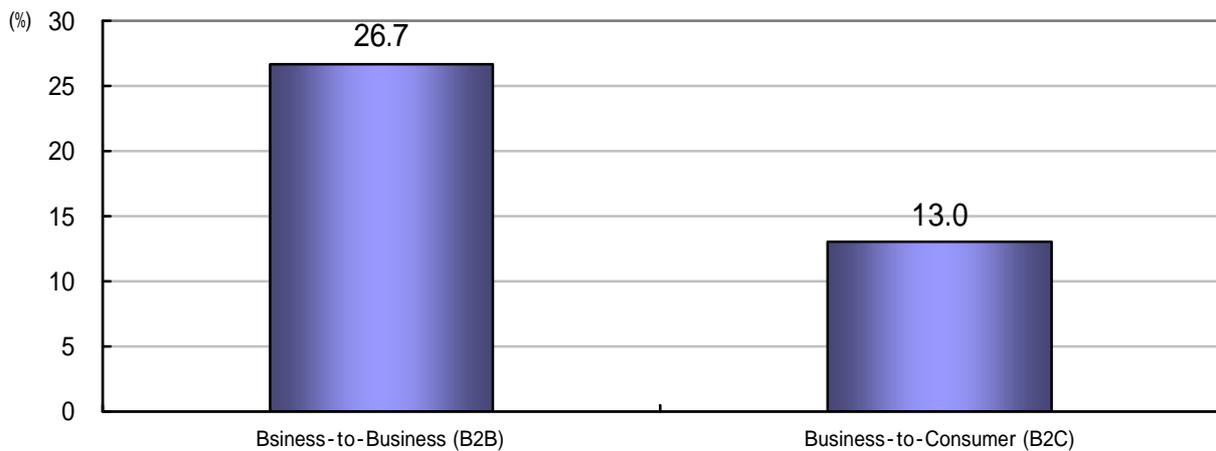
Use of Electronic Commerce Broken Down by Industry (multiple responses possible)
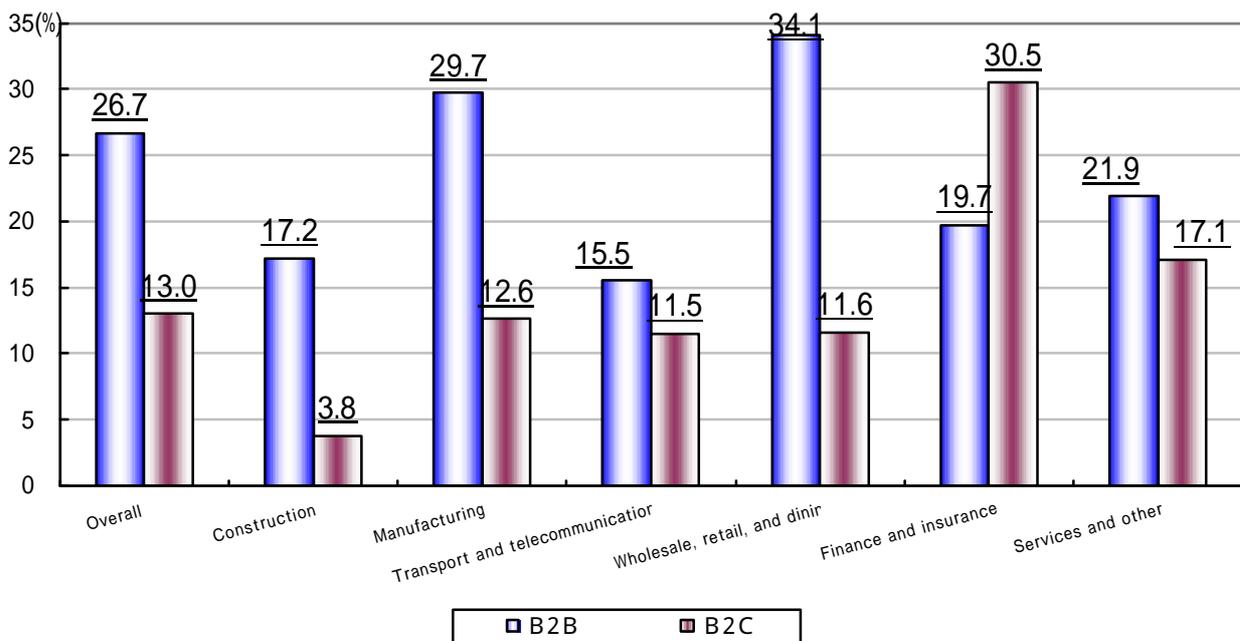
> **Introduction of Telecommuting by Enterprises**
>
> **Enterprises that have introduced telecommuting was up 0.7 points from the previous year to 8.4%.**
>
> **The most common purpose of introducing telecommuting was "to increase efficiency (productivity) of standardized work" at 60.4% followed by "to reduce employee commuting times" at 46.7%.**
>
> **Of the enterprises that have introduced telecommuting, 95.8% responded that "it has produced effects."**

## Enterprises that have Introduced Telecommuting
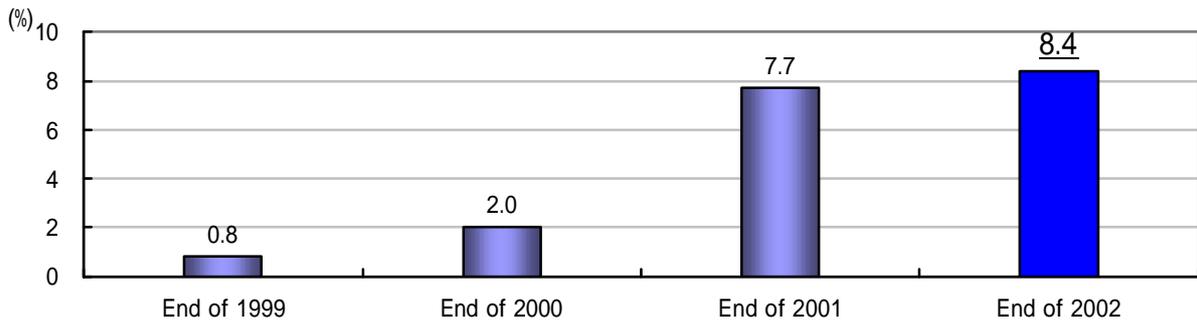
Note: Telecommuting refers to a form of working whereby communications networks are used to create an environment at a location outside the office that allows employees to work as if they were in the office. Telecommuting includes work at home, mobile work (e.g., working at various locations while conducting marketing), and work in satellite offices (work sites at locations other than the company's offices).

Objectives in Introducing Telecommuting (multiple responses possible)
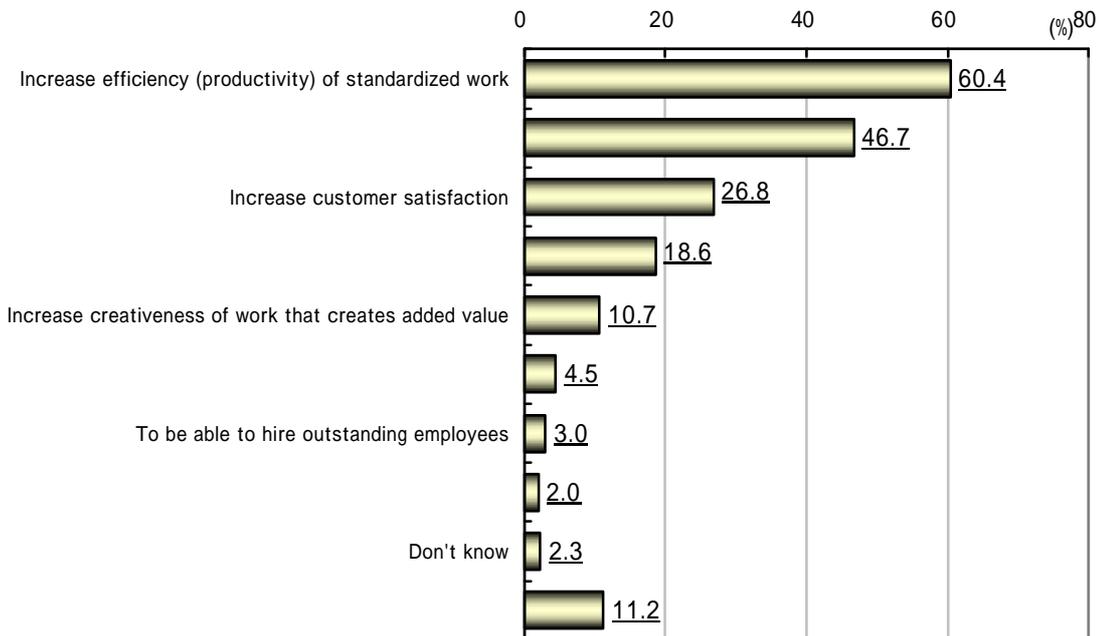
## Effects of Introducing Telecommuting

22
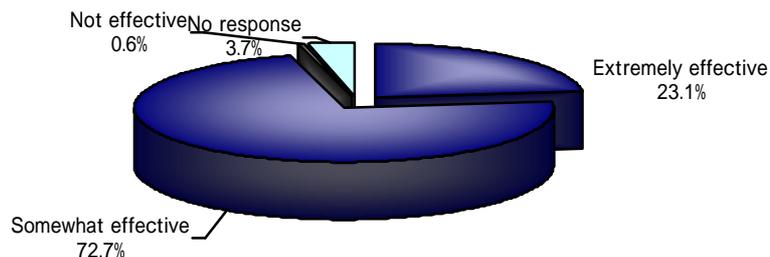
2. IT Investment By Enterprises

IT Investment by Enterprises

In the past year, 76.6% of enterprises made some IT investments such as purchasing PCs. The most common purpose of IT investment was to "increase efficiency and speed of work" at 87.4%.

IT Investment by Enterprises (past year)

IT investments not made
22.8%

No response
0.7%

IT investments made
76.6%
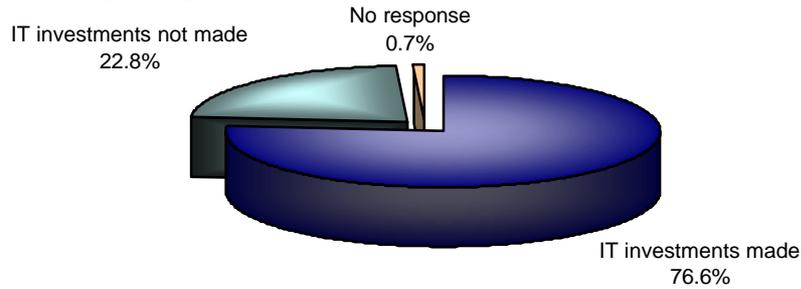
Purposes of IT Investment by Enterprises (multiple responses possible)

	(%)
Increase efficiency and speed of work	87.4
Enhance marketing and sales capabilities	33.7
Streamline and increase efficiency of organizations	19.1
Reduce management costs such as personnel expenses	18.3
Enhance product and service development abilities	10.9
Reduce procurement and inventory costs	9.8
To match other companies	4.2
Other	5.1
No clear purpose	1.6
Don't know	0.1

23
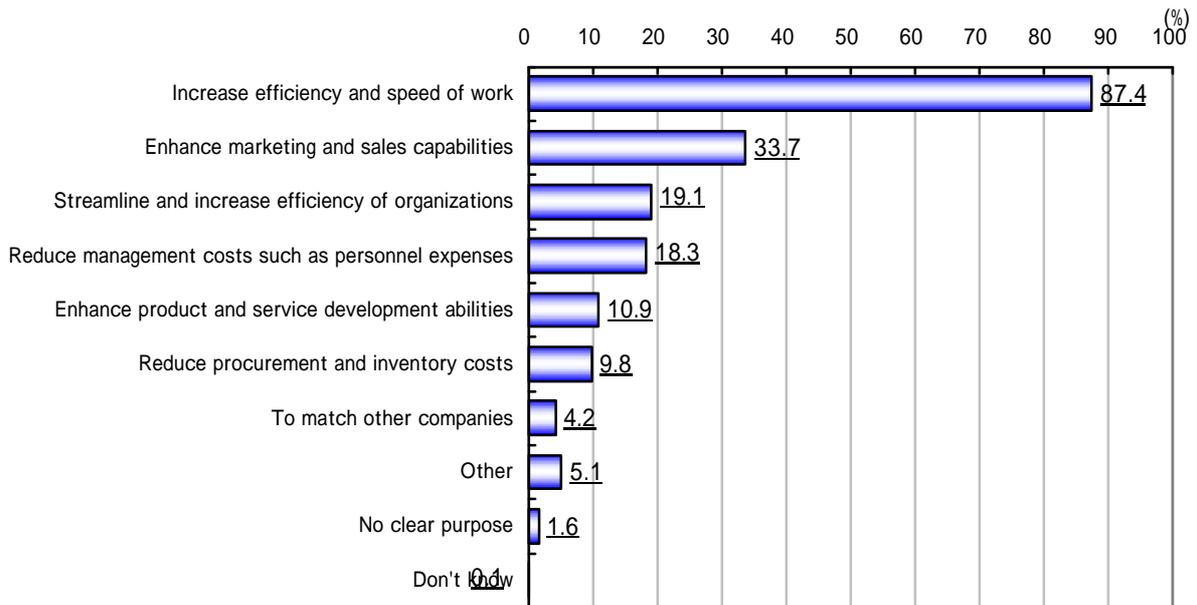
Effects of IT Investment by Enterprises

Of companies that invested in IT, 72.3% responded that it had an effect on operations.

Among the effects, the most common was "increased efficiency and speed of work" at 82.0%, followed by "advanced sharing of information and expertise" at 41.3%.

Effects of IT Investment on Operations

Don't know
24.2%

No response
0.3%

Negative effects
1.2%

No effect
2.0%

Positive effects
72.3%
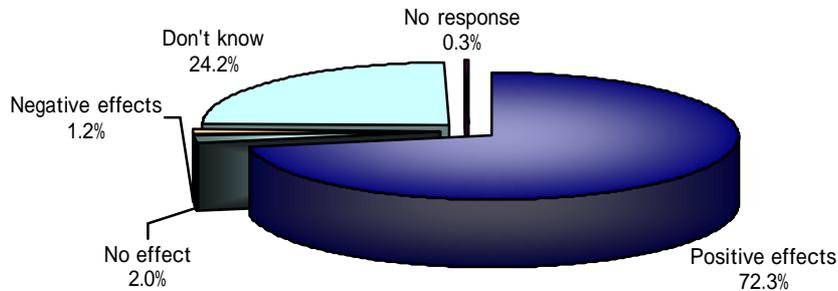
Details of Effects of IT Investment (multiple responses possible)

(%)

Effect	%
Increased efficiency and speed of work	82.0
Advanced sharing of management information and expertise	41.3
Higher customer satisfaction	18.4
Lower management expenses	17.9
Reduced order taking and placement times and payment times	13.9
Improved corporate image and recognition	13.1
Streamline and increase efficiency of organizations	12.8
Optimized inventories (lower inventory costs)	6.2
Higher sales revenues	5.8
Reduced materials and components procurement costs	3.5
Entry into new business areas	1.9
Other	3.8
Specific effects unclear	1.4

3. Installation of Communications Networks by Enterprises

Installation of Intra-Company Communications Networks (LANS, etc.) by Enterprises

Enterprises that have installed intra-company communications networks increased by 5.1 points from the previous year to 90.6%.
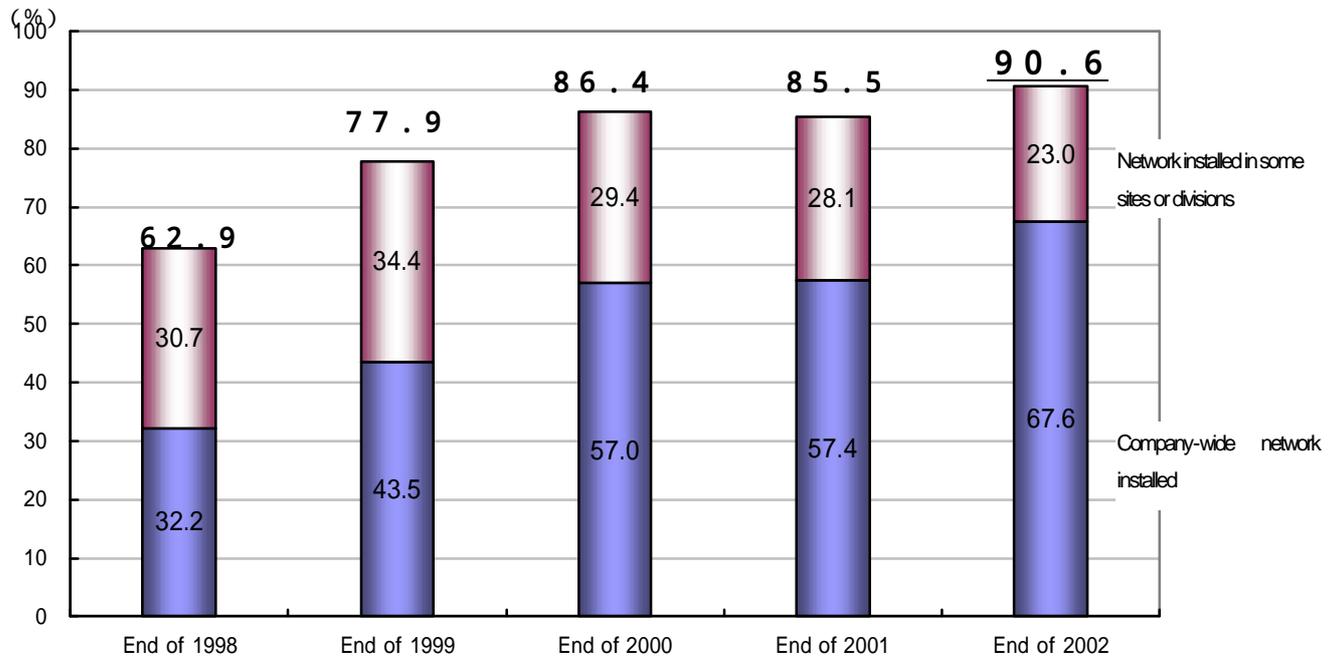
Installation of Inter-Company Networks (WANs, etc.) by Enterprises

Enterprises that have installed inter-company communications networks increased by 13.9 points from the previous year to surpass 50% and reach 54.4%.
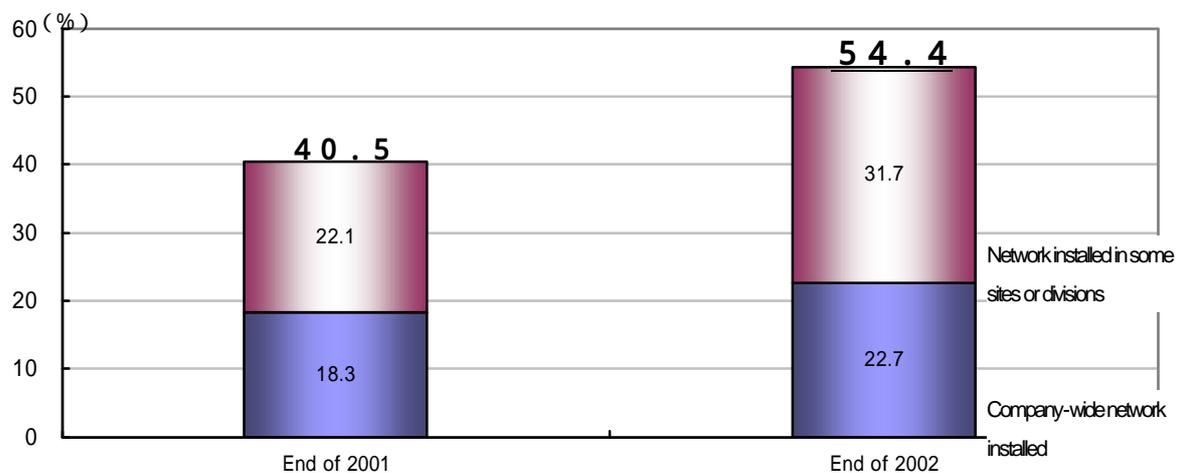
**Percentage of Companies that Allow External Connections to Corporate Communications Networks (Intra-Company and Inter-Company Networks)**

The percentage of companies that "allow external connections to corporate communications networks" from PCs, cell phones, and mobile terminals increased 2.5 points to 45.3%.
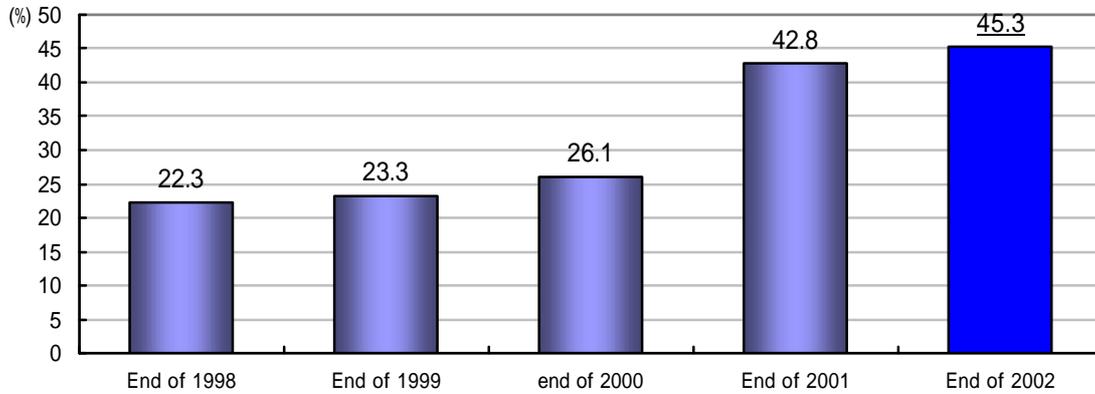
Methods of Installing Corporate Communications Networks

A majority of enterprises—57.2%-outsource "all" or "part" of the work of installing communications networks.

All work outsourced
17.5%

No response
4.3%

All work done in-house
38.5%

Work done in-house with some work outsourced
39.7%
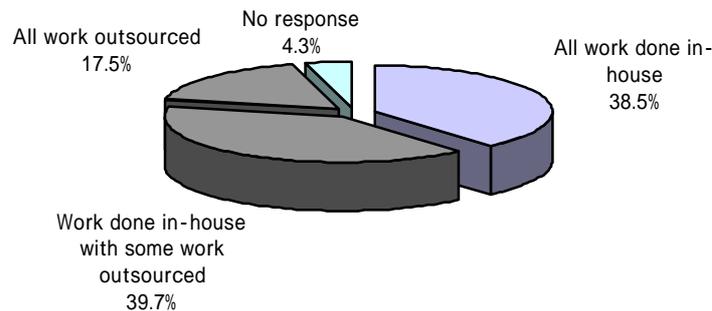
Installation of Terminals for Connecting to the Internet and Corporate Communications Networks by Enterprises

The most common responses was "one or more terminals per person" at 32.6%.

1 terminal per 5 or more persons
23.7%

None installed
1.3%

No response
0.4%

1 or more terminals per person
32.6%

1 terminal per four persons
5.3%

1 terminal per three persons
13.0%

1 terminal per two persons
23.7%

26
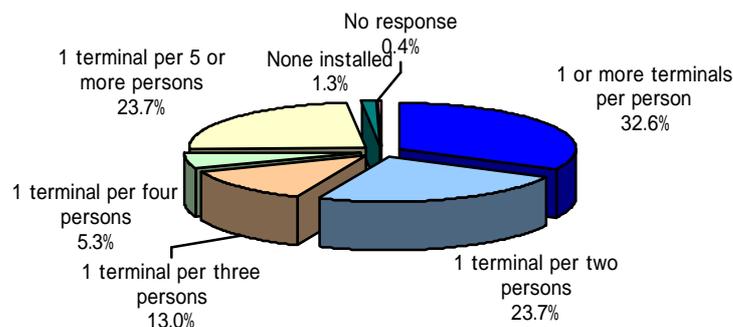
4. IT Organizations within Enterprises

Appointment of Chief Information Officer (CIO)*

A "full-time CIO" has been appointed by 3.2% of enterprises, while 22.0% of enterprises have a "dual-function" CIO.
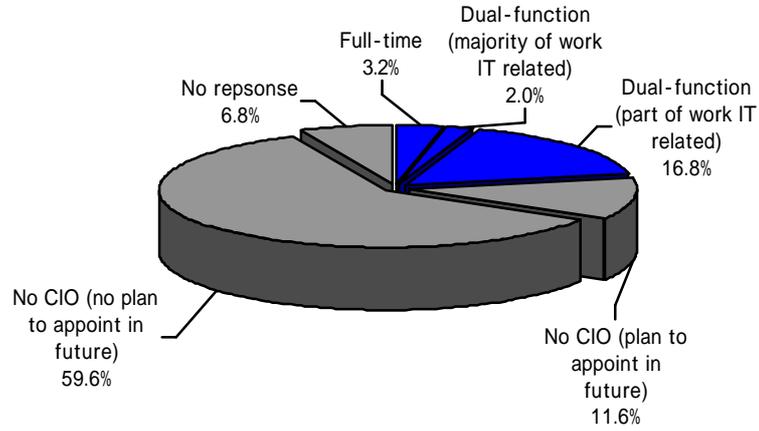
Note: A Chief Information Officer is an officer who coordinates and oversees management strategies and information and communications strategies.

IT Training For Employees in Enterprises

The most common responses is that "IT training is not conducted" at 42.6%.

Among enterprises that conduct IT training, many have "external" or "internal" IT-related training programs.

IT Training For Employees in Enterprises (multiple responses possible)
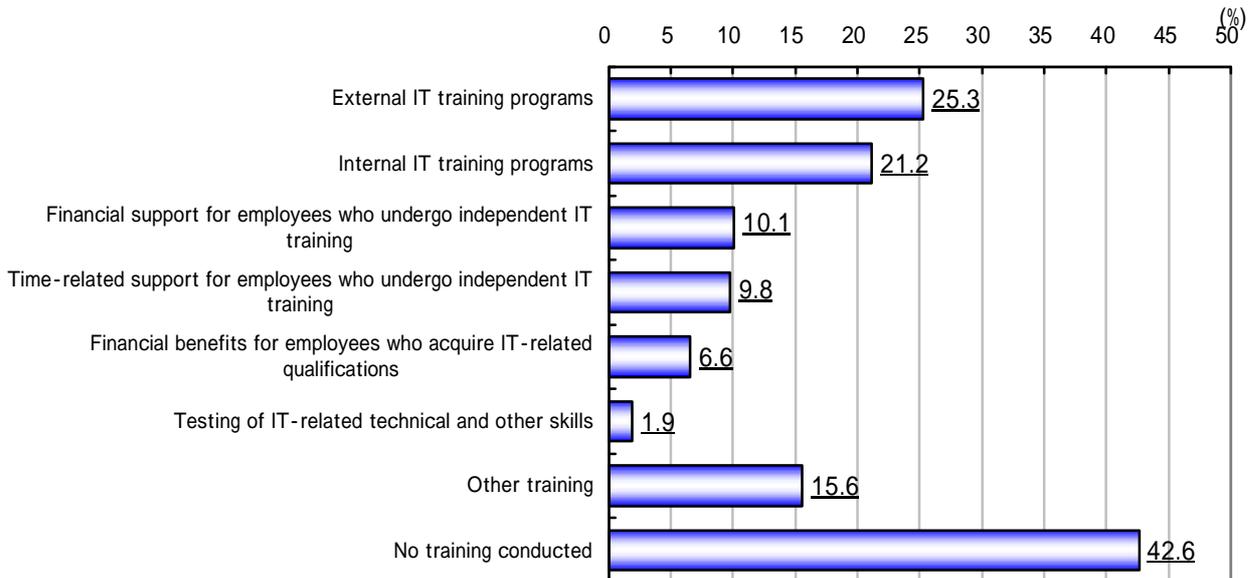
5. Measures Taken by Enterprises to Protect Personal Information

Measures Taken by Enterprises to Protect Personal Information

The most common response was "no measures taken" at 40.5%.

The most common type of measure is "thorough in-company training" at 23.9% followed by

"narrowing the scope of necessary personal information at 15.7%.

Breakdown of Measures Taken to Protect Personal Information (multiple responses possible)

Measure	Percentage (%)
Thorough in-company training	23.9
Narrowing the scope of necessary personal information	15.7
Reconstruction of information systems and structures	13.4
Appointment of a person responsible for protecting personal information	9.8
Adoption of a privacy policy	9.2
Strict conditions for selection of outsourcers (e.g., acquisition of use of a privacy mark)	2.9
Introduction of a privacy mark system	2.2
Other	5.0
No measures taken	40.5
Don't know	7.0

6. Problems Concerning Use of Corporate Information and Communications Networks

Problems Concerning the Use or that Interfere with the Use of Corporate Information and Communications Networks

The most common response was "implementing security measures is difficult" at 69.7% followed by "concerns about computer viruses" at 63.6%. Thus, security-related issues are the highest ranking problems.

Problems that Interfere with the Use of Information and Communications Networks (corporate communications networks, the Internet, etc.) (multiple responses possible)

Category	%
Difficulty implementing security measures	69.7
Concerns about computer viruses	63.6
Lack of operational and management personnel	42.0
High operating and management costs	37.2
Long recovery times after network failures	31.9
Difficuly measuring quantitatively the effects of network installation	31.7
High communications costs	24.0
Slow connection speeds	19.6
Difficulty obtaining benefits from network installation	15.8
Concerns about protecting intellectual property rights	9.0
Concerns about the reliability of electronic payment methods	7.7
Concerns about the reliability of certification technologies	5.4
Other	1.3
No specific problems	2.7

Problems Concerning the Use of Electronic Commerce by Enterprises

The most common response was "difficulty implementing security measures" at 43.2% followed by

**"specialized knowledge is necessary for system installation" at 38.2%.**

Problems Concerning the Use of Electronic Commerce Reported by Enterprises Engaged in Electronic Commerce (multiple responses possible)

Category	Percentage (%)
Difficulty implementing security measures	43.2
Specialized knowledge is necessary for system installation	38.2
Forms and data formats differ among industries	34.2
High capital investment costs	28.6
Business partners lack adequate IT systems	24.8
Lack of statutory framework and regulations concerning e-comerce	20.6
Communications protocols differ among industries	17.2
High operating costs of information systems	16.4
E-commerce does not suit traditional business practices	15.0
No suitable payment methods available	12.3
High communications costs	8.2
Slow connection speeds	5.9
No need	3.8
Other	2.2
No specific problems	6.7

Reasons for Not Engaging in ElectronicCommerce by Enterprises

The most common response was "inadequate security measures" at 40.5% followed by "business partners lack adequate IT systems" at 33.5%. "No particular need" was reported by 17.7% of the respondents.

Reasons for Not Engaging in Electronic Commerce among Enterprises Currently Not Engaging in Electronic Commerce (multiple responses possible)

Difficulty implementing security measures	40.5
Business partners lack adequate IT systems	33.5
Specialized knowledge necessary for system installation	30.9
High capital investment costs	26.2
Forms and data formats differ among industries	25.5
Electronic commerce does not suit traditional business practices	24.9
Lack of statutory freamework and regulations concerning e-commerce	21.7
Lack of suitable payment methods	12.9
High operating costs of information systems	12.0
Communications protocols differ among industries	11.7
High communications costs	6.0
Slow connection speeds	4.9
No need	17.7
Other	2.9
No specific problems	2.0

(%)

Other Survey Results
# Part 3: Business Establishments

1. Internet Usage by Business Establishments

Internet Usage by Business Establishments

Internet usage is increasing among business establishments in all categories of number of employees.

The usage rates are highest among business establishments with higher numbers of employees.

Internet Usage by Business Enterprises according to Number of Employees
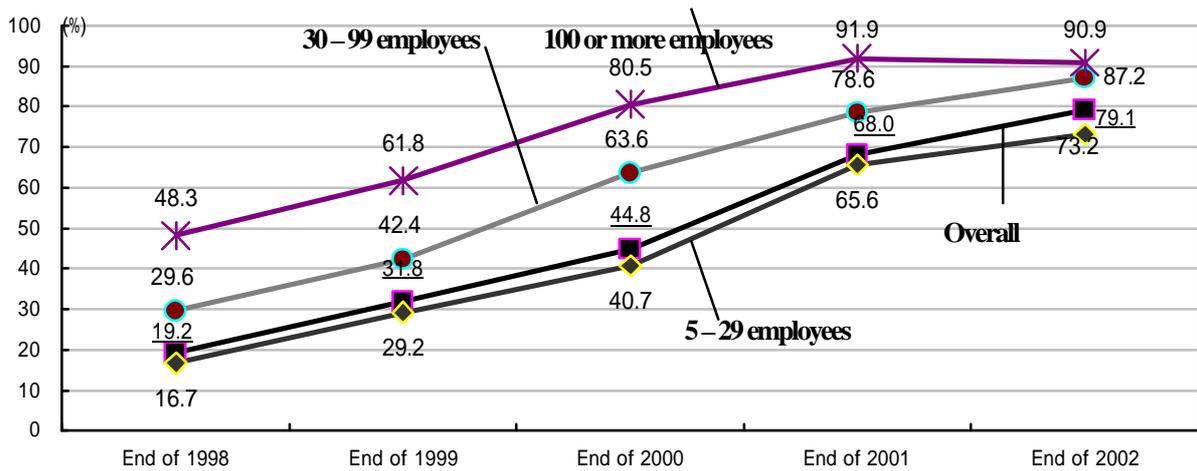
## Purposes of Internet Use by Business Establishments

The most common response was "search for and gather information" at 81.1% followed by "communications with people inside and outside the company" at 58.7%.

Purposes of Internet Use by Business Establishments (multiple responses possible)

Purpose	%
Search for and gather information	81.1
Communications with people inside and outside the company	58.7
Provide information and publicity using a Web site	46.1
Share information and exchange data with affiliated companies	30.1
Obtain software such as freeware	14.4
Procure components and materials from other companies	12.0
Electronic settlement including payment and bank transfers	10.0
Recruiting	9.2
Sell goods and services to consumers	7.1
Conduct market surveys	6.3
Sell goods and services to businesses	5.7
Provide users support for products	3.5
Conduct quizzes and contests	1.9
E-learning	1.6
Internet telephony	1.5

Ownership of Information and Communications Equipment by Business Establishments

PCs are owned by 93.2% of all business establishments and facsimiles by 96.5%—almost all business establishments.

(%)	Cell phone	PHS	Mobile information terminal	Pager	PC	Word processor	Facsimile
End of 2000	68.1	10.7	15.4	12.0	82.4	57.0	95.3
End of 2001	61.4	10.1	7.9	11.5	87.1	41.5	94.0
End of 2002	70.0	9.6	3.8	9.4	93.2	38.9	96.5
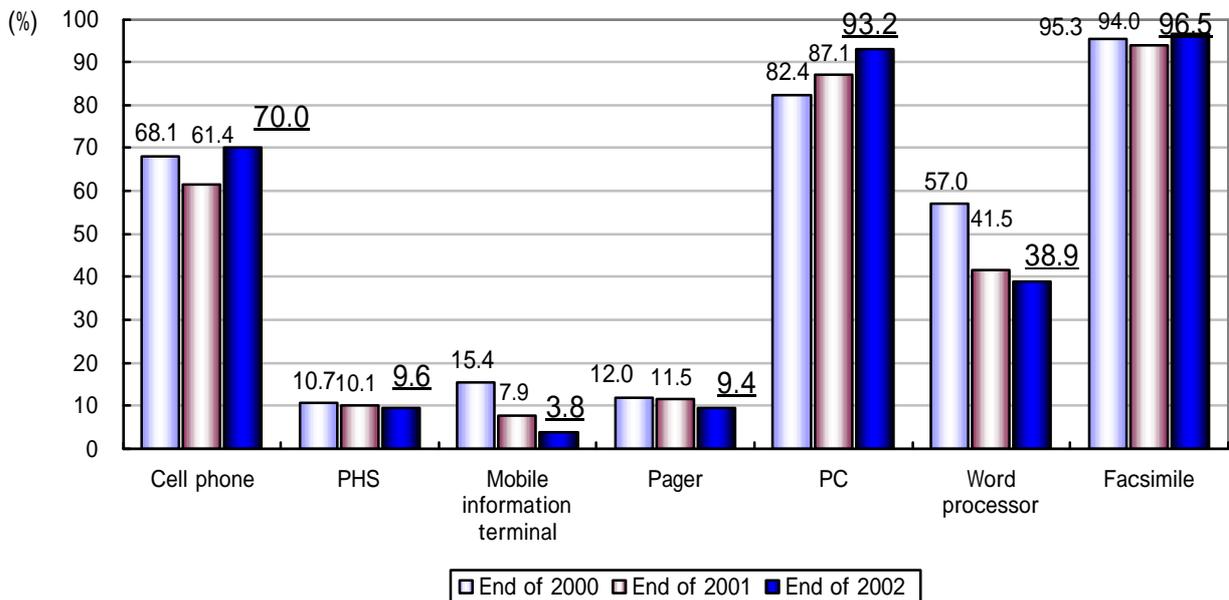
2. Harm Incurred from Use of Information and Telecommunications Networks and Countermeasures Implemented by Business Establishments

**Harm Incurred by Business Establishments from Use of Information and Communications Networks**

Harm was incurred by 32.7% of business establishments.

The most common type of harm was "discovery of or infection by computer virus" at 31.4%.

Harm Incurred by Business Establishments from Use of Information and Telecommunications Networks (in the past year) (multiple responses possible)

No response 19.2%

Harm incurred 32.7%

No harm incurred 48.1%

(%)

Discovery of or infection by computer virus	31.4
Harm from unauthorized access *1	1.8
Relay use for spam e-mail or unauthorized use of system	1.0
Slander on the Web (BBs, etc.)	0.6
DOS attack *2	0.2
Intentional or negligent disclosure of information	0.1
Tampering with Web	0.0
Other	0.8

Notes

*1. Unauthorized entry to a corporate or other computer system to cause problems to the system or engage in unauthorized use.

*2. An attack intended to interfere with the provision of services by, for example, sending large volume of e-mail to a mail server to cause the system to go down.