

Chapter 4

Current state of ICT

Section 1

ICT industry trends

1. Economic size of the ICT industry

The ICT industry's market size in 2010 was 85.4 trillion yen (based on nominal domestic production), accounting for 9.2% of all industries and making it the largest industry in the country (Figure 4-1-1). The market size leveled off between 2000 and 2005 before declining along with markets for other industries from 2008 following the Lehman Shock. Particularly, the market suffered a sharp plunge in 2009 due to the shock before the decline became moderated and continued in 2010.

2. ICT industry's economic spillover effects

The ICT industry's economic spillover effects on each industry's production operations¹ indicate that the ICT industry induced 89.5 trillion yen in added value and 7.642 million jobs in 2000. The ICT industry thus has the largest economic spillover effects among industries in Japan (Figure 4-1-2-1).

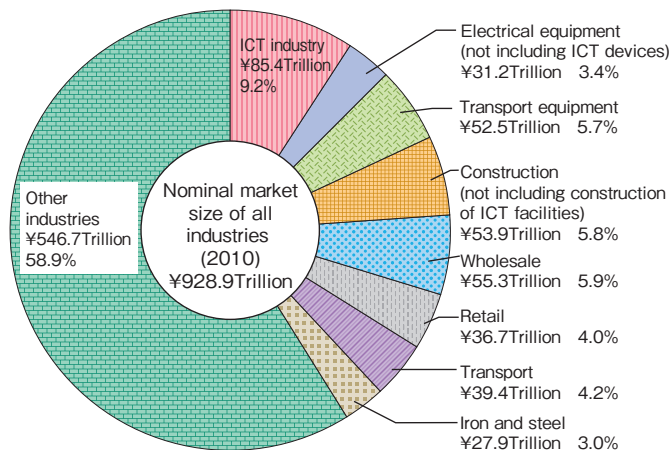
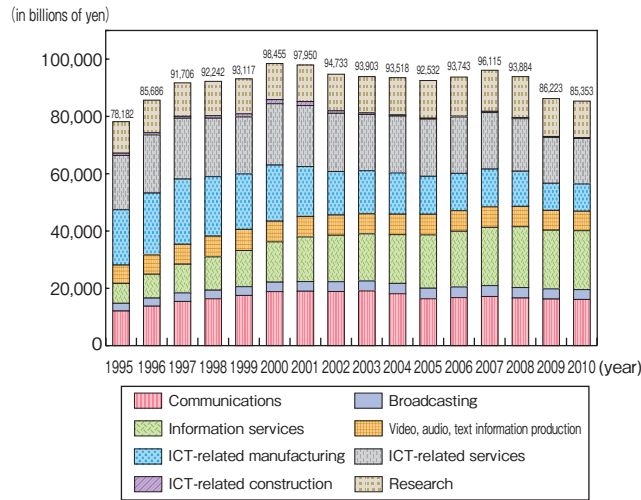
Section 2

ICT Industry Trends

1. Basic survey on the information and communications industry

The basic survey on the information and communica-

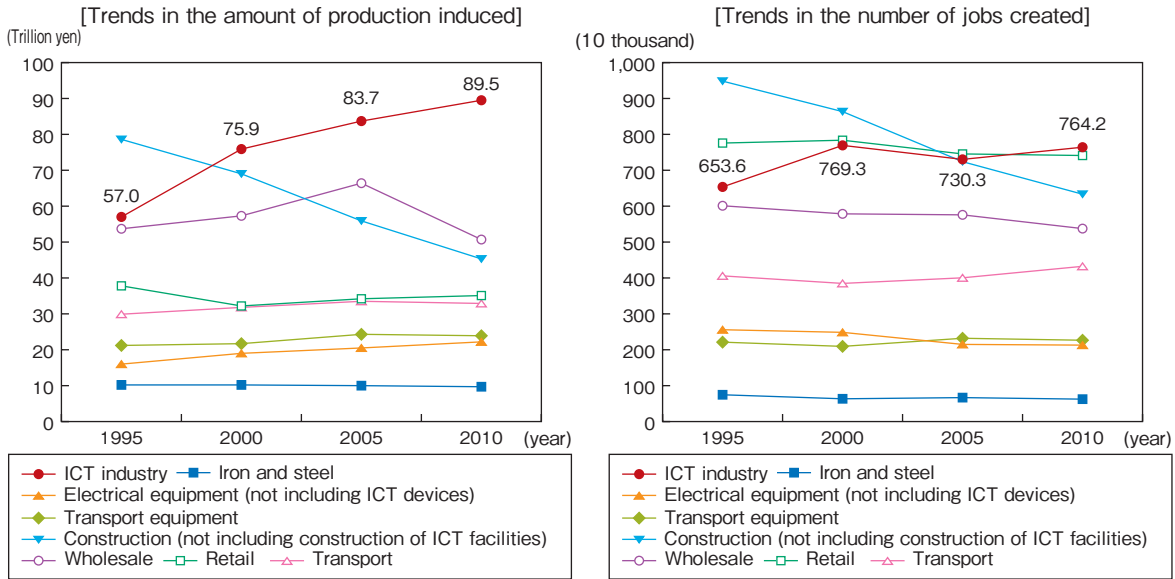
Figure 4-1-1-1 Nominal market sizes of major industries (based on nominal domestic production) (2009) and their transitions



(Source) MIC "Survey on Economic Analyses on ICT" (2012)

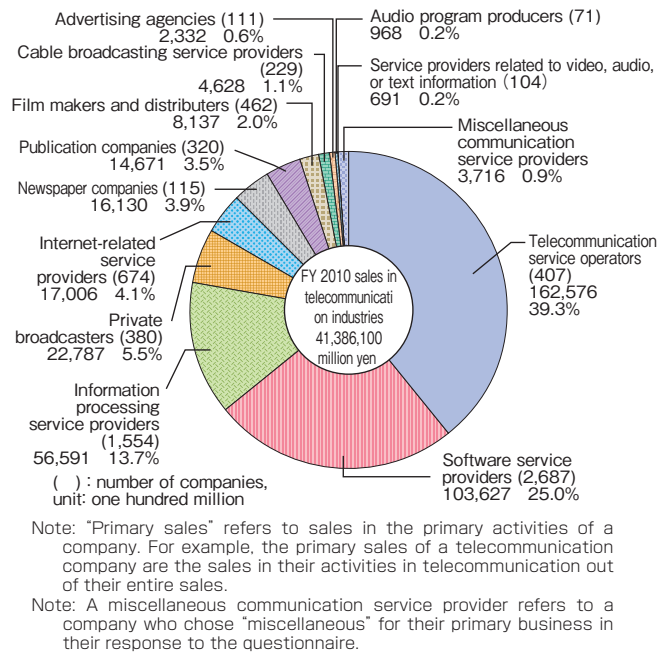
¹ "Economic spillover effects of production operations" indicate economic spillover effects of production operations in each domestic industry.

Figure 4-1-2-1 Transitions in economic spillover effects (induced added value and jobs) of major industries' production operations



(Source) MIC "Survey on Economic Analyses on ICT" (2012)

Figure 4-2-1-1 ICT industry sales



(Source) MIC/METI "2011 Basic survey on the Information and Communications industry"

tions industry is an ordinary statistical survey (started in 2010) that the MIC and the Ministry of Economy, Trade and Industry jointly conduct under the Statistics Act to specify trends of enterprises belonging to the ICT industry as Large Category G of the Japan Standard Industry Classification and obtain basic data for ICT industry policies.

(1) Status of Sales

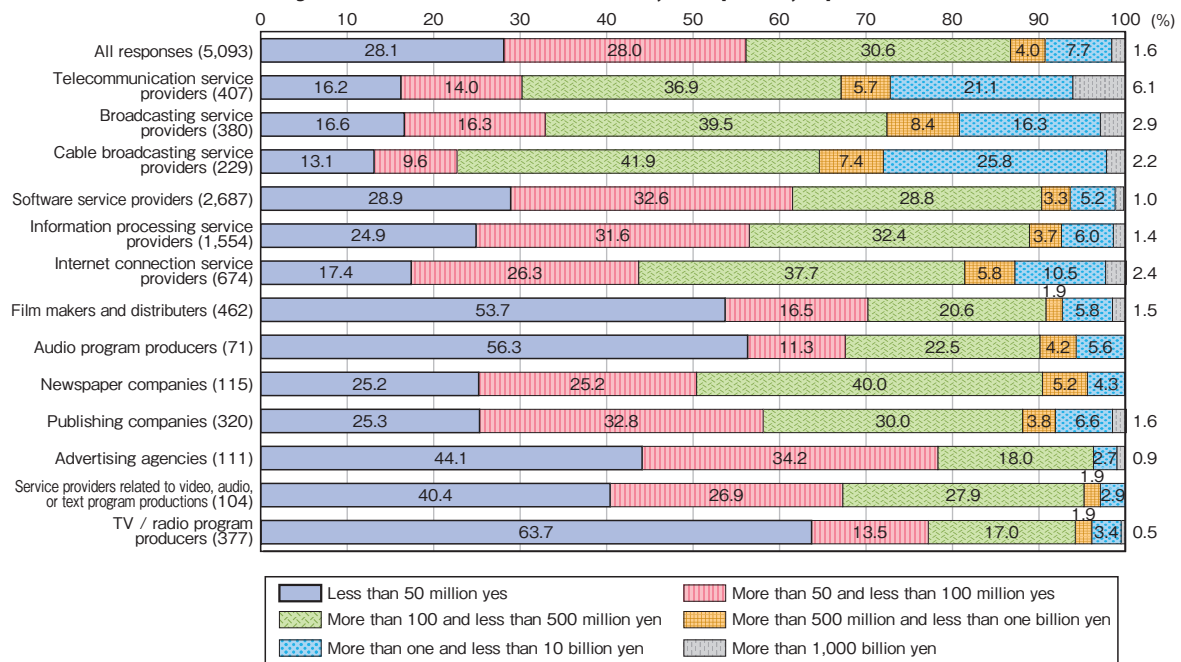
The ICT industry's sales in FY 2010 totaled 41.3861 trillion yen. The telecommunications sector accounted

for the largest share of the industry's sales, followed by the software sector and the data processing and providing services sector. The three sectors capture 78.0% of the total ICT industry sales. The share of the total sales was 39.3% (up 1.5 percentage points from the previous year) for the telecommunications sector and 25.0% (up 2.5 points) for the software sector (Figure 4-2-1-1).

(2) Breakdown

A breakdown of ICT industry enterprises by capital size indicate that enterprises capitalized at less than 100

Figure 4-2-1-2 Breakdown of ICT industry enterprises by capital size



(Source) MIC/METI "2011 Basic survey on the Information and Communications industry"

million yen in eight of the 12 ITC industry sectors account for more than 50% of the industry's total (Figure 4-2-1-2)..

Section 3

Internet Usage Trends

1. Status of Internet diffusion

(1) Status of Diffusion of major ICT tools (households)

The household penetration rate at the end of 2011 was 94.5% for cellular phones and personal handyphone systems² and 77.4% for personal computers. The rate for smartphones³ included into the total number of cellular phones and PHS stood at 29.3% (up 19.6 percentage points from a year earlier), indicating a rapid diffusion (Figure 4-3-1-1).

(2) Status of Internet utilization

The number of Internet users⁴ at the end of 2011 reached 96.1 million, an increase of 1.48 million from the end of 2010 (a year-on-year increase of 1.6%). The Internet population penetration rate was 79.1% (up 0.9 per-

centage point from the previous year) (Figure 4-3-1-2). Those using personal computers at home to access the Internet accounted for 62.6% of total Internet users, the largest portion followed by 52.1% for cellular phones, 39.3% for other personal computers and 16.2% for smartphones.

2. Harmful experiences associated with Internet use

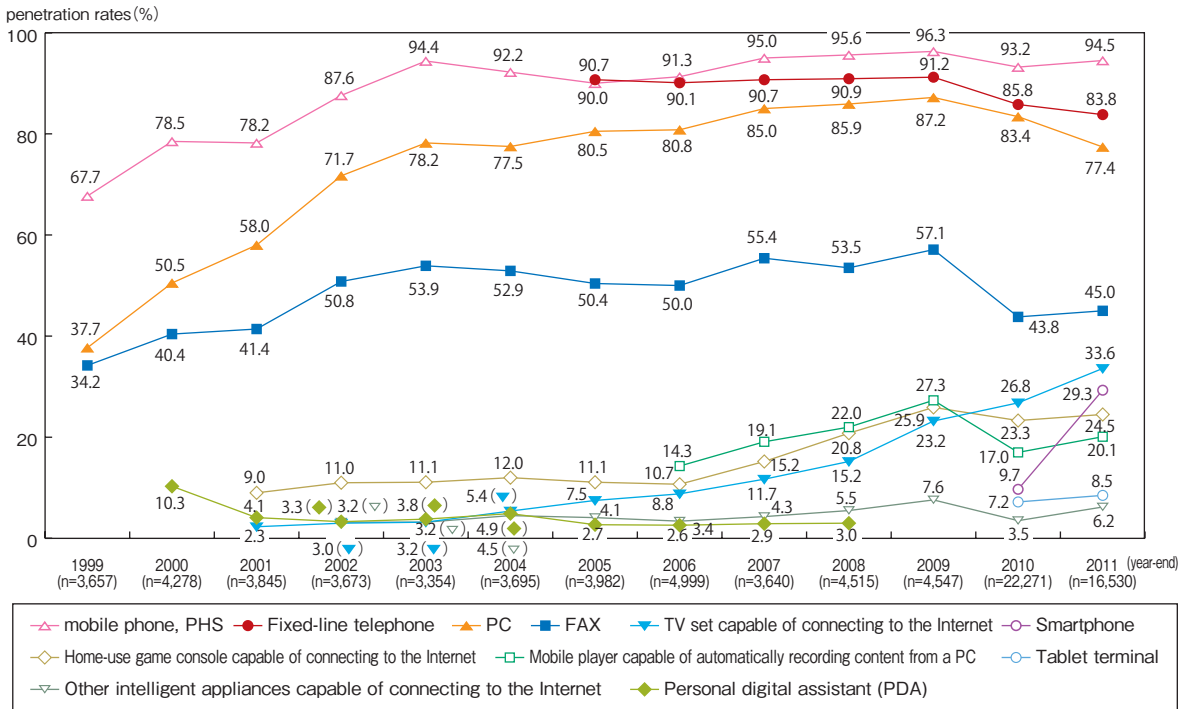
When households were asked about harmful experiences associated with Internet use through personal computers at home in the past year, the most frequently cited experience was the receipt of spam mails (excluding billing fraud mails), cited by 36.7% of respondents. Following this were 21.6% for the detection of computer viruses without infection and 9.8% for one or more infections with viruses. Regarding harmful experiences associated with Internet use through cellular phones, the receipt of spam mails (excluding billing fraud mails) was cited most frequently, or by 43.5% of respondents, followed by 13.4% for the receipt of billing fraud mails, indicating mail-related harmful experiences are prevalent.

² Mobile phones and PHSs have included personal digital assistants, or PDAs, since the end of 2009 and smartphones since the end of 2010. The penetration rate for mobile phones and PHSs excluding smartphones came to 89.4 percent.

³ Smartphones are included into mobile phones and PHSs.

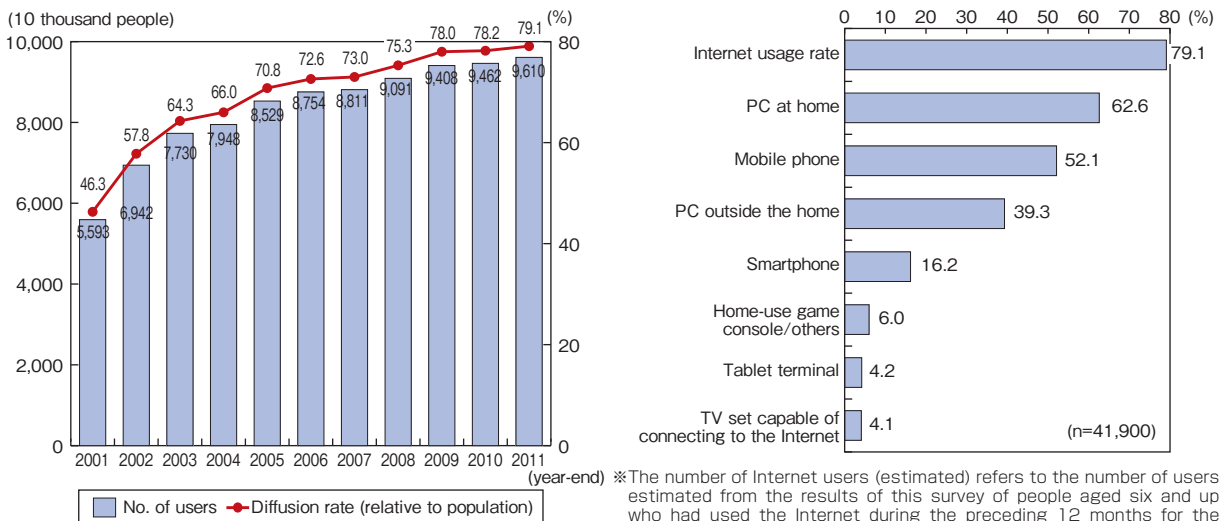
⁴ (1) The survey covers those aged 6 or more. (2) The estimated number of Internet users is an estimate based on the survey that checked if survey targets aged 6 or more used the Internet in a year subject to the survey. Internet connection tools include personal computers, mobile/PHS phones, smartphones, tablet terminals, game consoles and others (irrespective of whether users own these tools). Internet utilization purposes cover all possible ones including personal, business and school purposes. (3) The number of Internet users was calculated by multiplying estimated population aged 6 or more (estimated from Population Census and death table data) with the Internet utilization rate obtained through the survey for people aged 6 or more. (4) The Communications Usage Trend Survey excludes those making no response.

Figure 4-3-1-1 Transitions in household penetration rates for ICT terminals



(Source) MIC "2011 Communications Usage Trend Survey"

Figure 4-3-1-2 Transitions in Internet user numbers and the population penetration rate, breakdown of Internet access terminals (at the end of 2011)



※The number of Internet users (estimated) refers to the number of users estimated from the results of this survey of people aged six and up who had used the Internet during the preceding 12 months for the survey.

(Source) MIC "2011 Communications Usage Trend Survey"

Section 4

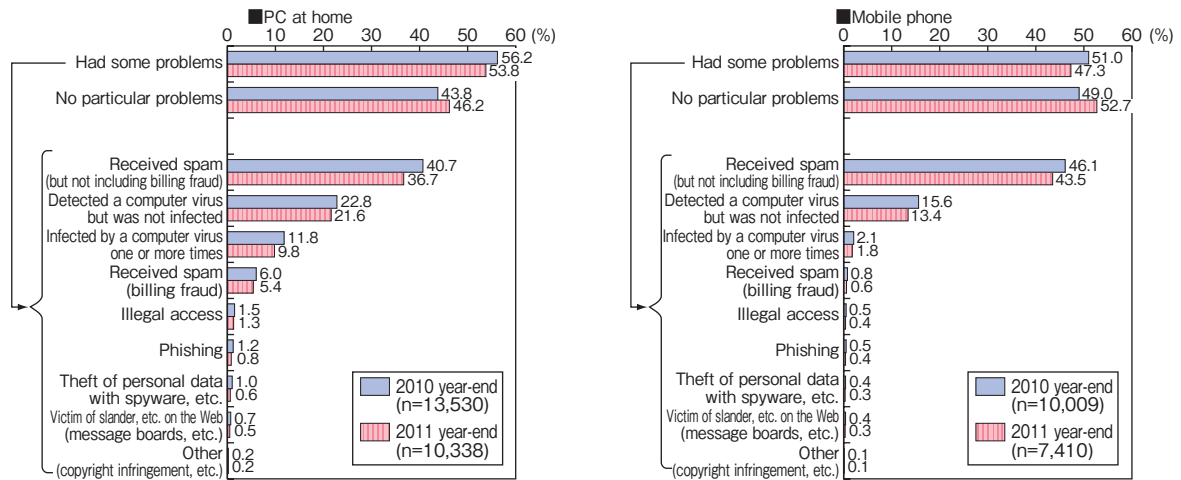
Cloud Service Utilization Trends

1. Status of cloud service utilization in Japan

Enterprises that said they had used cloud services even partially accounted for 21.6% of enterprise respon-

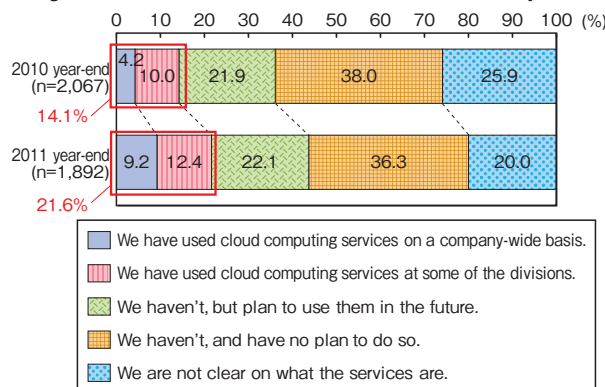
dents in our survey, up 7.5 percentage points from 14.1% at the end of 2010 (Figure 4-4-1-1). A breakdown of respondents by capital size group indicates larger companies use cloud services more frequently. The cloud service utilization rate is 44.4% for enterprises capitalized at 5 billion yen or more.

Figure 4-3-2-1 Harmful experiences associated with Internet use at households (multiple answers permitted)



(Source) MIC "2011 Communications Usage Trend Survey"

Figure 4-4-1-1 Status of cloud service utilization in Japan



(Source) MIC "2011 Communications Usage Trend Survey"

Section 5 Telecommunications Sector 1. Telecommunications market

Sales in the telecommunications sector in FY 2010 totaled 13.3682 trillion yen (down 6.0% from the previous year). Fixed communications accounted for 38.7% of the total and mobile communications (cellular phones and PHS) for 48.6% (Figure 4-5-1-1).

2. Status of telecommunications services provision

Subscriptions to fixed communications (including those to NTT East and West services (including ISDN), non-NTT services and CATV-based telephone services) and the 050-type IP phone services have been declining, whereas subscriptions to mobile communications (cellular phones and PHS) and the OABJ-IP phone service have been growing steadily.

After subscriptions to cellular phone services overtook those to fixed-line phone services in FY 2000, cellular phone subscriptions at the end of FY 2011 were about 3.7 times as many as fixed-line phone subscriptions (Figure 4-5-2-1).

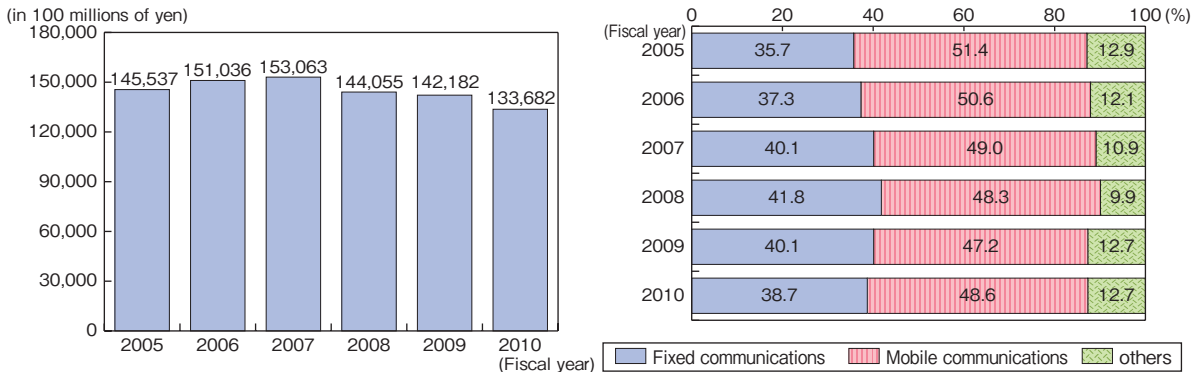
Section 6 Broadcasting Sector 1. Broadcasting market

The entire broadcasting sector's sales including revenues from broadcasting and non-broadcasting operations in FY 2010 increased 2.2% from the previous year to 3.9089 trillion yen, achieving an upturn (Figure 4-6-1-1).

2. Status of broadcasting services

Subscriptions to all broadcasting services, except the 124/128 degree east longitude CS (communications sat-

Figure 4-5-1-1 Transitions in telecommunications sector sales, and sales shares for fixed communications and mobile communications

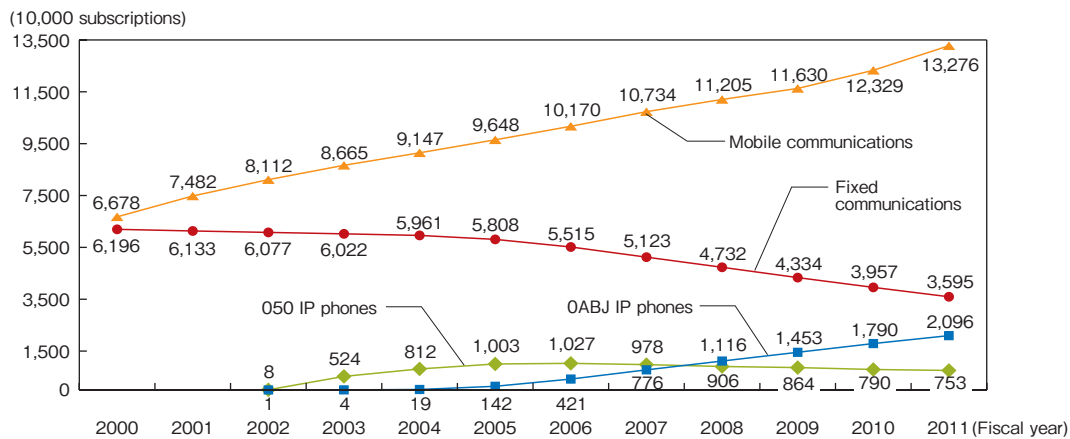


Comparisons must be made with caution, as sales are the simple sum of figures from all responding carriers and each year the number of responding carriers changes

Prepared on the basis of MIC/METI "2011 Basic Survey on the ICT Industry"

Note: Data for FY 2005 were prepared on the basis of the MIC "Basic Survey on the Communications and Broadcasting Industry"

Figure 4-5-2-1 Transitions in subscriptions to telecommunications services



Note: as for the fixed-line, the number of subscribers is a sum of the subscribers of East/ West NTT (including subscribers of ISDN service), direct-line services, and CATV-phone services

Note: as for the mobile communication, the number of subscribers is a sum of subscribers of mobile phones and PHS.

Note: As for OABJ-number type and O50-number type IP phone, the numbers for FY 2002 and 2003 are based on the poll-responses from operators, while the numbers for FY2004 and later are based on the operators' reports submitted following the Regulations of Telecommunication Operators' Report Submission.

Note: The numbers for the years before 2002 are estimated based on the detailed analysis.

Prepared on the basis of the MIC "Status of Telecommunications Service Subscriptions" (March 31, 2012)

ellite) digital broadcast, increased in FY 2010 (Figure 4-6-2-1).

Section 7

Radio Utilization

1. Status of radio utilization and the number of radio stations

The number of radio stations (excluding PHS and wireless LAN terminals and other radio stations for which no license is required) at the end of FY 2011 increased 11.5% from a year earlier to 134.89 million, in-

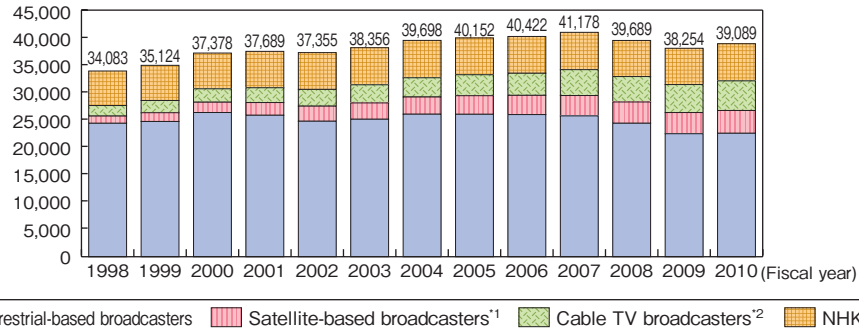
cluding 132.66 million land mobile stations (such as cellular phones), up 11.7%. The land mobile stations' share of the total number of radio stations was as high as 98.3%. The number of amateur stations declined to 440,000 (Figure 4-7-1-1).

2. Protection of the electromagnetic environment

The radio utilization environment has been kept good thanks to the implementation of measures against jamming of key communications and the crackdown on illegal radio stations. Since FY 2010, we have operated a system to accept reports on jamming of key communications over 24 hours a day in an effort to promptly elimi-

Figure 4-6-1-1 Transitions in the broadcasting sector's market size (total sales) and a breakdown

(Unit: 100 millions of yen)



(Unit: 100 millions of yen)

(Fiscal year)		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Private broadcasters	Terrestrial-based broadcasters	24,488	24,823	26,466	25,960	24,863	25,229	26,153	26,138	26,091	25,847	24,493	22,574	22,655
	(Community broadcasts included in total above)	—	—	125	137	139	141	140	140	144 ^{*5}	148 ^{*5}	150 ^{*5}	123 ^{*5}	116
	Satellite-based broadcasters ¹	1,327	1,607	1,891	2,335	2,769	2,995	3,158	3,414	3,525	3,737	3,905	3,887	4,185
	Cable TV broadcasters ²	1,931	2,244	2,463	2,718	3,076	3,330	3,533	3,850	4,050	4,746	4,667	5,134	5,437
	NHK ³	6,337	6,450	6,559	6,676	6,750	6,803	6,855	6,749	6,756	6,848	6,624	6,658	6,812
TOTAL		34,083	35,124	37,378	37,689	37,355	38,356	39,698	40,152	40,422	41,178	39,689	38,254	39,089

Note 1: As for the satellite broadcasting operators, the numbers are estimated based on their operating incomes of broadcasting services on consignment or broadcast-on-telecommunication services.

Note 2: A cable television operator refers to a profit corporation whose primary business is cable television service provision, and registered as a general broadcasting business (general cable broadcasting operator), excluding business operators who serve as general broadcasting service providers (based on the stipulations of the former Act on Cable Television Broadcasting Article 9) solely by providing cable-television-broadcasting facilities, or operators who are providing broadcasting services by IP multicast.

Note 3: For NHK, the number is their ordinary operating income.

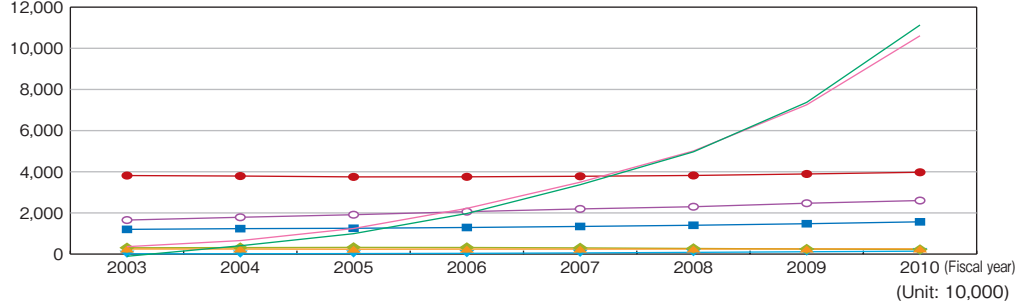
Note 4: Details of terrestrial broadcasting operators from 2008 to 2009 are not available.

Note 5: Community broadcasting operators who provide cable-television-services are excluded.

Prepared on the basis of MIC materials and the NHK Yearbook for each fiscal year

Figure 4-6-2-1 Subscriptions to broadcasting services

(Unit: 10,000)



	2003	2004	2005	2006	2007	2008	2009	2010 (Fiscal year)
Terrestrial-based broadcasters	3,815.7	3,792.1	3,751.2	3,754.7	3,780.4	3,820.2	3,893.2	3,975.1
NHK-BS	1,200.9	1,235.9	1,254.3	1,292.2	1,342.3	1,399.9	1,475.2	1,567.2
WOWOW	248.5	246.1	238.2	243.4	243.8	247.6	249.0	251.2
124/128 East CS digital broadcasters	306.7	314.9	325.5	320.2	302.0	273.7	245.6	221.1
110 East CS digital broadcasters	11.5	16.1	23.4	35.7	55.9	83.0	112.6	140.4
Cable TV	1,653.8	1,788.2	1,912.8	2,061.1	2,194.4	2,300.7	2,470.6	2,601.6

Reference: No. of broadcast receivers shipped

(Unit: 10,000)

	2003	2004	2005	2006	2007	2008	2009	2010
For terrestrial digital broadcasts	(107.2)	403.9	991.4	1,971.5	3,370.1	4,969.0	7,374.1	11,130.9
For BS digital broadcasts	360.0	655.3	1,242.5	2,221.1	3,492.5	5,010.0	7,254.0	10,609.0

Note: The number of subscribers of NHK terrestrial broadcasting is the number of the subscription-contracts

Note: The number of subscribers of NHK BS broadcasting is the number of the subscription-contracts.

Note: The number of subscribers of 110 CS is the number of the subscription-contracts for Ska-per ! e2

Note: The number of subscribers of 124/ 128 CS is the number of the subscription-contracts for Sak-per !

Note: The number of subscribers of cable television is a sum of the numbers of subscribers of licensed broadcasting facilities (including the registered facilities according to the former Act Concerning Broadcast on Telecommunications Services, and the facilities using the same broadcasting methods as those stipulated in the former Cable Television Broadcast Act).

Note: The number of units shipment of terrestrial digital broadcasting receivers in 2003 is referential only.

Prepared on the basis of data from JEITA, Japan Cable Laboratories, NHK, and MIC

nate jamming. In FY 2011, the number of communications interference reports came to 2,374, down 249 or 9.5% from the previous year. The number included 501 reports on jamming of key communications, down 188 or 27.3%. The number of actions taken in response to interference reports totaled 2,453 in FY 2011 (Figure 4-7-2).

Section 8

Content Market Trends

1. Present status of Japan's content market

(1) Japan's content market size

The Japanese content market reached 11.2931 trillion yen in 2010. A breakdown of the market by software category indicates that video software accounted for about 50% of the market, text software for slightly more than 40% and voice software for slightly less than 10% (Figure 4-8-1-1).

(2) Communication content market trends

The market size of Japan's mobile content industry (mobile Internet business) has been expanding rapidly.

The market size of Japan's mobile content industry, including mobile content and mobile commerce markets, stood at 1.9061 trillion yen in 2011, up 15.2% from the previous year, continuing growth (Figure 4-8-1-2). A market-by-market breakdown indicates the mobile content market at 734.5 billion yen, up 13.6% from the previous year, and the mobile commerce market at 1.1716 trillion yen, up 16.2% from the previous year, (Figure 4-8-1-2).

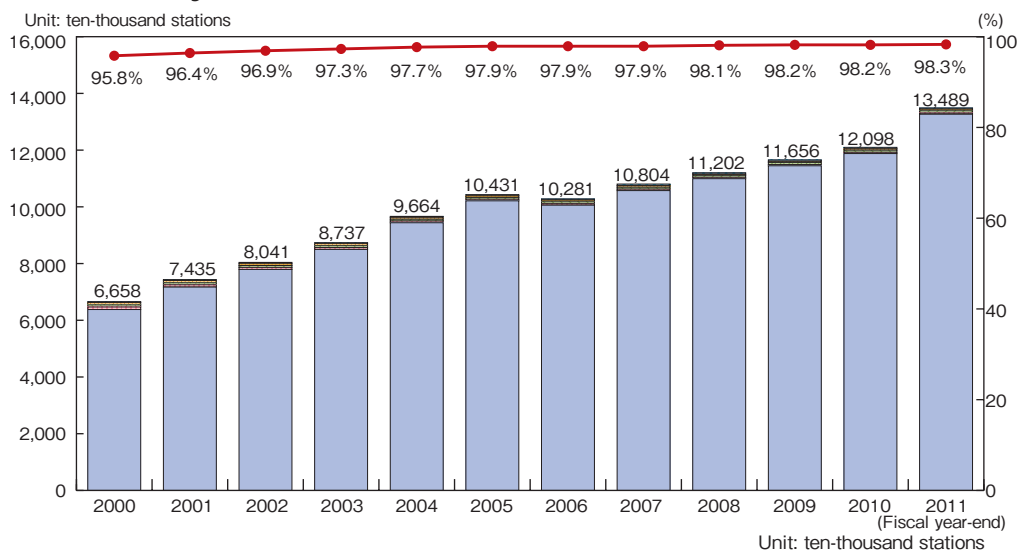
Section 9

Research and Development (R&D)

1. Research in the ICT industry

Corporate research spending, which accounts for about 70% of all scientific and technological research expenditures in Japan, was 12.01 trillion yen in FY 2010. The ICT industry⁵ spent 3.7808 trillion yen on research, capturing 31.5% of all corporate research spending.

Figure 4-7-1-1 Transitions in the number of radio stations



	Unit: ten-thousand stations											
Ground-based mobile stations*1	6,379	7,171	7,793	8,499	9,439	10,212	10,059	10,573	10,993	11,448	11,879	13,266
Amateur stations	90	81	72	66	60	56	53	51	49	47	45	44
Convenience stations*2	74	71	67	65	64	65	66	68	70	72	74	77
Base stations	82	79	76	74	67	62	62	63	41	41	54	58
Miscellaneous	33	33	33	33	34	36	41	49	49	48	46	43
Percentage of ground-based mobile station	95.8%	96.4%	96.9%	97.3%	97.7%	97.9%	97.9%	97.9%	98.1%	98.2%	98.2%	98.3%

Note 1: A ground-based mobile station refers to a station which is operative during a displacement or in an unspecified place (ex. Mobile phones)

Note 2: A convenience station refers to a station used for convenient wireless communication (ex. personal radio).

⁵ ICT industry research spending indicates the total research spending by the ICT equipment and tool manufacturing industry, the electrical equipment and tool manufacturing industry, the electronic component, device, and circuitry manufacturing industry and the information and communications industry (including information industry, telecommunications industry, broadcasting industry and Internet-related and other ICT industry).

Figure 4-7-2-1 Transitions in the number of radio station jamming/interference reports and the number of actions taken in response to such reports

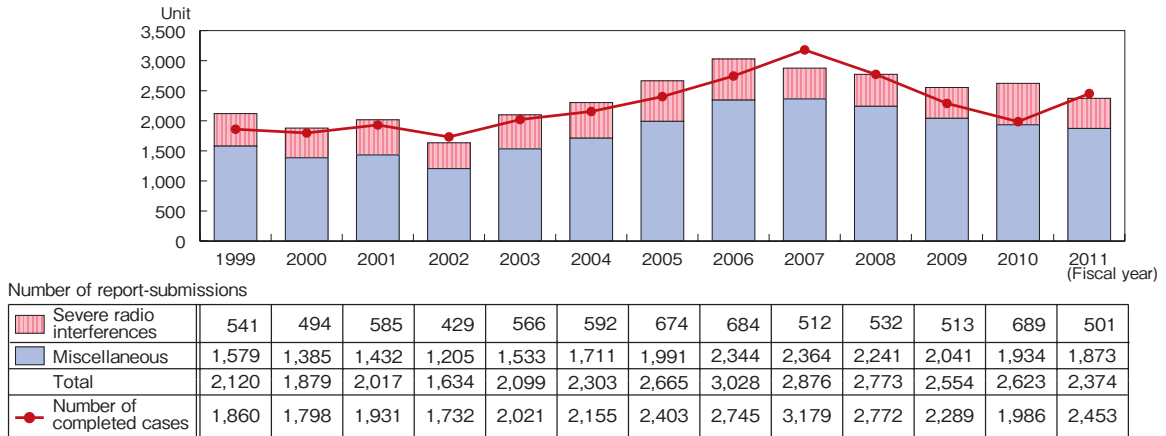
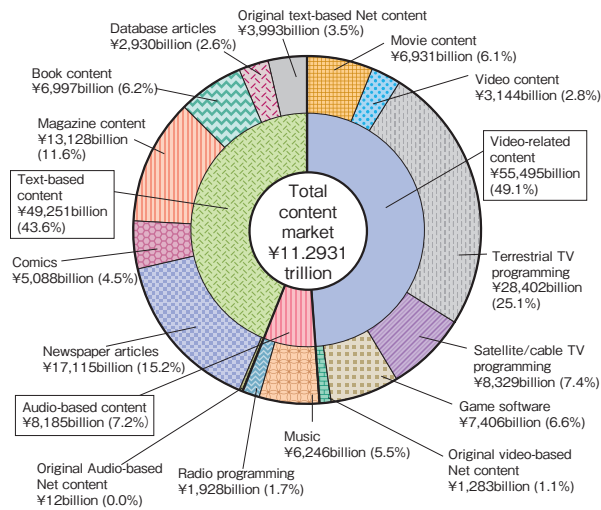
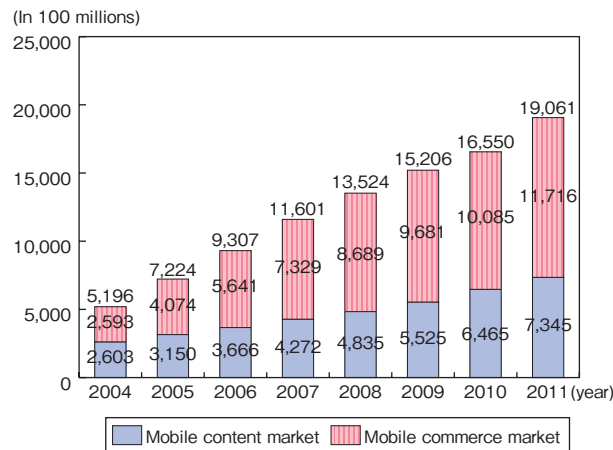


Figure 4-8-1-1 Breakdown of the Japan's content market (2010)



(Source) MIC Institute for Information and Communications Policy "Survey on Production and Distribution of Media Software"

Figure 4-8-1-2 Market size of the mobile content industry



(Source) MIC "Survey on Conditions and Challenges in the Mobile Content Industry"

Among ICT industry sectors, the ICT equipment and tool manufacturing industry accounted for the largest share of the total ICT industry spending on research (Figure 4-9-1-1).

2. Technology trading

The value of Japan's technology exports in FY 2010 was 2.4366 trillion yen, of which the ICT industry accounted for 407.1 billion yen or 16.7%. Japan's imports of technology were worth 530.1 billion yen, of which the ICT industry captured 310.1 billion yen or 58.5%. Thus, technology trade posted an export surplus each for the entire Japan and the ICT industry (Figure 4-9-2-1).

Among ICT industry, the ICT equipment and tool manufacturing industry accounted for the largest share of the ICT industry's technology exports and imports each.

3. Number of researchers

As of March 31, 2011, the number of researchers (covering researchers at enterprises, nonprofit organizations, public organizations, universities and other entities) stood at a record high of 842,900 persons, continuing to increase for the 10th straight year. Corporate researchers accounted for 490,538 persons or about 60% of the total. The ICT industry⁶ captured 190,310 persons or 38.8% of the corporate researchers. Of the ICT industry researchers, the ICT equipment and tool manufacturing

industry accounted for the largest share among ICT industry sectors.

Section 10

Postal Service and Correspondence Delivery Business

1. Postal service

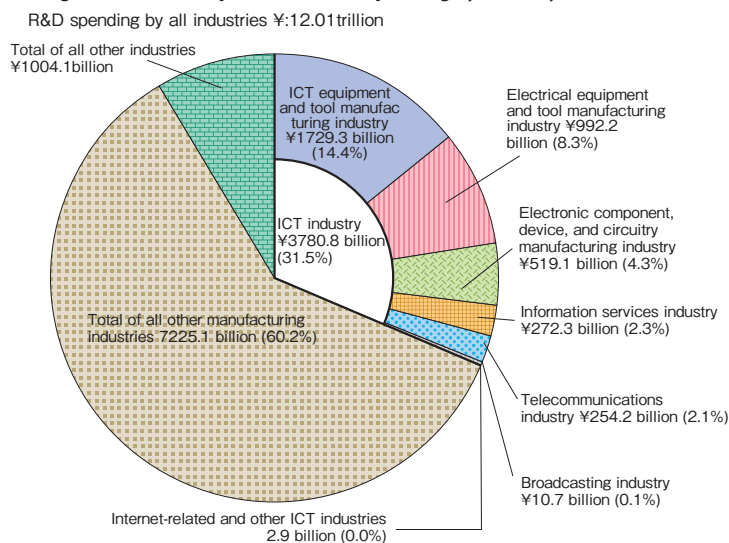
Japan Post Service Co. logged a net loss of 4.5 billion yen in FY 2011 (Table 4-10-1-1).

There were 24,514 post offices at the end of FY 2011. The breakdown by category shows that there were 20,217 directly managed post offices (including annexes and non-operational post offices) and 4,297 postal agencies (including non-operational ones) (Figure 4-10-1-2).

2. Correspondence delivery business

Since the Law Concerning Correspondence Delivery by Private-Sector Operators (Law No. 99 of 2002) went into force in April 2003, the number of entrants in the special correspondence delivery business⁷ has grown steadily, but no entrants have come forth for the general correspondence delivery business⁸. At the end of FY 2011, there were 374 operators in the special correspon-

Figure 4-9-1-1 Corporate research spending by industry (FY 2010)



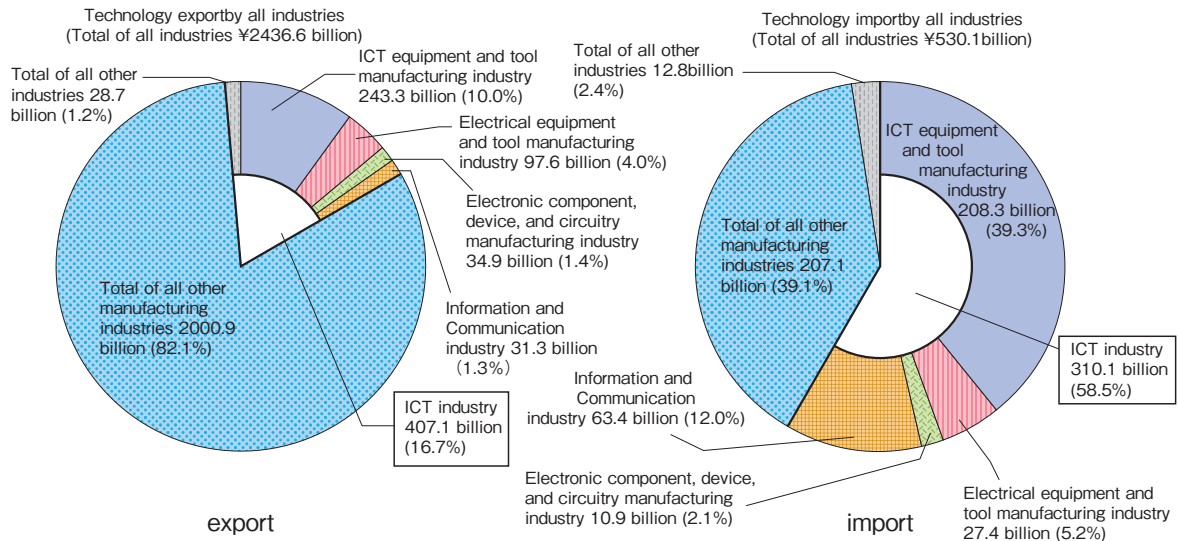
Prepared on the basis of MIC "2011 Research Investigation Report on Science and Technology

⁶ ICT industry researchers are researchers in the ICT equipment and tool manufacturing industry, the electrical equipment and tool manufacturing industry, the electronic component, device, and circuitry manufacturing industry, and the information and communications industry (including information industry, telecommunications industry, broadcasting industry and Internet-related and other ICT industry).

⁷ The business covers innovative services and is required to meet one of Nos. 1 to 3 special correspondence services.

⁸ The general correspondence delivery business is designed to deliver all types of correspondence on a nationwide basis.

Figure 4-9-2-1 Technology trade by industry (FY 2010)



Prepared on the basis of MIC "2011 Research Investigation Report on Science and Technology"

Figure 4-10-1-1 Postal business loss/profit (financial statement)

(hundred million yen)

	2004	2005	2006	First half of 2007	Second half of 2007	2008	2009	2010	2011 (FY)
Net income	283	26	18	-756	694	298	-474	-354	-45

Note: The figures corresponding to the period from FY2004 to the first half of FY2007 are based on the postal service segment information on the financial reports of the Japan Postal Service Corporation. The figures corresponding to the period from the second half of FY2007 to FY2011 are based on the financial reports of the Postal Service Inc. Therefore, simple comparisons cannot be made.

Note: The figures corresponding to the period from FY2004 to the first half of FY2007 are representing net incomes. The figures corresponding to the period from the second half of FY2007 to FY2011 are representing the net incomes in the terms (post-corporate-tax income).

Note: The figure corresponding to the second half of FY2007 is representing the figure after disposal of disposable assets including burden charges (extraordinary loss). The cause of loss in the first half of FY2007 is the income imbalance between the first and second half. The operating income in the second half is generally larger due to the sales of new year greeting cards and postal package services for season gifts.

Note: The cause of loss in FY2009 is the appraisal loss in share holding of a package-service subsidiary (extraordinary loss).

Note: The cause of loss in FY2010 is the decrease in income due to the declining number of mails and the temporary decrease in the number of postal packages after the package-delivery-delay incidents.

Prepared on the basis of data from Japan Post Service Co.

Figure 4-10-1-2 Breakdown of the number of post offices (end of FY 2011)

(in offices)

Operational postal offices				Non-operational postal offices				total
Directly managed postal offices	Postal Agencies	Subtotal	Directly managed postal offices	Postal Agencies	Subtotal	total		
20,124	29	4,069	24,222	64	—	228	292	24,514

Notes:

- "Postal agencies" are post offices operated by contract.
- "Non-operational post offices" are post offices that have been temporarily closed and where counter services have been suspended.
- Of the 64 non-operational directly managed post offices, 53 have been temporarily closed due to the Great East Japan Earthquake.
- Of the 228 non-operational postal agencies, 29 have been temporarily closed due to the Great East Japan Earthquake.
- Of the 228 non-operational postal agencies, 55 are providing outcall services by transfer employees or PR employees.
- Of the 29 annexes currently in operation, one have been set up temporarily as an emergency measure to replace temporarily closed postal agencies.

Prepared on the basis of data from Japan Post Service Co.

dence delivery business (Figure 4-10-2-1). A breakdown by provided service indicates that a relatively large number of operators have entered the No. 1 Service market.

Figure 4-10-2-1 Transitions in the number of special correspondence delivery business operators

