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**Title:** Japan's ICT Statistics: Its Collection and Dissemination



## Japan's ICT Statistics: Its Collection and Dissemination

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### I. Introduction

Statistical data that describe the social and economic conditions of a country are indispensable tools for effective policy planning, implementation and evaluation as well as for business planning and management.

There can be no effective policy without accurate data on the social and economic realities of a country.

With the advancement of information and communication technologies (ICT), information and telecommunication equipments such as computers and mobile phones have become more use-friendly and their prices have been down considerably. New networking technologies enabled to construct telecommunication networks such as the Internet. These two elements made the ordinary people to get accustomed to use computers and mobile phones for exchanging information and searching necessary data via telecommunication networks.

Thus, the daily lives of the ordinary people are changing and such changes eventually have forced our economies and societies to change. Under these circumstances, the Japanese government has been making every effort to cope with the statistical needs to grasp the realities of ICT related activities in Japan.

There are three kinds of methods to collect necessary data and compile statistics. One is by using administrative records and the second method is by conducting statistical surveys. The last method is making use of the data prepared by private organizations.

Data collecting activities based on these methods are outlined in the following.

### II. ICT statistics by the use of administrative records

In Japan, compiling ICT statistics by making use of administrative records is carried out by the regulating agency, the Ministry of Public Management, Home Affairs, Posts and Telecommunications.

The Ministry (the former Ministry of Posts and Telecommunications) is responsible for implementing the Radio

Law, the Wire Telecommunication Law, the Telecommunications Business Law, the NTT Law and related laws and regulations.

Under these laws and regulations, the business entities or the citizens should submit documents for certain administrative procedures such as getting approval as well as submit monthly reports to the Ministry concerning their business activities on a compulsory or a voluntary basis. These documents and reports are so-called administrative records. The Ministry compiles necessary statistics by making use of the information described in these documents and reports and disseminates them via its Website (<http://www.ijhotosusintokei.soumu.go.jp/english/index.html>) or publications. Because of such collection method, these statistical data do not include gender distinction, household characteristics or household/enterprise distinction.

Examples of such statistical data are as follows.

- × Number of telephone contract
- × Number of cell phone and PHS subscriber
- × Number of ISDN subscriber
- × Number of leased circuits
- × Number of Internet user
  - Number of DSL Service user
  - Number of FTTH Service user
  - Number of subscriber using Internet connection services that utilize the CATV network
  - Number of Internet service user via cell phone terminal
  - Number of Internet connection service user utilizing dial-up connections on telephone lines
  
- × National telephone traffic
- × International outgoing/incoming telephone traffic
  
- × Number of telecommunications carrier
- × Operating revenues of telecommunication carriers
- × Financial standing of NTT
  
- × Number of wire telecommunication facilities/equipments by region and industry
- × Number of cable broadcasting services facilities
- × Number of radio operator permits by qualification and region
- × Number of radio station
- × Coverage of fiber optic networks in Japan

### **III. ICT statistics by statistical survey method**

#### **1. Introduction**

As for the statistical survey method, Japan has adopted a de-centralized system for government statistical activities. Namely, each Ministry has its own units to carry out statistical surveys within its jurisdiction, while the Statistics Bureau of the Ministry of Public Management, Home Affairs, Posts and Telecommunications carries out basic multi-purpose statistical surveys such as the Population Census. As for large-scale statistical surveys, the Central Government is primarily responsible for implementing the surveys and does the work of survey planning. The field operation of surveys is entrusted to local governments based on the Local Autonomy Law and local governments are in charge of field survey, namely: employing survey enumerators, training the enumerators, supervising the enumerators, in some cases persuading reluctant respondents, data-checking and so on.

A government-wide coordinating organization has been established in the form of the Statistical Standards Department of the Statistics Bureau. The responsibilities of the Department include overall planning of government statistical system both at the central and local levels, establishing standard classification systems, scrutiny of the necessity, sample size and questions of surveys, avoiding duplication of surveys, reducing the reporting burdens, streamlining the works entrusted to local governments and so on.

In Japan, the Basic Law on Formation of an Advanced Information and Telecommunications Network Society (IT Basic Law) was implemented in January 2001, which obliges the government to work out a basic strategy to promote the formation of an advanced IT network society. The Law stipulates that the government shall compile statistics and other related information concerning an advanced IT network society and to publish them on the Internet as well as by using other appropriate means.

All the Ministries swiftly moved to collect necessary data through survey method by adding ICT-related questions to existing statistical surveys, or by conducting new ICT surveys.

#### **2. Outline of ICT statistical surveys and ICT related survey items**

In Japan, the government in the past five years has conducted at least forty-one statistical surveys containing questions related to ICT. The survey purpose, survey items, coverage, survey unit and other methods of these surveys vary and are different each other. Among forty-one surveys, twenty-six are surveys for enterprise/establishment, thirteen are those for household/individual and nine are those for other organizations such as government, university and school. (See Annex 1 List of main statistical surveys including ICT-related items)

The ICT related items included in enterprise/establishment surveys are divided into six groups as follows.

- a) Items concerning overall business activities of specific ICT related industries such as telecommunications businesses or information service businesses.

- b) Items on Producing ICT facilities/equipments
- c) Items on ICT related investment in plant and equipment
- d) Items concerning possession of ICT facilities/equipments
- d) Items on the use of ICT facilities/equipments
- e) Items concerning e-commerce
- f) Items on data/information processing in business

Also the ICT related items in household/individual surveys are classified into three groups.

- a) Items on the possession of ICT equipments and the use of personal computers (PCs) and the Internet,
- b) Items on purchasing telecommunication equipments such as PCs and mobile phones as well as telecommunication services such as telephone charges
- c) Items concerning how long, what purpose and where individuals use PCs or the Internet

### **3. Outline of main ICT statistical surveys**

Main statistical surveys containing ICT related items are introduced in this section.

#### **Establishment/Enterprise Survey**

##### **1) Survey of Telecommunication Industries**

##### **2)**

- × Annual survey of 2,300 sample enterprises covering large scale enterprises
- × Collecting data on business costs and revenues, number of employees, future business prospects and so on.
- × Business Investment data collected twice a year
- × Survey results released at <http://www.johotsusintokei.soumu.go.jp>.

##### **2) Communications Usage Trend Survey (Enterprise questionnaire)**

- × Annual survey of 3,000 sample enterprises with more than 100 regular employees.
- × Collecting data on establishing telecommunication network, the use of the Internet, security measures, telecommunications network costs and so on.
- × Survey results released at <http://www.johotsusintokei.soumu.go.jp>.

##### **3) Communications Usage Trend Survey (Establishment questionnaire)**

- × Annual survey of 5,600 sample establishments with more than 5 regular employees.
- × Excluding the establishments belong to “Communications” of the Japan’s Standard Industry Classification (JSIC).
- × Collecting data on possession of ICT facilities/equipments, the use of the Internet,

telecommunications service charges, and so on.

- × Survey results released at <http://www.johotsusintokei.soumu.go.jp>.

#### **4) Current Survey on Data Processing**

- × Annual survey of listed 9,500 enterprises/institutions using mainframe computers.
- × Collecting data on ICT work-cost and its prospect, ICT operators, possession of computers, PCs and ICT networks, operation of LAN and its business application, self-development of software, state of outsourcing, amount of sales and purchases of B to B e-commerce, amount of sales of B to C e-commerce and so on.
- × Survey results released at <http://www.meti.go.jp/statistics/index.html>

#### **5) Establishment and Enterprise Census**

- × Census of establishments and enterprises conducted twice in five years
- × Main survey purpose is to clarify the basic industrial structures of Japan as well as to provide the basic establishment/enterprise lists for sample surveys.
- × Covering all establishments and enterprises in Japan
- × 2001 Census included items concerning the use of e-commerce, its type (B to B/B to C), its contents (sending orders, receiving orders, delivery of goods and service).
- × Supplying detailed data by region, industry and size of establishment.
- × Survey results released at <http://www.stat.go.jp/data/jigyoku/index.htm>

#### **6) Census of Commerce**

- × Census of all establishments running wholesale and retail trade twice in five years
- × Main survey purpose is to clarify the actual condition of domestic wholesale and retail trade activities.
- × 2002 Census collected data on e-commerce including annual merchandise sales and purchases over electronic networks, the Internet, etc.

#### **7) Basic Survey of Business Structure and Activities**

- × Annual survey of all the enterprises with establishments running mining, manufacturing, wholesale and retail trade.
- × Main survey purpose is to obtain the basic business information needed for formulating the industrial policies.
- × 2001 survey collected data on the use of e-commerce, type of e-commerce (B to B, B to C and B to G) and kinds of economic activities performed over networks, outsourcing of data processing and so on.
- × Survey results released at <http://www.meti.go.jp/statistics/index.html>

## **Household/Individual Survey**

### **1) Communications Usage Trend Survey (Household questionnaire)**

- × Annual survey of 6,400 sample households
- × Collecting data on the possession of ICT equipments, the use of the Internet, charges paid for telecommunications and broadcasting services and so on.
- × The latest survey included items for individual household members' Internet usage
- × Survey results released at <http://www.johotsusintokey.soumu.go.jp>.

### **2) Survey of Household Economy**

- × Monthly survey of 30,000 sample households since October 2001
- × Collecting data on the purchases of expensive and infrequently purchased goods and services in principle
- × Special items are added to grasp how the households make use of the Internet: ownership of ICT equipments for the Internet, used telecommunication lines for the Internet, the use of e-commerce and so on.
- × Survey results released at <http://www.stat.go.jp/data/joukyou/index.htm>

### **3) Survey on Time Use and Leisure Activities**

- × Survey of 100,000 sample households and 200,000 sample household members conducted every five years
- × Main survey purpose is to clarify the distribution of time spent on daily activities as well as on the people's activities during spare time.
- × 2001 survey included new questions on the use of the Internet such as people's purpose and frequency of the Internet use and accessing place to the Internet. And it also contained a crucial question about the time spent for the Internet.
- × The prompt results released in September 2002
- × Survey results released at <http://www.stat.go.jp/data/shakai/index.htm>

## **4. Current survey results**

Some examples of the survey results are shown below.

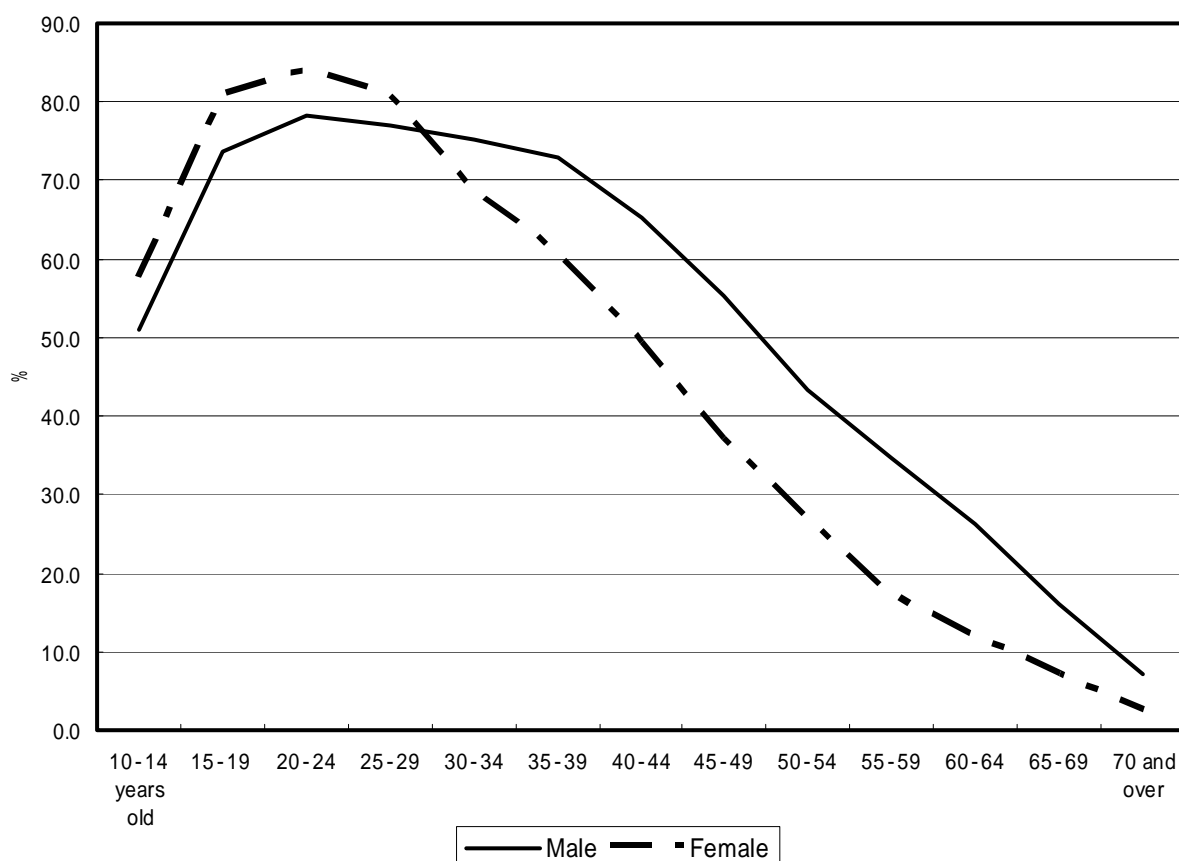
The Communications Usage Trend Survey conducted by the Ministry of Public Management, Home Affairs, Posts and Telecommunications is one of the surveys specialized in collecting data on ICT facilities, use of the Internet, and other items concerning ICT so that its latest results are attached as Annex 2 for your reference.

## **Internet penetration rates by sex and age-group**

**(2001 Survey on Time Use and Leisure Activities)**

The number of persons who accessed to the Internet from 20 October 2000 to 19 October 2001 was 52.448million and the ratio to total population of ten-year-old and over was 46.4%. The ratio for the male was 51.5% and that for the female was 41.5%. To look at this ratio by age-group, the ratios for younger generations were higher compared with those for older generations and female age-groups under thirties were very active for the use of the Internet.

**Graph 1 Internet penetration rates by sex and age-group**

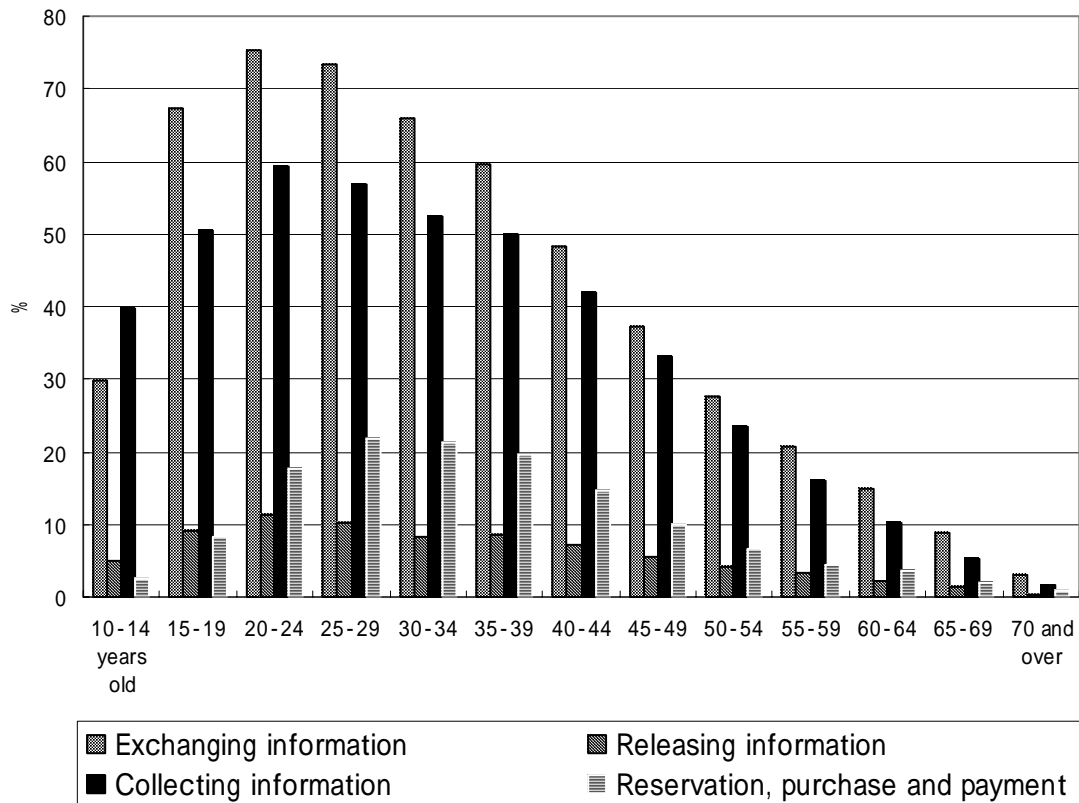


**Internet penetration rates by age-group and purpose**

**(2001 Survey on Time Use and Leisure Activities)**

The survey asked the respondents to select four purposes to use the Internet; these are “exchanging information”, “collecting information”, “releasing information (such as constructing private Websites)” and “reservation, purchase and payment”. Among these purposes, “exchanging information” is the most common choice for almost all age-groups while “releasing information” is the least selected item and “reservation, purchase and payment” was not frequently done.

**Graph 2 Internet penetration rates by age-group and purpose**



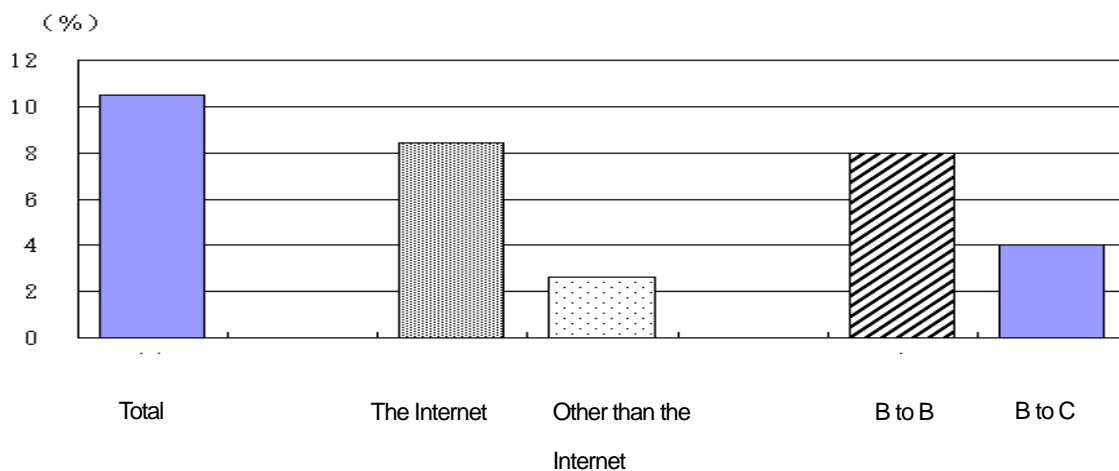
**E-commerce penetration rates ( 2001 Establishment and Enterprise Census )**

Among 1,617,535 incorporated enterprises existing on 1 October 2001, 10.5% of the incorporated enterprises have introduced e-commerce.

As for the networks for the e-commerce, the Internet is 8.4% and networks other than the Internet are 2.6%.

As for the trade partners, businesses are 8.0% and consumers are 4.0%.

**Graph 3 Introduction of e-commerce among incorporated enterprises**

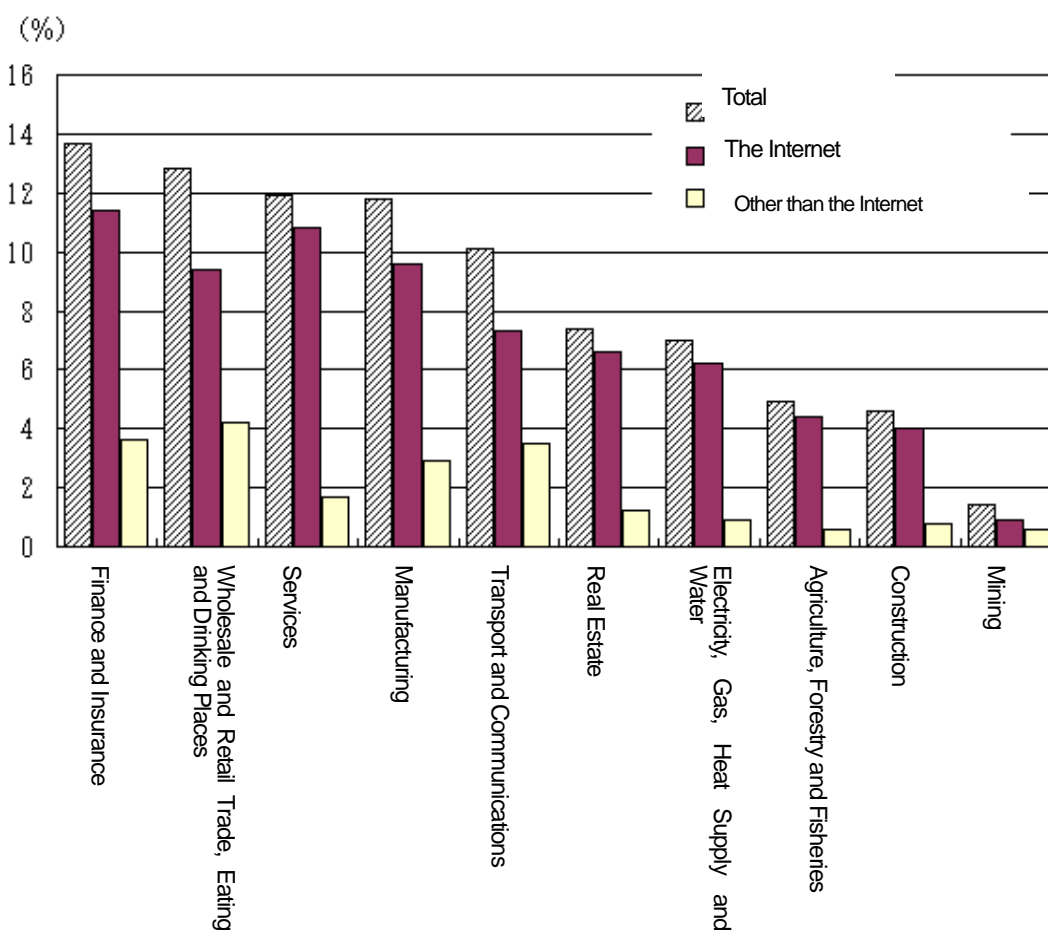


### E-commerce penetration rates by industry (2001 Establishment and Enterprise Census )

E-commerce penetration rate by divisions of industrial classification is the highest in "finance and insurance" (13.7%), the next in "wholesale and retail trade, eating and drinking places" (12.8%), and the third in "services" (11.9%).

When classified by network for the e-commerce, the highest industry using the Internet is "finance and insurance" (11.4%), the next is "services" (10.8%), and the third is "manufacturing" (9.6%).

**Graph 4 E-commerce penetration rates by division of industrial classification**



### ICT Statistics Compendium

To facilitate the use of ICT statistics, the Statistics Bureau of the Ministry of Public Management, Home Affairs and Posts and Telecommunications started in 2001 to compile a statistics compendium of major ICT statistics. The latest version of the Compendium, "IT INDICATORS IN JAPAN" has published recently. The Compendium is released at the Bureau's Website, <http://www.stat.go.jp/english/data/it/index.htm>.

#### **IV. ICT statistics by private organizations**

In Japan, there are a lot of associations whose members are enterprises in the telecommunication businesses. With the development of telecommunication industries, the activities of these organizations have been expanded widely. As one of the core activities, they compile statistics on telecommunication with the cooperation of their member enterprises and disseminate the statistics via their Websites or by publication. The examples of such organizations and their Websites are as follows.

The Telecommunications Carriers Association (TCA)

<http://www.tca.or.jp/index-e.html>

The Association of Radio Industries and Businesses (ARIB)

<http://www.arib.or.jp/english/index.html>

Communications and Information Network Association of Japan (CIAJ)

[http://www.ciaj.or.jp/contents\\_en/index\\_en.html](http://www.ciaj.or.jp/contents_en/index_en.html)

The Japan Electronics and Information Technology Industries Association (JEITA)

<http://www.jeita.or.jp/english/index.htm>

Japan Information Technology Services Industry Association (JISA)

<http://www.jisa.or.jp/en/index.html>

Japan Satellite Broadcasting Association

<http://www.eiseihoso.org/>

#### **V. Conclusion**

In Japan, the government has been making efforts to collect, prepare and disseminate ICT statistics via Website/publication recently. Because of current efforts of adding ICT related items to the existing surveys, we now have appropriate data concerning ICT or telecommunications from the number of telephone contract to the Internet penetration rates by age-group and purpose. In concluding, the future challenges are suggested to make Japan's ICT statistics more useful and valuable.

- 1) ICT related items should be included further in the surveys of various fields to grasp the changes brought about by the development of ICT. Especially, the possibility of including ICT related items in the Population Census should be examined, taking account of the people's degree of cooperation in statistical survey.
- 2) Clear role sharing should be made between monthly or annual sample surveys on ICT and periodical large-scale surveys such as the Establishment and Enterprise Census. It could be said that monthly or annual



## **Annex 1**

### **List of main statistical surveys including ICT-related items**

#### **Cabinet Office**

2001 Questionnaire of Corporate Activities

#### **Ministry of Public Management, Home Affairs, Posts and Telecommunications**

2001 Establishment and Enterprise Census

Family Income and Expenditure Survey

Retail Price Survey

Survey of Household Economy

Survey on Private Enterprise Economy

Survey of Research and Development

Survey on Service Industries

Survey on Time Use and Leisure Activities

Basic Survey on the Progress of Government IT Use

Basic Survey on the Progress of IT Use in Public Corporations

Communications Usage Trend Survey

Survey of Telecommunication Industries

#### **Ministry of Finance**

Survey on the Financial Statements of Incorporated Enterprises

#### **Ministry of Education, Culture, Sports, Science and Technology**

Survey on Information Education in Public School

#### **Ministry of Health, Labour and Welfare**

Survey on the Impact of the IT Revolution on Japanese Labour

#### **Ministry of Economy, Trade and Industry**

Basic Survey of Japanese Business Structure and Activities

Census of Commerce

Census of Manufactures

Current Production Statistics Survey of METI

Current Survey on Data Processing

Current Survey of Selected Service Industries

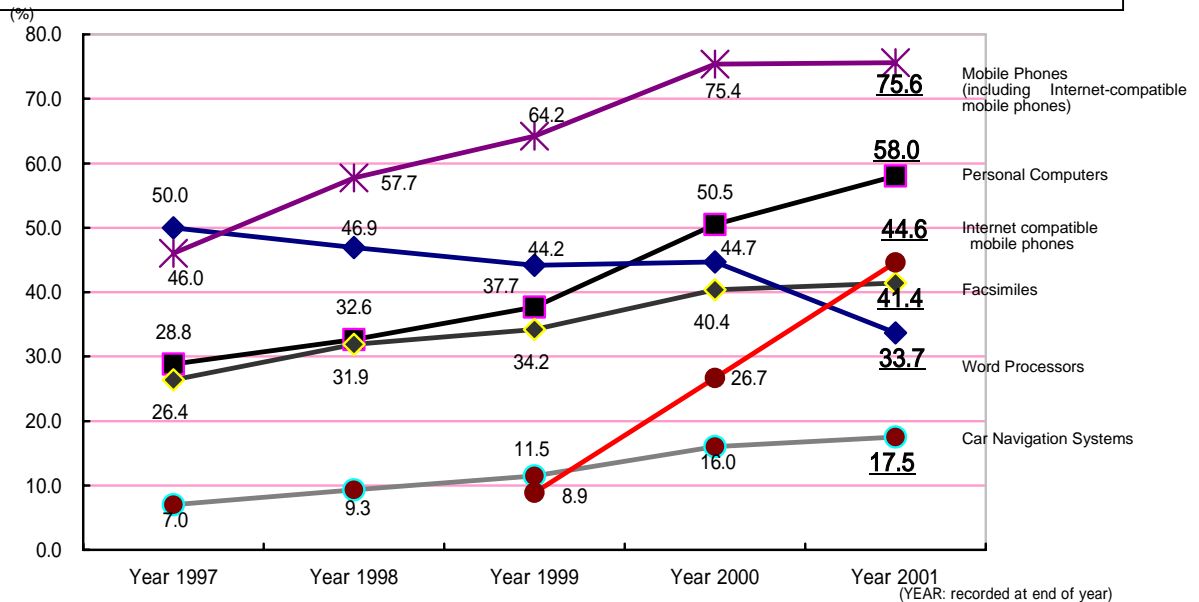
## Annex 2

### Results of 2001 Communications Usage Trend Survey (Outline)

#### A . HOUSEHOLDS/INDIVIDUALS

##### 1) Penetration Rates of the ICT devices (Households)

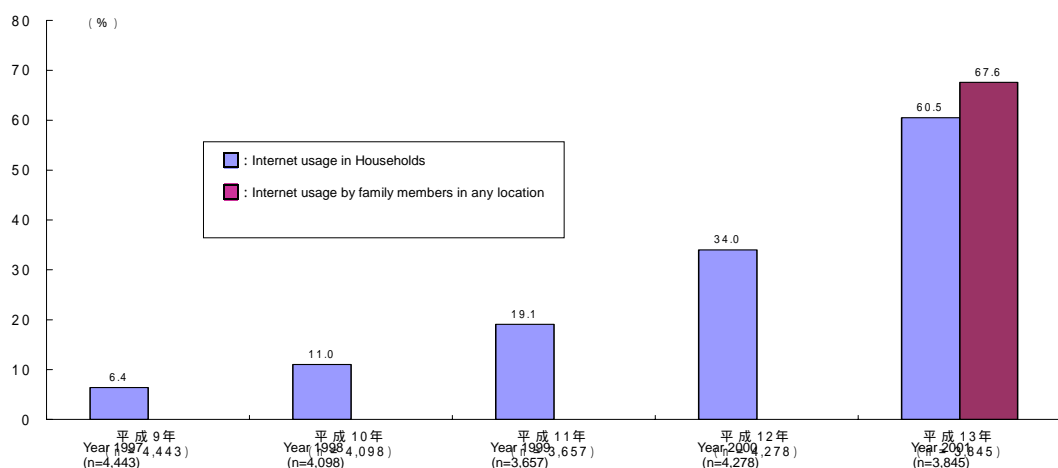
Personal computer: **58.0%** (increased by 7.5 points from 50.5% in 2000)  
 Mobile phones (including Internet-compatible ones): **75.6%** (increased by 0.2 points from 75.4% in 2000)  
 Internet-compatible mobile phones: **44.6%** (increased by 17.9 points from 26.7% in 2000)



##### 2) Internet Usage

##### Internet Penetration rate and number of Internet users

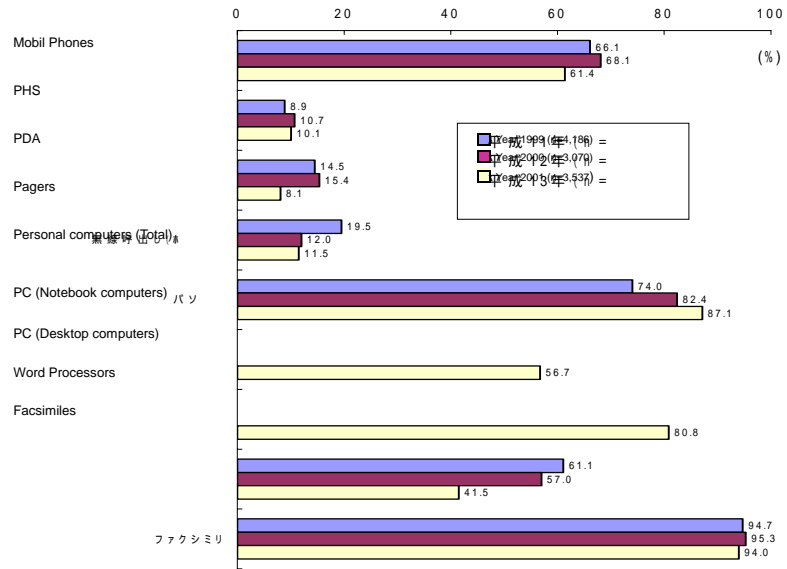
Internet penetration rate of Households: **60.5%** (increased by 26.5 points from 34.0% in 2000)



## B. ESTABLISHMENTS (OFFICES)

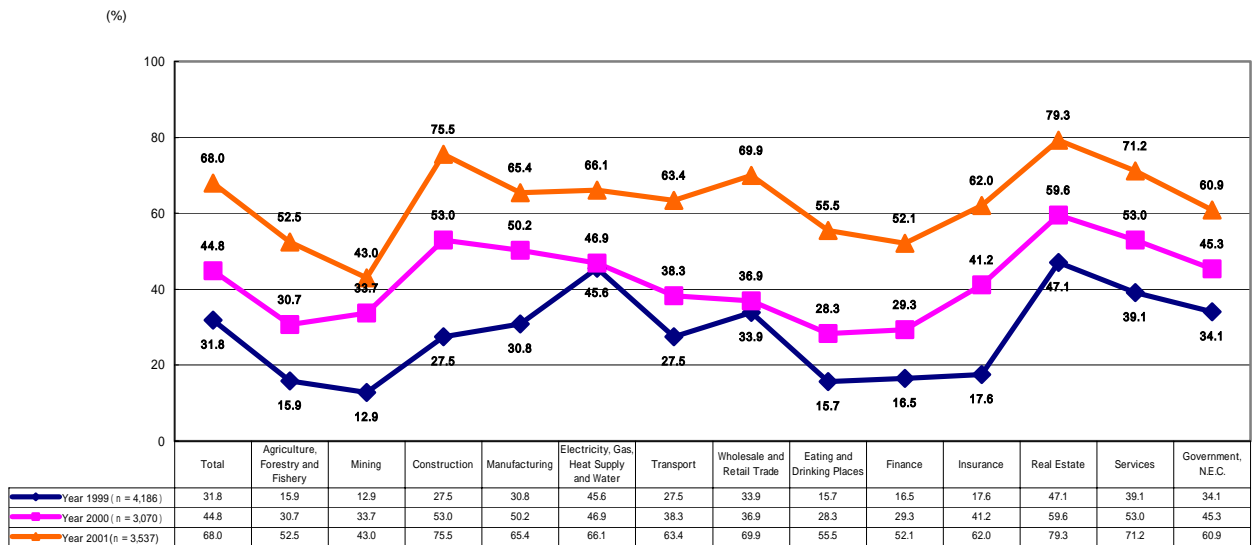
### 1) Penetration Rates of the ICT devices

Mobile phones: **61.4%** (decreased by 6.7 points from 68.1% in 2000)  
 PDA: **8.1%** (decreased by 7.3 points from 15.4% in 2000)  
 Personal computer: **87.1%** (increased by 4.7 points from 82.4% in 2000)



### 2) Usage of the Internet

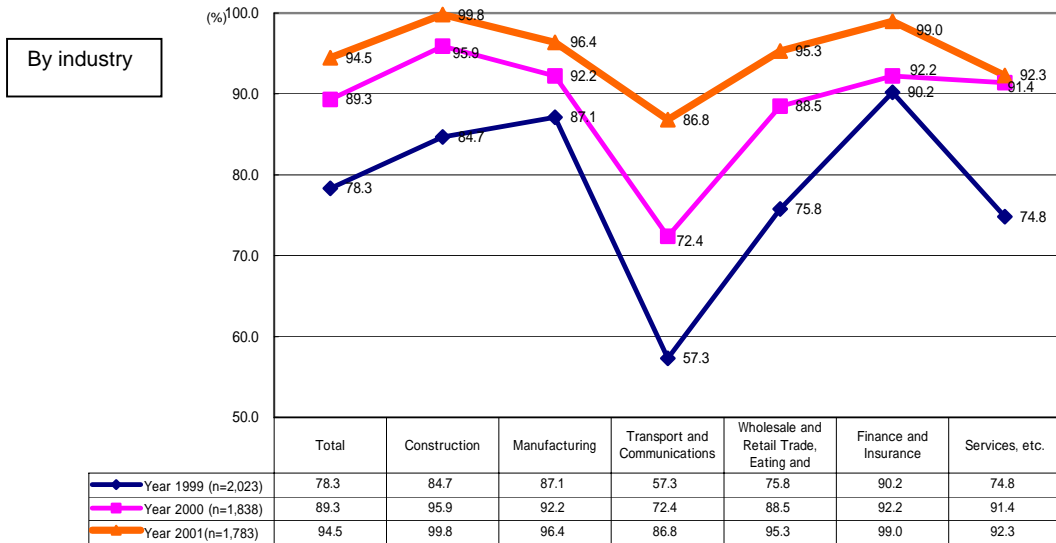
Internet penetration rate: **68.0%** (increased by 23.2 points from 44.8% in 2000)  
 By industry, the rate of increase in “Wholesale & Retail Trade”, “Eating & Drinking Places” and “Transport” is remarkable.



## C. ENTERPRISES (COMPANIES)

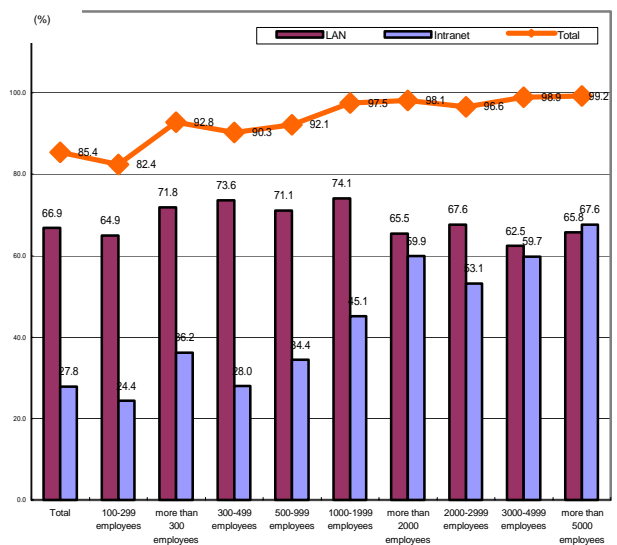
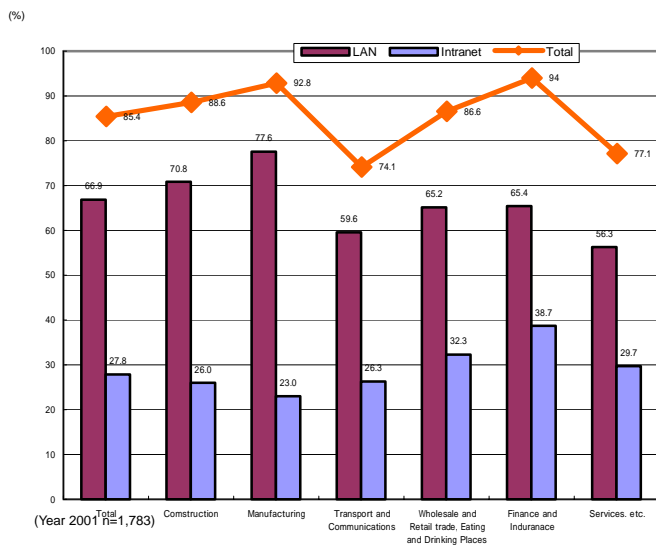
### 1) Internet Usage

Internet penetration rates: **94.5%** (increased by 5.2 points from 89.3 % in 2000)  
The gap in the rate by industry and by number of regular employees has been bridged.



### 2) Status of Communications Network

The rate of having an intra-company communications network: **85.4%**  
(LAN: **66.9%**, Intranet: **27.8%**)  
The rate of having an inter-company communications network: **40.5%**  
(WAN: **28.5%**, Extranet: **13.9%**)



(%)

(%)