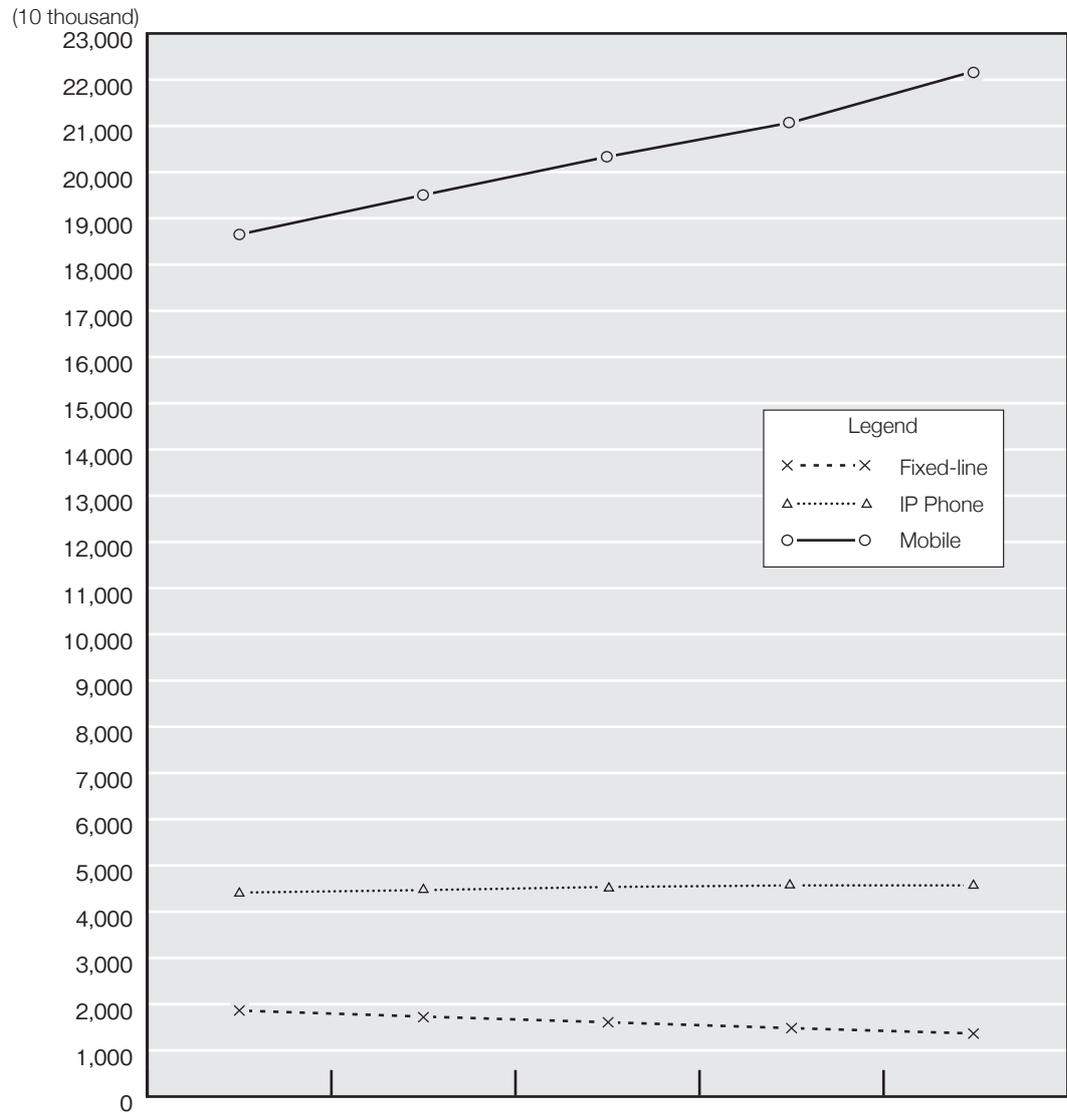


**Chapter 2**  
**Situation of Info-communications**  
**Service Usage**

## 2-1 Situation of Number of Contracts for Various Services

### 2-1-1 Trends in Number of Telecommunications Services Subscriptions, etc.



(Units: 10,000 contracts (subscriber telephones, ISDN, mobile phones, and PHS); 10,000 units (public phones); and 10,000 telephone numbers (IP phones))

Service	FY2019	FY2020	FY2021	FY2022	FY2023
<b>Fixed-line Service Total</b>	1,861	1,731	1,608	1,481	1,364
Subscriber Telephone	1,595	1,486	1,383	1,277	1,183
ISDN	251	231	212	192	170
Public Phone	15	15	14	12	11
<b>IP Phone</b>	4,413	4,467	4,535	4,569	4,569
(0ABJ-IP Phone)	3,521	3,568	3,594	3,612	3,610
(050-IP Phone)	892	899	941	957	959
<b>Mobile Service Total</b>	18,651	19,505	20,333	21,075	22,192
Mobile Phone	18,490	19,440	20,300	21,069	22,192
PHS	162	66	34	6	0

Note: Figures for "Public Phone" represent the numbers of installed units.

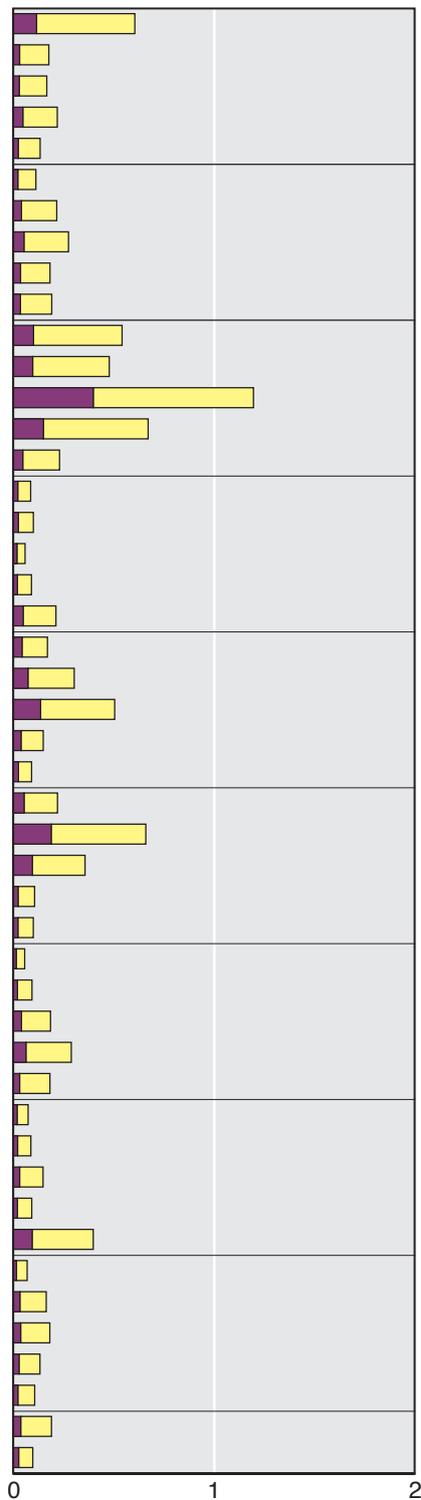
\*Compiled by TCA based on *Voice Communications Usage in Japan Seen from Volume of Communications Traffic State* published by the Ministry of Internal Affairs and Communications

2-1-2 Trends in Number of Subscriber Telephone Contracts by Prefecture

(Contracts)

Pref.	FY2020	FY2021	FY2022	FY2023			
	Total	Total	Total	Total	NTT(Re-entry)		
					Total	Business	Residential
Hokkaido	796,415	743,717	681,705	632,263	610,040	115,820	494,220
Aomori	220,235	207,836	195,119	183,072	177,504	30,357	147,147
Iwate	206,255	195,555	183,139	172,774	167,148	28,601	138,547
Miyagi	279,251	262,285	246,492	231,851	220,074	46,749	173,325
Akita	167,366	157,805	147,030	138,349	133,772	23,558	110,214
Yamagata	140,238	132,005	123,621	116,425	112,374	21,412	90,962
Fukushima	269,270	253,791	238,055	223,449	217,224	39,868	177,356
Ibaraki	348,577	327,492	306,321	287,309	276,428	52,316	224,112
Tochigi	232,351	217,990	204,183	191,085	183,354	35,110	148,244
Gunma	242,358	227,896	213,077	199,539	192,173	34,618	157,555
Saitama	708,569	662,367	617,676	576,321	545,882	100,308	445,574
Chiba	621,850	582,594	543,893	508,212	481,444	96,201	385,243
Tokyo	1,632,327	1,520,096	1,413,803	1,321,027	1,206,777	400,847	805,930
Kanagawa	895,725	834,460	776,718	725,011	677,018	150,090	526,928
Niigata	291,960	274,152	256,608	240,717	231,349	46,446	184,903
Toyama	117,353	107,889	98,496	89,937	85,970	21,126	64,844
Ishikawa	140,245	130,953	117,893	104,587	99,742	23,983	75,759
Fukui	75,826	70,586	65,440	60,247	57,940	16,958	40,982
Yamanashi	115,143	107,101	99,811	92,964	90,162	19,408	70,754
Nagano	275,624	256,273	238,674	221,820	213,198	48,261	164,937
Gifu	227,804	210,970	193,662	178,124	170,482	42,705	127,777
Shizuoka	416,951	385,348	351,138	323,760	305,157	72,432	232,725
Aichi	690,630	637,741	587,768	544,825	508,744	136,034	372,710
Mie	205,111	187,747	170,278	155,259	149,348	37,618	111,730
Shiga	119,017	111,205	103,161	95,414	90,707	24,659	66,048
Kyoto	297,333	276,557	254,094	235,122	221,101	52,883	168,218
Osaka	933,172	865,163	792,688	729,153	665,224	189,297	475,927
Hyogo	481,673	447,877	412,846	382,312	359,545	94,317	265,228
Nara	140,712	130,292	120,690	112,397	105,863	22,631	83,232
Wakayama	128,224	120,004	110,984	102,740	99,456	21,919	77,537
Tottori	71,072	66,590	61,890	57,772	55,996	13,617	42,379
Shimane	115,811	108,523	101,363	94,619	92,746	19,544	73,202
Okayama	248,164	230,916	211,483	194,280	185,913	39,859	146,054
Hiroshima	389,825	364,071	330,106	304,091	290,477	62,233	228,244
Yamaguchi	237,910	222,252	203,775	187,458	182,971	30,523	152,448
Tokushima	96,540	89,760	82,711	75,854	73,344	17,623	55,721
Kagawa	118,793	109,843	100,755	92,530	87,156	20,256	66,900
Ehime	201,157	185,154	167,538	152,751	148,409	30,540	117,869
Kochi	121,011	112,224	102,672	93,800	91,526	19,459	72,067
Fukuoka	561,601	516,562	469,867	427,790	400,872	93,357	307,515
Saga	92,939	85,521	78,747	71,103	68,428	14,768	53,660
Nagasaki	220,404	203,293	184,912	169,681	164,398	31,856	132,542
Kumamoto	240,309	222,847	205,488	187,859	182,312	35,796	146,516
Oita	175,422	162,783	150,356	137,393	132,837	27,421	105,416
Miyazaki	148,004	135,501	122,115	109,732	106,319	21,648	84,671
Kagoshima	264,769	241,866	216,614	196,169	190,815	36,073	154,742
Okinawa	134,449	123,643	111,883	100,466	96,692	25,693	70,999
<b>Total</b>	<b>14,855,745</b>	<b>13,827,096</b>	<b>12,767,338</b>	<b>11,829,413</b>	<b>11,206,411</b>	<b>2,586,798</b>	<b>8,619,613</b>

NTT Subscribers by Prefecture (FY 2023)



\*Compiled by TCA based on *Voice Communications Usage in Japan Seen from Volume of Communications Traffic State* published by the Ministry of Internal Affairs and Communications, as well as data publicized by NTT East and NTT West

## 2-1-3 Trends in Number of ISDN Contracts by Prefecture

(Contracts)

Pref.	Basic Interface							Primary Rate Interface				
	FY2020	FY2021	FY2022	FY2023			FY2020	FY2021	FY2022	FY2023		
	Total	Total	Total	Total	NTT East · West (Re-entry)			Total	Total	Total	Total	NTT East · West (Re-entry)
					Total	Business	Residential					
Hokkaido	96,904	88,688	78,861	70,747	53,378	48,217	5,161	648	601	540	471	235
Aomori	19,441	17,671	15,835	14,044	10,139	9,644	495	112	100	90	65	36
Iwate	20,915	19,342	17,721	15,831	11,399	10,738	661	83	71	65	40	21
Miyagi	41,782	38,650	35,823	32,653	21,988	20,727	1,261	420	299	271	237	119
Akita	15,922	14,615	13,166	11,639	8,647	8,187	460	90	82	79	52	34
Yamagata	16,569	15,009	13,593	12,266	9,110	8,572	538	90	76	69	53	26
Fukushima	28,605	26,197	23,611	21,265	15,739	14,487	1,252	105	97	90	73	44
Ibaraki	39,402	36,132	32,365	28,903	20,273	18,869	1,404	214	208	202	156	97
Tochigi	29,360	26,501	23,778	21,246	14,603	13,360	1,243	242	228	200	167	109
Gunma	29,164	26,509	23,946	21,127	14,354	13,092	1,262	221	213	187	150	77
Saitama	101,027	91,635	84,057	74,850	45,050	40,314	4,736	862	841	783	728	279
Chiba	85,720	77,725	71,022	63,563	41,151	37,736	3,415	865	759	741	636	322
Tokyo	400,743	363,433	328,506	290,089	176,297	162,178	14,119	14,562	13,488	11,916	10,227	4,092
Kanagawa	144,260	131,599	120,309	106,998	67,019	60,846	6,173	2,436	2,036	1,890	1,672	740
Niigata	35,639	32,556	29,960	26,223	18,375	17,298	1,077	141	132	132	112	58
Toyama	18,538	17,111	15,541	13,296	10,149	9,321	828	135	129	113	77	45
Ishikawa	20,698	19,243	17,265	14,940	11,146	10,231	915	175	160	153	132	55
Fukui	13,162	12,107	11,085	9,641	7,674	7,191	483	66	62	61	49	40
Yamanashi	13,181	11,999	10,731	9,490	7,284	6,648	636	70	61	58	44	31
Nagano	35,286	31,594	28,580	25,125	18,661	16,761	1,900	170	148	138	128	51
Gifu	33,747	31,176	28,288	24,771	18,946	17,184	1,762	162	138	108	87	41
Shizuoka	61,060	55,986	49,472	43,130	28,920	27,315	1,605	343	321	282	220	110
Aichi	129,553	118,963	108,220	94,846	62,682	58,170	4,512	1,226	1,120	995	780	371
Mie	31,212	28,681	25,570	22,716	18,040	16,580	1,460	143	115	96	82	47
Shiga	21,818	20,267	18,432	16,437	12,375	11,459	916	121	108	100	82	33
Kyoto	45,485	42,334	38,430	33,059	21,792	19,356	2,436	324	294	256	214	88
Osaka	197,113	182,486	166,342	146,247	84,700	77,802	6,898	3,765	3,412	3,113	2,677	1,142
Hyogo	76,196	71,007	65,053	57,361	40,341	37,160	3,181	743	685	645	522	234
Nara	17,713	16,594	15,171	13,622	9,536	8,167	1,369	89	81	67	56	33
Wakayama	13,803	12,801	11,538	9,947	7,774	7,058	716	64	65	55	52	34
Tottori	10,344	9,682	9,035	7,829	6,758	6,189	569	46	41	39	29	18
Shimane	13,431	12,438	11,696	10,560	9,287	8,538	749	117	103	101	95	41
Okayama	35,287	33,179	30,566	26,820	20,890	19,180	1,710	191	178	175	125	81
Hiroshima	54,292	50,887	46,253	40,630	30,422	28,041	2,381	320	303	286	254	147
Yamaguchi	24,268	22,780	20,811	18,438	14,842	13,577	1,265	103	98	79	72	42
Tokushima	12,251	11,452	10,579	9,152	7,412	6,799	613	57	51	45	28	16
Kagawa	18,086	16,691	15,206	13,284	9,662	9,131	531	130	124	111	94	46
Ehime	21,325	19,702	17,760	15,598	12,580	11,611	969	123	123	112	89	53
Kochi	12,947	12,171	10,940	9,554	8,061	7,569	492	68	64	48	25	16
Fukuoka	94,743	87,619	79,795	70,180	43,760	41,168	2,592	921	692	636	527	219
Saga	11,951	11,045	10,159	9,001	6,998	6,534	464	54	45	43	28	22
Nagasaki	21,362	19,561	17,408	15,321	11,954	11,177	777	141	142	133	103	31
Kumamoto	27,381	25,302	23,194	20,433	15,810	14,890	920	143	131	124	105	52
Oita	21,683	20,426	18,724	16,773	13,177	12,264	913	81	79	62	45	13
Miyazaki	16,878	15,623	14,350	12,801	9,966	9,363	603	108	97	93	58	22
Kagoshima	25,802	23,369	20,527	17,906	14,140	13,366	774	118	114	104	76	39
Okinawa	19,043	17,691	16,391	14,071	10,509	10,201	308	223	204	187	166	86
Nationwide	2,275,092	2,088,229	1,895,665	1,674,423	1,133,770	1,044,266	89,504	31,631	28,719	25,873	21,960	9,588

\*Compiled by TCA based on *Voice Communications Usage in Japan Seen from Volume of Communications Traffic State* published by the Ministry of Internal Affairs and Communications, as well as data publicized by NTT East and NTT West

## 2-1-4 Trends in Number of Mobile Phone and PHS Contracts by Prefecture

(Contracts)

Pref.	FY2020	FY2021	FY2022	FY2023
Hokkaido	5,975,105	6,011,788	6,002,085	6,097,010
Aomori	1,193,270	1,206,927	1,197,301	1,205,685
Iwate	1,171,489	1,186,412	1,177,319	1,186,355
Miyagi	2,957,708	2,561,810	2,542,653	2,568,782
Akita	908,889	913,914	905,759	907,389
Yamagata	1,041,223	1,052,717	1,047,099	1,052,933
Fukushima	1,859,929	1,869,178	1,856,091	1,868,517
Ibaraki	2,899,444	2,942,238	2,936,833	2,969,737
Tochigi	1,985,280	2,001,112	2,003,859	2,096,573
Gunma	2,028,492	2,059,479	2,055,072	2,078,357
Saitama	7,901,584	8,060,656	8,025,562	8,176,268
Chiba	6,761,478	6,902,491	6,936,002	7,096,248
Tokyo	62,247,537	66,686,306	71,592,381	77,915,237
Kanagawa	10,864,406	11,288,054	11,970,885	12,598,403
Niigata	2,164,965	2,187,020	2,182,762	2,194,498
Toyama	1,131,203	1,175,890	1,198,696	1,250,639
Ishikawa	1,208,789	1,271,549	1,268,219	1,286,869
Fukui	787,995	797,662	796,686	810,843
Yamanashi	841,432	853,072	846,606	857,256
Nagano	3,284,352	4,376,423	5,469,723	6,371,312
Gifu	2,092,344	2,139,534	2,132,576	2,153,815
Shizuoka	3,946,736	4,077,015	4,083,761	4,079,816
Aichi	10,383,697	10,671,784	10,969,487	12,225,585
Mie	1,832,072	1,860,003	1,847,901	1,859,712
Shiga	1,406,632	1,436,902	1,429,296	1,446,381
Kyoto	2,891,224	2,962,949	2,973,136	3,019,349
Osaka	12,229,891	12,617,342	12,654,361	13,038,971
Hyogo	5,726,188	5,811,531	5,756,897	5,810,675
Nara	1,367,343	1,403,451	1,400,488	1,419,106
Wakayama	929,237	933,927	922,017	923,012
Tottori	541,380	545,606	539,723	545,170
Shimane	668,920	675,109	670,606	673,139
Okayama	1,970,231	1,999,420	1,987,743	2,008,885
Hiroshima	3,550,125	3,706,437	3,758,842	3,906,218
Yamaguchi	1,416,291	1,433,223	1,441,904	1,451,755
Tokushima	730,836	745,077	741,748	752,065
Kagawa	1,034,491	1,042,825	1,033,783	1,072,141
Ehime	1,414,327	1,436,236	1,421,837	1,433,787
Kochi	695,020	697,685	687,451	688,270
Fukuoka	11,669,800	12,299,166	12,931,377	13,359,537
Saga	809,684	819,223	813,963	821,062
Nagasaki	1,333,284	1,342,954	1,322,466	1,327,044
Kumamoto	1,837,404	1,861,362	1,844,288	1,858,478
Oita	1,151,247	1,159,468	1,151,029	1,159,444
Miyazaki	1,062,780	1,073,284	1,064,755	1,069,923
Kagoshima	1,568,619	1,587,702	1,579,208	1,599,568
Okinawa	1,580,520	1,591,049	1,577,360	1,626,298
<b>Total</b>	<b>195,054,893</b>	<b>203,334,962</b>	<b>210,749,596</b>	<b>221,918,117</b>

\*Compiled by TCA based on *Voice Communications Usage in Japan Seen from Volume of Communications Traffic State* published by the Ministry of Internal Affairs and Communications

## 2-1-5 Trends in Number of Domestic Leased Circuits

(Thousand circuits)

	FY2019	FY2020	FY2021	FY2022	FY2023
General Leased Circuits (Frequency Band Use)	192	191	183	177	169
General Leased Circuits (Code Transmission)	18	17	17	16	16
High-Speed Digital Transmission Services	43	42	37	31	26

\*Compiled by TCA based on the *Information and Communications Statistics Database* of the Ministry of Internal Affairs and Communications

## 2-1-6 Trends in Number of Broadband Service Contracts, etc.

(Contracts)

		FY2021	FY2022	FY2023	FY2024
Internet connection service (for fixed communication)	(total of 56 providers)	43,264,324	42,023,733	41,366,457	41,551,778
Internet connection service (for mobile communication)	(total of 30 providers)	196,804,468	198,344,558	202,581,212	203,103,508
FTTH access service	(total of 320 providers)	37,697,693	39,522,187	40,346,221	40,994,746
DSL access service	(total of 6 providers)	689,816	356,891	228,001	36,076
CATV access service	(total of 167 providers)	6,401,091	6,271,301	6,126,643	6,008,792
FWA access service	(total of 15 providers)	3,074	1,419	1,206	1,049
BWA access service	(total of 110 providers)	79,731,989	84,276,055	87,911,796	91,493,037
3.9-4G mobile phone terminals packet communications service	(total of 5 providers)	139,054,534	127,379,501	118,760,727	111,477,399
5G mobile phone terminals packet communications service	(total of 5 providers)	45,018,488	69,808,822	92,366,966	12,066,635
Local 5G service	(total of 18 providers)	49	136	2,449	4,062
Mobile Phone and PHS terminal Internet connection service	(total of 5 providers)	203,269,615	210,702,213	221,893,209	227,537,013
Public radio LAN access service	(total of 19 providers)	101,005,848	99,720,918	103,597,350	105,234,658
IP-VPN service	(total of 50 providers)	660,218	655,856	642,114	628,074
Wide-area Ethernet service	(total of 82 providers)	678,499	697,518	704,587	704,025

\*Compiled by TCA based on the *Information and Communications Statistics Database* of the Ministry of Internal Affairs and Communications

## 2-2 Situation of Traffic

### 2-2-1 Situation of Total Traffic

#### 2-2-1-1 Trends in Total Number of Calls

(100 Million calls)

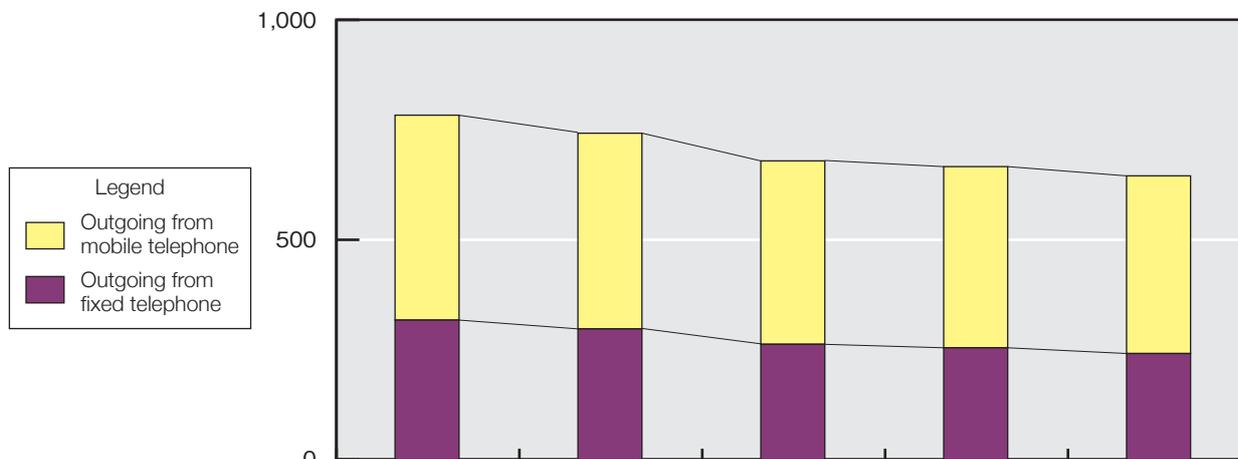
Incoming \ Outgoing	Subscriber Telephone/ISDN					IP Phone				
	FY2019	FY2020	FY2021	FY2022	FY2023	FY2019	FY2020	FY2021	FY2022	FY2023
Subscriber Telephone	53.8	42.3	37.3	32.9	28.2	1.2	1.2	1.2	1.3	1.2
Public Telephone	0.5	0.4	0.3	0.3	0.2					
ISDN	57.3	47.3	42.1	36.6	30.5					
IP Phone	121.1	110.2	108.7	106.1	100.8	12.0	11.3	13.5	14.0	13.7
Mobile Phone/PHS	45.6	39.6	37.9	35.9	31.6	72.3	69.9	71.7	72.9	69.1
<b>Total</b>	<b>278.2</b>	<b>239.7</b>	<b>226.3</b>	<b>211.9</b>	<b>191.4</b>	<b>85.5</b>	<b>82.4</b>	<b>86.4</b>	<b>88.2</b>	<b>83.9</b>

Incoming \ Outgoing	Mobile Phone/PHS					Total				
	FY2019	FY2020	FY2021	FY2022	FY2023	FY2019	FY2020	FY2021	FY2022	FY2023
Subscriber Telephone	19.5	17.4	16.3	13.1	12.8	132.2	108.6	97.2	84.2	73.0
Public Telephone										
ISDN										
IP Phone	31.3	32.1	34.8	36.9	36.5	164.3	153.5	157.0	157.0	151.0
Mobile Phone/PHS	327.4	307.1	302.8	295.0	277.8	445.3	416.5	412.4	403.8	378.5
<b>Total</b>	<b>378.1</b>	<b>356.5</b>	<b>353.9</b>	<b>344.9</b>	<b>327.1</b>	<b>741.8</b>	<b>678.7</b>	<b>666.6</b>	<b>645.0</b>	<b>602.4</b>

\*Compiled by TCA based on *Voice Communications Usage in Japan Seen from Volume of Communications Traffic State* published by the Ministry of Internal Affairs and Communications

#### 2-2-1-2 Trends in Total Number of Calls between Fixed Telephone and Mobile Telephone

(100 Million calls)



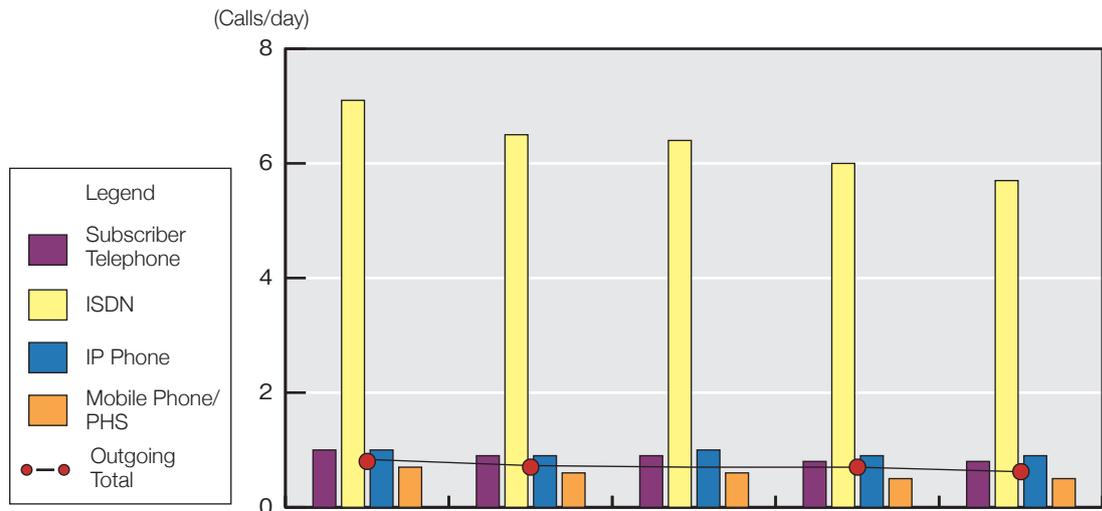
(100 Million calls)

Outgoing	Incoming	FY2019	FY2020	FY2021	FY2022	FY2023
Fixed	Fixed	245.9	212.7	203.1	191.2	174.6
Fixed	Mobile	50.8	49.5	51.1	50.0	49.3
Mobile	Mobile	327.4	307.1	302.8	295.0	277.8
Mobile	Fixed	117.9	109.5	109.6	108.8	100.7
<b>Total</b>		<b>741.8</b>	<b>678.7</b>	<b>666.6</b>	<b>645.0</b>	<b>602.4</b>

Note: Outgoing from fixed telephone: Outgoing from subscriber telephones, public telephones, ISDN and IP phones  
 Outgoing from mobile telephone: Outgoing from mobile phones and PHS  
 Incoming to fixed telephone: Incoming to subscriber telephones, ISDN and IP phones  
 Incoming to mobile telephone: Incoming to mobile phones and PHS

\*Compiled by TCA based on *Voice Communications Usage in Japan Seen from Volume of Communications Traffic State* published by the Ministry of Internal Affairs and Communications

## 2-2-1-3 Trends in Daily Number of Calls per Subscription (Contract)



(Calls / day)

Outgoing	FY2019	FY2020	FY2021	FY2022	FY2023
Subscriber Telephone	1.0	0.9	0.9	0.8	0.8
ISDN	7.1	6.5	6.4	6.0	5.7
IP Phone	1.0	0.9	1.0	0.9	0.9
Mobile Phone/PHS	0.7	0.6	0.6	0.5	0.5
<b>Outgoing Total</b>	<b>0.8</b>	<b>0.7</b>	<b>0.7</b>	<b>0.7</b>	<b>0.6</b>

Note: The categories of respective outgoing calls are as listed below. For example, the number of outgoing calls from subscriber telephones shows the total number of calls outgoing from subscriber telephones and destined for fixed telephones, IP phones, mobile phones, and PHS terminals. Since the actual number of outgoing calls from fixed telephones and destined for IP phones, mobile phones and PHS terminals cannot be identified, the number of those calls is calculated according to the ratio to the number of outgoing calls from fixed telephones and destined for fixed telephones.

Outgoing	ISDN	Cellular Telephone	PHS
Incoming	Fixed Telephone, IP Phone, Mobile Phone, PHS	Fixed Telephone, IP Phone, Mobile Phone, PHS	Fixed Telephone, IP Phone, Mobile Phone, PHS

\*Compiled by TCA based on *Voice Communications Usage in Japan Seen from Volume of Communications Traffic State* published by the Ministry of Internal Affairs and Communications

## 2-2-1-4 Trends in Total Call Duration

(Million hours)

Outgoing \ Incoming	Subscriber Telephone/ISDN					IP Phone				
	FY2019	FY2020	FY2021	FY2022	FY2023	FY2019	FY2020	FY2021	FY2022	FY2023
Subscriber Telephone	154.3	130.1	111.6	95.7	79.9	4.2	4.3	4.1	4.2	4.1
Public Telephone	1.1	1.0	0.9	0.8	0.6					
ISDN	138.4	115.2	100.7	89.0	72.9					
IP Phone	327.5	304.2	286.8	269.3	244.5	48.2	48.7	52.4	52.8	48.9
Mobile Phone/PHS	183.9	183.9	178.6	167.9	145.7	303.2	334.1	355.0	345.1	250.7
<b>Total</b>	<b>805.2</b>	<b>734.3</b>	<b>678.6</b>	<b>622.7</b>	<b>543.5</b>	<b>355.6</b>	<b>387.1</b>	<b>411.5</b>	<b>402.2</b>	<b>303.7</b>

Outgoing \ Incoming	Mobile Phone/PHS					Total				
	FY2019	FY2020	FY2021	FY2022	FY2023	FY2019	FY2020	FY2021	FY2022	FY2023
Subscriber Telephone	59.3	60.3	55.5	45.1	42.6	357.3	310.9	272.8	234.8	200.0
Public Telephone										
ISDN										
IP Phone	97.8	114.1	121.4	127.9	125.0	473.5	466.9	460.7	449.9	418.4
Mobile Phone/PHS	1,607.1	1,736.2	1,707.5	1,623.3	1,496.7	2,094.2	2,254.2	2,241.1	2,136.3	1,893.0
<b>Total</b>	<b>1,764.2</b>	<b>1,910.6</b>	<b>1,884.5</b>	<b>1,796.2</b>	<b>1,664.3</b>	<b>2,925.0</b>	<b>3,032.1</b>	<b>2,974.6</b>	<b>2,821.1</b>	<b>2,511.5</b>

\*Compiled by TCA based on *Voice Communications Usage in Japan Seen from Volume of Communications Traffic State* published by the Ministry of Internal Affairs and Communications

2-2-1-5 Trends in Average Call Duration per Call

(Seconds)

Incoming \ Outgoing	Subscriber Telephone/ISDN					IP Phone				
	FY2019	FY2020	FY2021	FY2022	FY2023	FY2019	FY2020	FY2021	FY2022	FY2023
Subscriber Telephone	103.2	110.7	107.7	104.7	102.0	126.0	129.0	123.0	116.3	123.0
Public Telephone	79.2	90.0	108.0	96.0	108.0					
ISDN	87.0	87.7	86.1	87.5	86.0					
IP Phone	97.4	99.4	95.0	91.4	87.3	144.6	155.2	139.7	135.8	128.5
Mobile Phone/PHS	145.2	167.2	169.6	168.4	166.0	151.0	172.1	178.2	170.4	130.6
<b>Total</b>	<b>104.2</b>	<b>110.3</b>	<b>108.0</b>	<b>105.8</b>	<b>102.2</b>	<b>149.7</b>	<b>169.1</b>	<b>171.5</b>	<b>164.2</b>	<b>130.3</b>

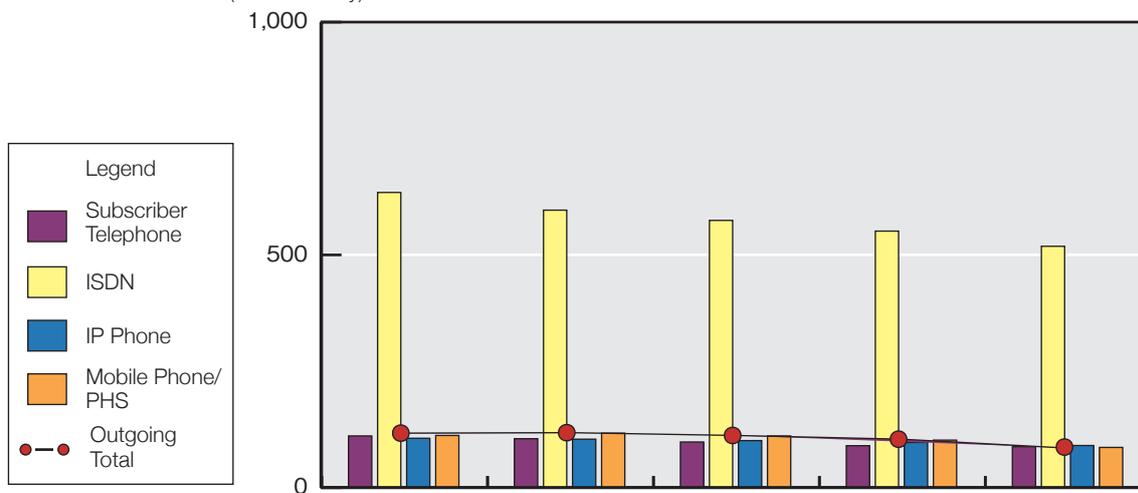
Incoming \ Outgoing	Mobile Phone/PHS					Total				
	FY2019	FY2020	FY2021	FY2022	FY2023	FY2019	FY2020	FY2021	FY2022	FY2023
Subscriber Telephone	109.5	124.8	122.6	123.9	119.8	97.3	103.1	101.0	100.4	98.6
Public Telephone										
ISDN										
IP Phone	112.5	128.0	125.6	124.8	123.3	103.7	109.5	105.6	103.2	99.8
Mobile Phone/PHS	176.7	203.5	203.0	198.1	194.0	169.3	194.8	195.6	190.5	180.0
<b>Total</b>	<b>168.0</b>	<b>192.9</b>	<b>191.7</b>	<b>187.5</b>	<b>183.2</b>	<b>142.0</b>	<b>160.8</b>	<b>160.6</b>	<b>157.5</b>	<b>150.1</b>

Note: Total Call Duration (seconds) ÷ Total Number of Calls (calls)

\*Compiled by TCA based on Voice Communications Usage in Japan Seen from Volume of Communications Traffic State published by the Ministry of Internal Affairs and Communications

2-2-1-6 Trends in Daily Call Duration per Subscription (Contract)

(Seconds/day)



Outgoing	FY2019	FY2020	FY2021	FY2022	FY2023
Subscriber Telephone	111	105	98	90	83
ISDN	634	596	574	551	517
IP Phone	106	104	101	97	90
Mobile Phone/PHS	112	117	111	102	86
<b>Outgoing Total</b>	<b>117</b>	<b>118</b>	<b>112</b>	<b>104</b>	<b>89</b>

Note: The category of outgoing call duration and calculation method are the same as those in note of 2-2-1-3.

\*Compiled by TCA based on Voice Communications Usage in Japan Seen from Volume of Communications Traffic State published by the Ministry of Internal Affairs and Communications

## 2-2-2 Situation of Traffic of Subscriber Telephone/ISDN

## 2-2-2-1 Situation of Calls by Time Zone

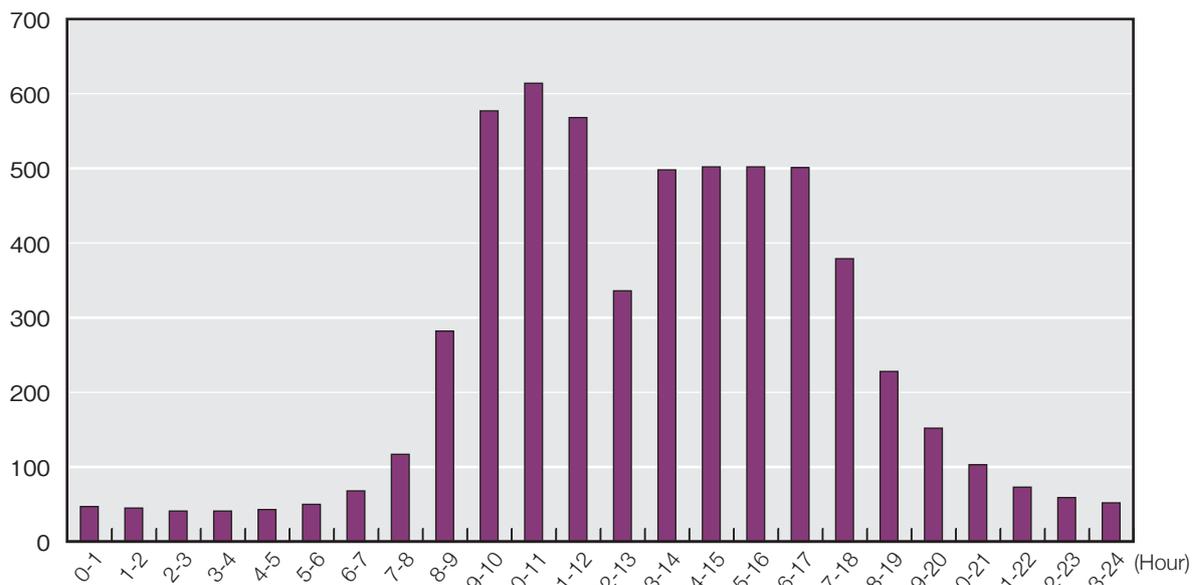
## 2-2-2-1-1 Trends in Number of Calls by Time Zone

(Million calls)

Time Zone	FY2019	FY2020	FY2021	FY2022	FY2023
0-1	87	71	63	57	47
1-2	79	66	58	54	45
2-3	71	61	55	49	41
3-4	67	58	52	47	41
4-5	68	60	55	49	43
5-6	81	73	65	59	50
6-7	113	97	87	80	68
7-8	202	164	150	133	117
8-9	509	415	371	329	282
9-10	1,085	869	768	677	577
10-11	1,132	919	816	717	614
11-12	1,055	862	763	667	568
12-13	626	519	462	402	336
13-14	925	757	673	587	498
14-15	932	767	676	591	502
15-16	933	768	678	592	502
16-17	939	760	671	591	501
17-18	774	597	525	455	379
18-19	503	381	334	282	228
19-20	344	260	228	190	152
20-21	226	175	154	129	103
21-22	144	109	95	87	73
22-23	109	82	73	70	59
23-24	95	74	66	62	52
<b>Total</b>	<b>11,103</b>	<b>8,966</b>	<b>7,938</b>	<b>6,952</b>	<b>5,871</b>

## Number of Calls by Time Zone (FY2023)

(Million calls)



\*Compiled by TCA based on *Voice Communications Usage in Japan Seen from Volume of Communications Traffic State* published by the Ministry of Internal Affairs and Communications

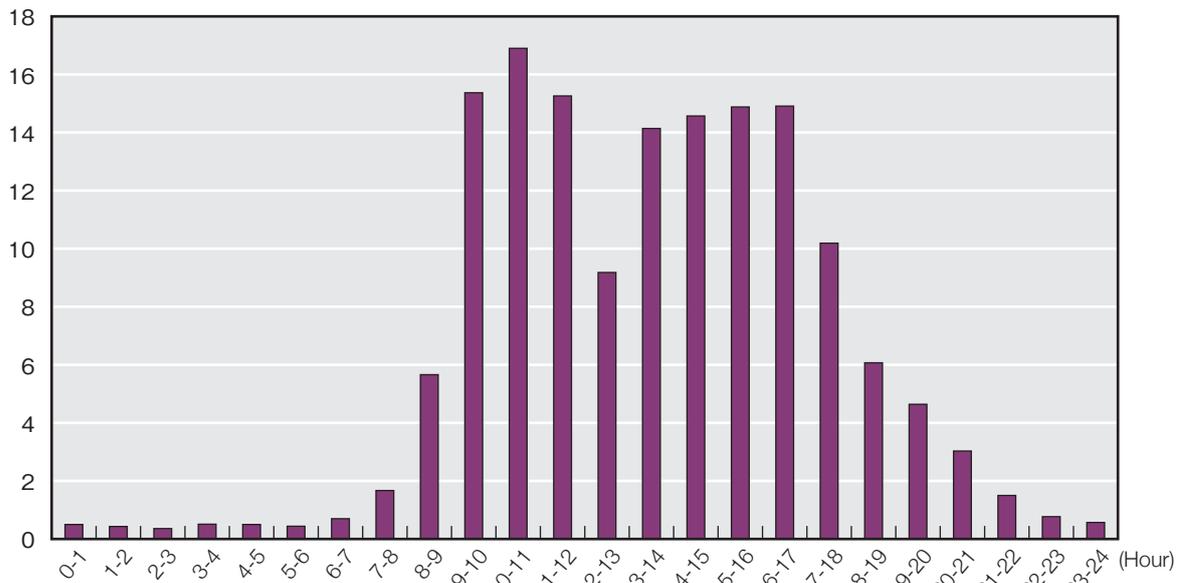
2-2-2-1-2 Trends in Call Duration by Time Zone

(Million hours)

Time Zone	FY2019	FY2020	FY2021	FY2022	FY2023
0-1	1.07	0.78	0.75	0.62	0.50
1-2	0.87	0.67	0.57	0.54	0.43
2-3	0.74	0.57	0.49	0.46	0.36
3-4	1.01	0.79	0.68	0.63	0.51
4-5	1.24	0.68	0.56	0.59	0.50
5-6	0.86	0.71	0.63	0.57	0.44
6-7	1.43	1.12	0.97	0.86	0.70
7-8	3.44	2.66	2.36	2.04	1.67
8-9	11.37	9.29	8.10	6.97	5.66
9-10	29.05	24.05	21.06	18.42	15.37
10-11	30.71	26.48	23.03	20.11	16.90
11-12	27.51	23.81	20.73	18.17	15.26
12-13	16.53	14.53	12.67	11.13	9.18
13-14	25.39	22.25	19.36	16.96	14.14
14-15	26.02	22.97	19.88	17.39	14.57
15-16	26.68	23.35	20.28	17.76	14.88
16-17	27.38	23.19	20.19	17.75	14.91
17-18	21.24	16.79	14.42	12.48	10.19
18-19	14.09	10.81	9.17	7.68	6.07
19-20	11.08	8.64	7.25	5.96	4.64
20-21	7.85	6.05	4.92	3.99	3.03
21-22	3.90	2.88	2.31	1.96	1.50
22-23	1.94	1.31	1.09	0.99	0.77
23-24	1.27	0.90	0.77	0.71	0.57
<b>Total</b>	<b>292.71</b>	<b>245.27</b>	<b>212.29</b>	<b>184.73</b>	<b>152.74</b>

Duration by Time Zone (FY2023)

(Million hours)

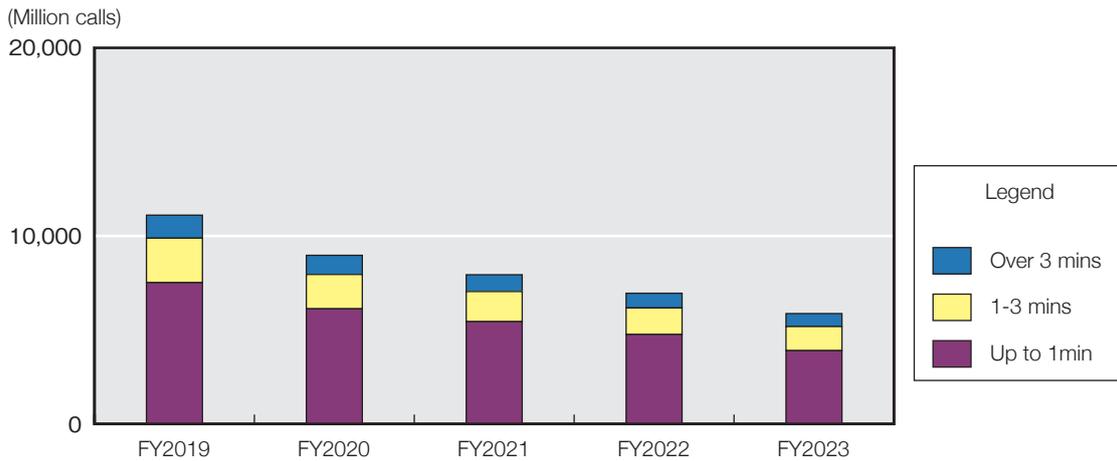


\*Compiled by TCA based on Voice Communications Usage in Japan Seen from Volume of Communications Traffic State published by the Ministry of Internal Affairs and Communications

2-2-2-2 Situation of Number of Calls by Duration

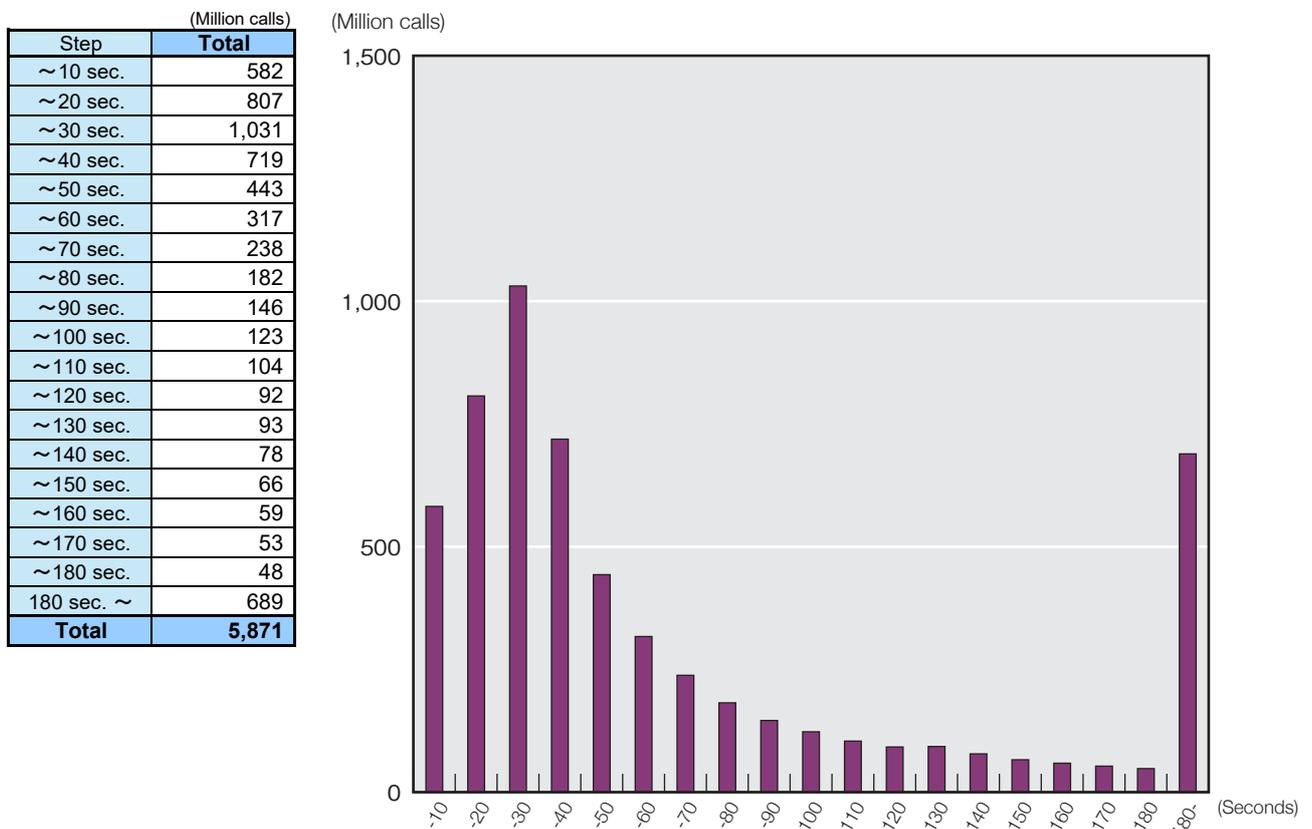
2-2-2-2-1 Trends in Number of Calls by Duration

(Million calls)					
Duration	FY2019	FY2020	FY2021	FY2022	FY2023
up to 1 min	7,515	6,122	5,442	4,761	3,899
1-3 mins	2,364	1,828	1,601	1,408	1,282
over 3 mins	1,225	1,019	892	782	689
<b>Total</b>	<b>12,961</b>	<b>11,103</b>	<b>8,966</b>	<b>7,938</b>	<b>5,871</b>



\*Compiled by TCA based on *Voice Communications Usage in Japan Seen from Volume of Communications Traffic State* published by the Ministry of Internal Affairs and Communications

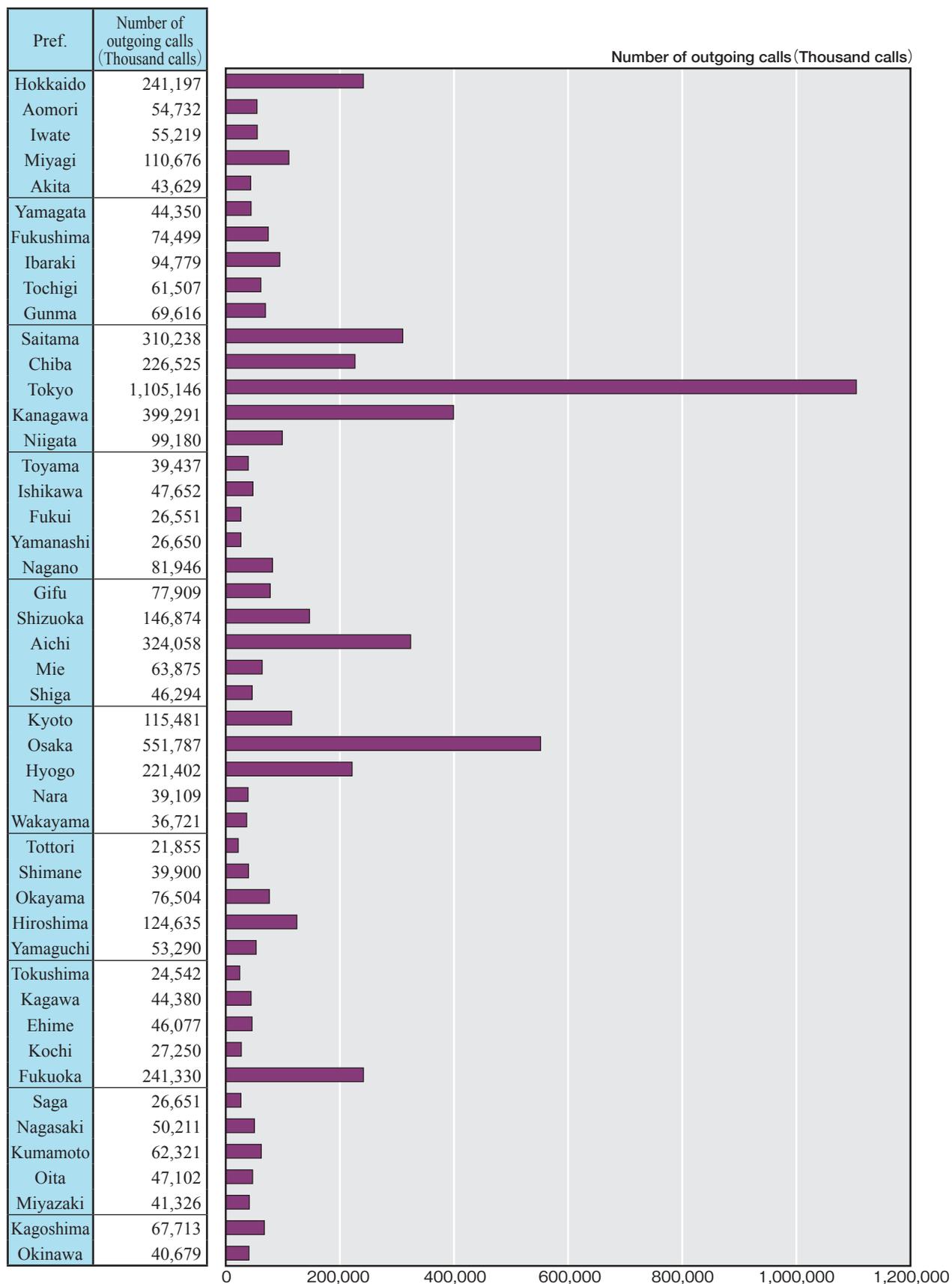
2-2-2-2-2 Number of Calls by Duration (10-second steps) (FY2023)



\*Compiled by TCA based on *Voice Communications Usage in Japan Seen from Volume of Communications Traffic State* published by the Ministry of Internal Affairs and Communications

2-2-2-3 Situation of Calls by Prefecture

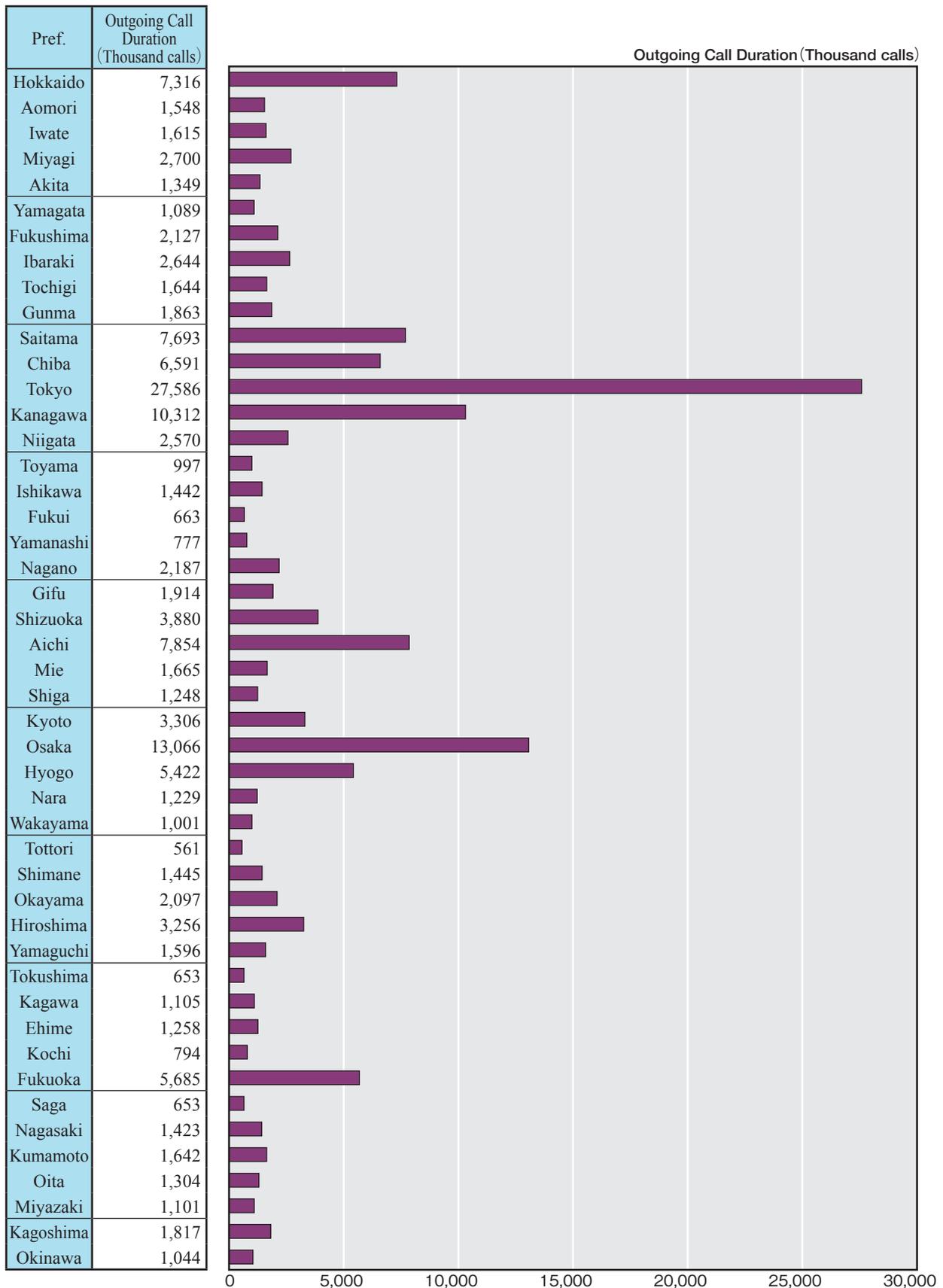
2-2-2-3-1 Number of Outgoing Calls by Prefecture (FY2023)



Note: Data on both incoming and outgoing calls was published until FY2022, but following ministerial ordinance revisions accompanying the PSTN migration, traffic reports now only show location of origin for calls; consequently, only data for outgoing calls by prefecture is shown here.

\*Compiled by TCA based on *Voice Communications Usage in Japan Seen from Volume of Communications Traffic State* published by the Ministry of Internal Affairs and Communications

## 2-2-2-3-2 Duration of Outgoing Calls by Prefecture (FY2023)



\*Compiled by TCA based on *Voice Communications Usage in Japan Seen from Volume of Communications Traffic State* published by the Ministry of Internal Affairs and Communications

2-2-3 Situation of Traffic of IP Phones

2-2-3-1 Trends in Number of Telephone Numbers in Use and Communications Traffic

	FY2019	FY2020	FY2021	FY2022	FY2023
Total number of numbers in use (million numbers)	44.13 (1.7%)	44.67 (1.2%)	45.35 (1.5%)	45.69 (0.8%)	45.69 (0.0%)
(0ABJ-IP phone)	35.21 (2.2%)	35.68 (1.3%)	35.94 (0.7%)	36.12 (0.5%)	36.10 (▲0.0%)
(050-IP phone)	8.92 (▲0.3%)	8.99 (0.7%)	9.41 (4.7%)	9.57 (1.7%)	9.59 (0.1%)
Number of calls (billion calls)	16.55 (0.1%)	15.47 (▲6.5%)	15.82 (2.3%)	15.83 (0.0%)	15.22 (▲3.9%)
From IP phones to subscriber telephones, ISDN, IP phones, mobile phones, and PHS phones	16.43 (0.2%)	15.35 (▲6.6%)	15.70 (2.3%)	15.70 (▲0.0%)	15.10 (▲3.8%)
From fixed-line services to IP phones	0.12 (▲8.9%)	0.12 (2.4%)	0.12 (5.4%)	0.13 (4.7%)	0.12 (▲6.9%)
From mobile and PHS phones to IP phones	7.23 (0.5%)	6.99 (▲3.4%)	7.17 (2.6%)	7.29 (1.6%)	6.91 (▲5.3%)
Duration of calls (million hours)	477.7 (▲2.2%)	471.2 (▲1.4%)	464.7 (▲1.4%)	454.2 (▲2.3%)	422.5 (▲7.0%)
From IP phones to subscriber telephones, ISDN, IP phones, mobile phones, and PHS phones	473.5 (▲2.1%)	466.9 (▲1.4%)	460.7 (▲1.3%)	449.9 (▲2.3%)	418.4 (▲7.0%)
From fixed-line services to IP phones	4.2 (▲10.0%)	4.3 (2.3%)	4.1 (▲5.1%)	4.2 (4.0%)	4.1 (▲3.7%)
From mobile and PHS phones to IP phones	303.2 (9.6%)	334.1 (10.2%)	355.0 (6.2%)	345.1 (▲2.8%)	250.7 (▲27.4%)

Notes: Figures in parentheses indicate rates of increase/decrease over the previous fiscal year.

\*Compiled by TCA based on *Voice Communications Usage in Japan Seen from Volume of Communications Traffic State* published by the Ministry of Internal Affairs and Communications

## 2-2-4 Situation of Traffic of Mobile and PHS Phones

## 2-2-4-1 Situation of Calls by Time Zone

## 2-2-4-1-1 Trends in Number of Calls by Time Zone

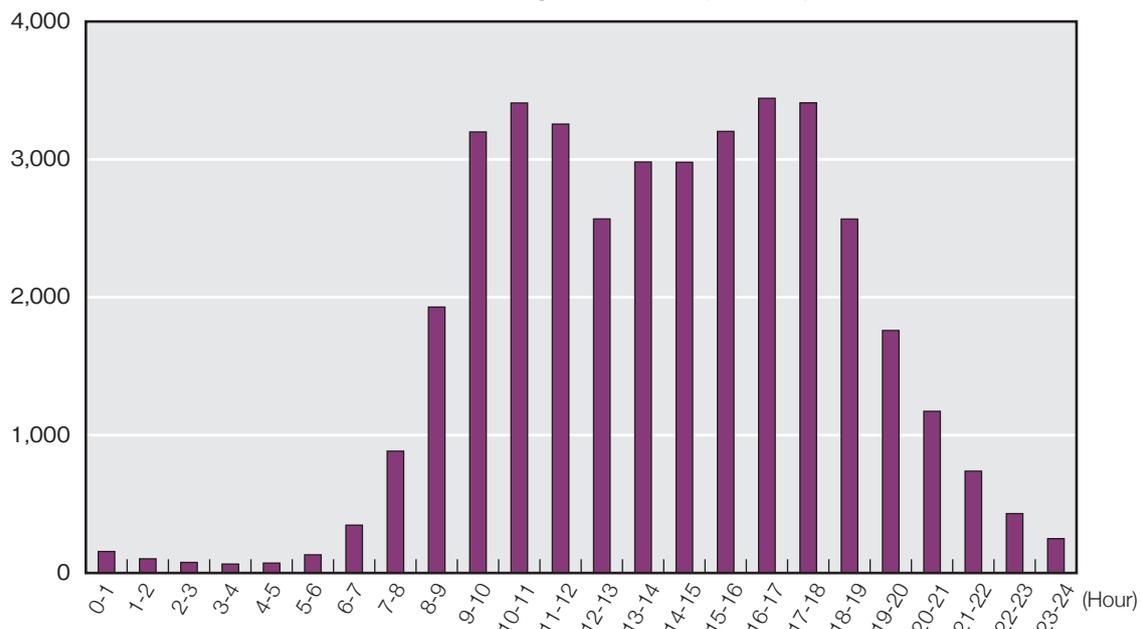
(Calls to and from mobile / PHS phones)

(Million calls)

Time Zone	FY2019	FY2020	FY2021	FY2022	FY2023
0-1	248	176	160	168	156
1-2	164	118	108	114	103
2-3	121	90	83	87	77
3-4	100	78	74	75	65
4-5	104	86	82	81	72
5-6	174	149	146	145	132
6-7	440	373	373	371	347
7-8	1,073	929	943	943	884
8-9	2,222	2,021	2,053	2,049	1,929
9-10	3,530	3,394	3,431	3,389	3,199
10-11	3,768	3,728	3,711	3,628	3,409
11-12	3,627	3,609	3,569	3,473	3,256
12-13	3,031	2,881	2,838	2,765	2,568
13-14	3,355	3,311	3,271	3,185	2,981
14-15	3,315	3,299	3,260	3,171	2,979
15-16	3,582	3,524	3,497	3,407	3,203
16-17	3,889	3,761	3,742	3,651	3,443
17-18	4,118	3,820	3,755	3,650	3,410
18-19	3,351	2,969	2,890	2,794	2,567
19-20	2,393	2,044	1,995	1,925	1,759
20-21	1,670	1,375	1,334	1,285	1,173
21-22	1,107	857	819	806	739
22-23	679	497	464	468	431
23-24	400	289	263	269	249
<b>Total</b>	<b>46,460</b>	<b>43,379</b>	<b>42,860</b>	<b>41,899</b>	<b>39,130</b>

(Million calls)

Number of Calls by Time Zone (FY2023)



\*Compiled by TCA based on *Voice Communications Usage in Japan Seen from Volume of Communications Traffic State* published by the Ministry of Internal Affairs and Communications

2-2-4-1-2 Trends in Call Duration by Time Zone

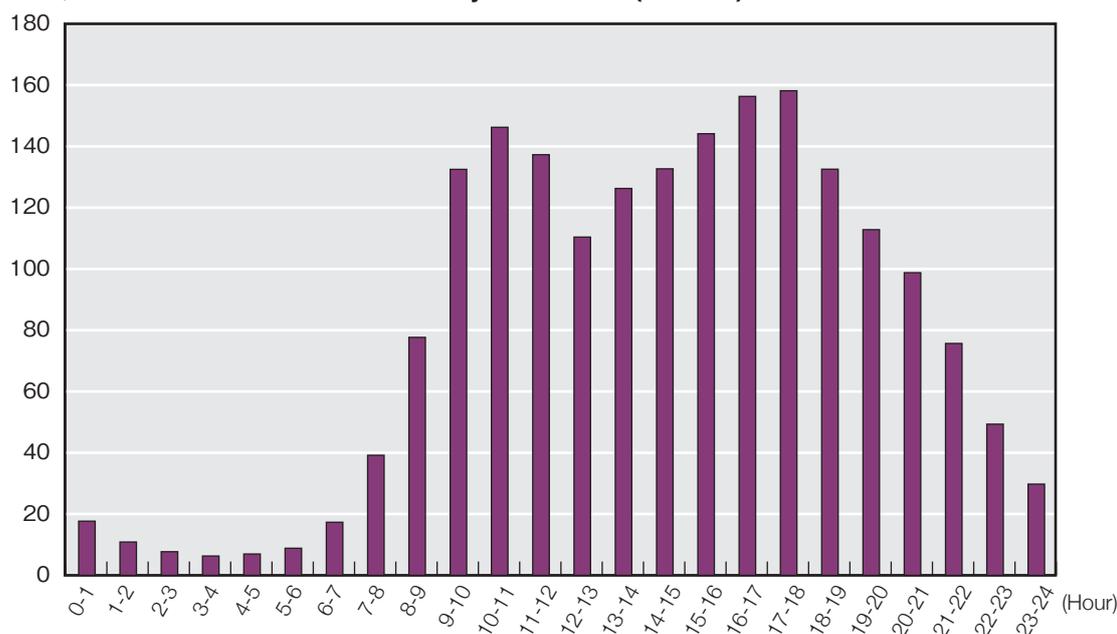
(Calls to and from mobile / PHS phones)

(Million hours)

Time Zone	FY2019	FY2020	FY2021	FY2022	FY2023
0-1	30.05	28.00	25.83	23.11	17.67
1-2	19.16	18.18	17.24	15.49	10.87
2-3	13.95	13.55	13.11	11.80	7.71
3-4	11.47	11.43	11.36	10.16	6.30
4-5	11.70	11.99	12.05	10.79	6.96
5-6	13.27	13.79	14.18	13.14	8.84
6-7	22.51	22.43	23.01	21.97	17.32
7-8	45.82	44.66	45.83	44.98	39.19
8-9	85.60	85.46	87.42	86.20	77.67
9-10	137.77	147.69	149.96	145.63	132.50
10-11	149.92	168.69	168.10	161.15	146.22
11-12	140.24	160.60	159.23	152.00	137.28
12-13	119.31	128.68	127.89	123.30	110.39
13-14	129.27	147.36	146.35	140.51	126.27
14-15	132.58	154.69	153.52	147.10	132.68
15-16	143.77	165.99	165.41	159.01	144.13
16-17	156.77	177.51	177.74	171.24	156.31
17-18	168.87	182.72	181.49	174.19	158.16
18-19	151.42	158.19	156.67	149.01	132.55
19-20	131.66	136.25	135.73	128.21	112.82
20-21	120.12	124.12	122.23	113.77	98.77
21-22	98.99	99.41	96.21	88.71	75.68
22-23	71.44	68.51	64.94	59.29	49.34
23-24	47.36	44.33	40.94	37.03	29.77
<b>Total</b>	<b>2,153.00</b>	<b>2,314.22</b>	<b>2,296.47</b>	<b>2,187.80</b>	<b>1,935.41</b>

(Million hours)

Duration by Time Zone (FY2023)

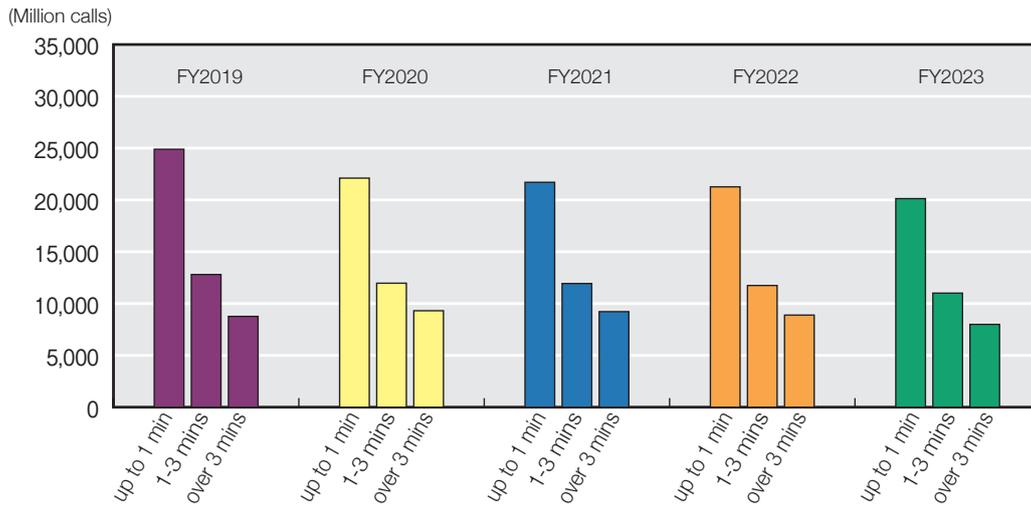


\*Compiled by TCA based on Voice Communications Usage in Japan Seen from Volume of Communications Traffic State published by the Ministry of Internal Affairs and Communications

2-2-4-2 Situation of Number of Calls by Duration

2-2-4-2-1 Trends in Number of Calls by Duration

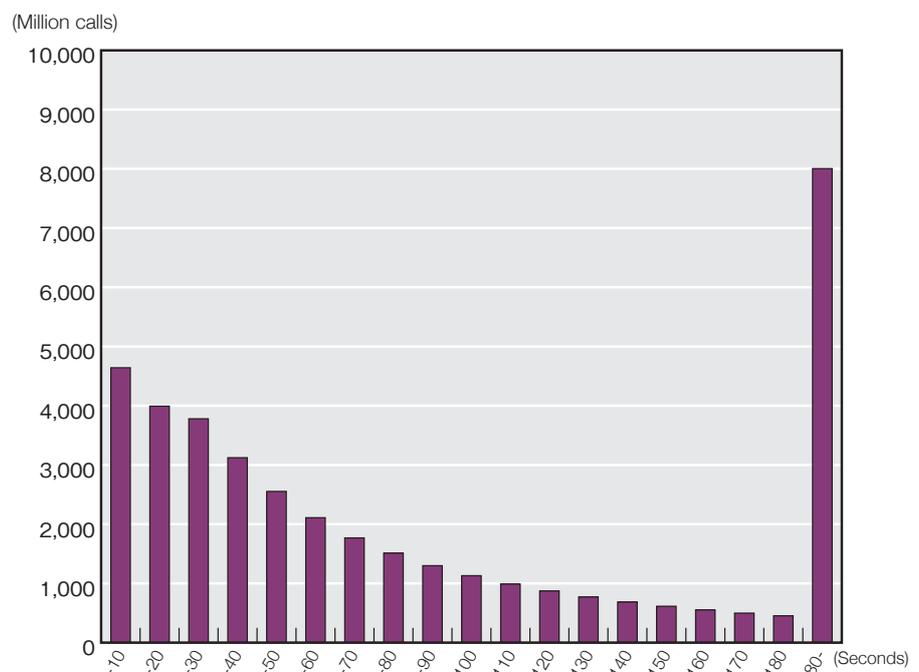
Duration	FY2019	FY2020	FY2021	FY2022	FY2023
up to 1 min	24,894	22,107	21,704	21,265	20,130
1-3 mins	12,804	11,965	11,935	11,745	11,009
over 3 mins	8,763	9,309	9,221	8,888	7,992
<b>Total</b>	<b>46,460</b>	<b>43,379</b>	<b>42,860</b>	<b>41,899</b>	<b>39,130</b>



\*Compiled by TCA based on *Voice Communications Usage in Japan Seen from Volume of Communications Traffic State* published by the Ministry of Internal Affairs and Communications

2-2-4-2-2 Number of Calls by Duration (10-second steps) (FY2023)

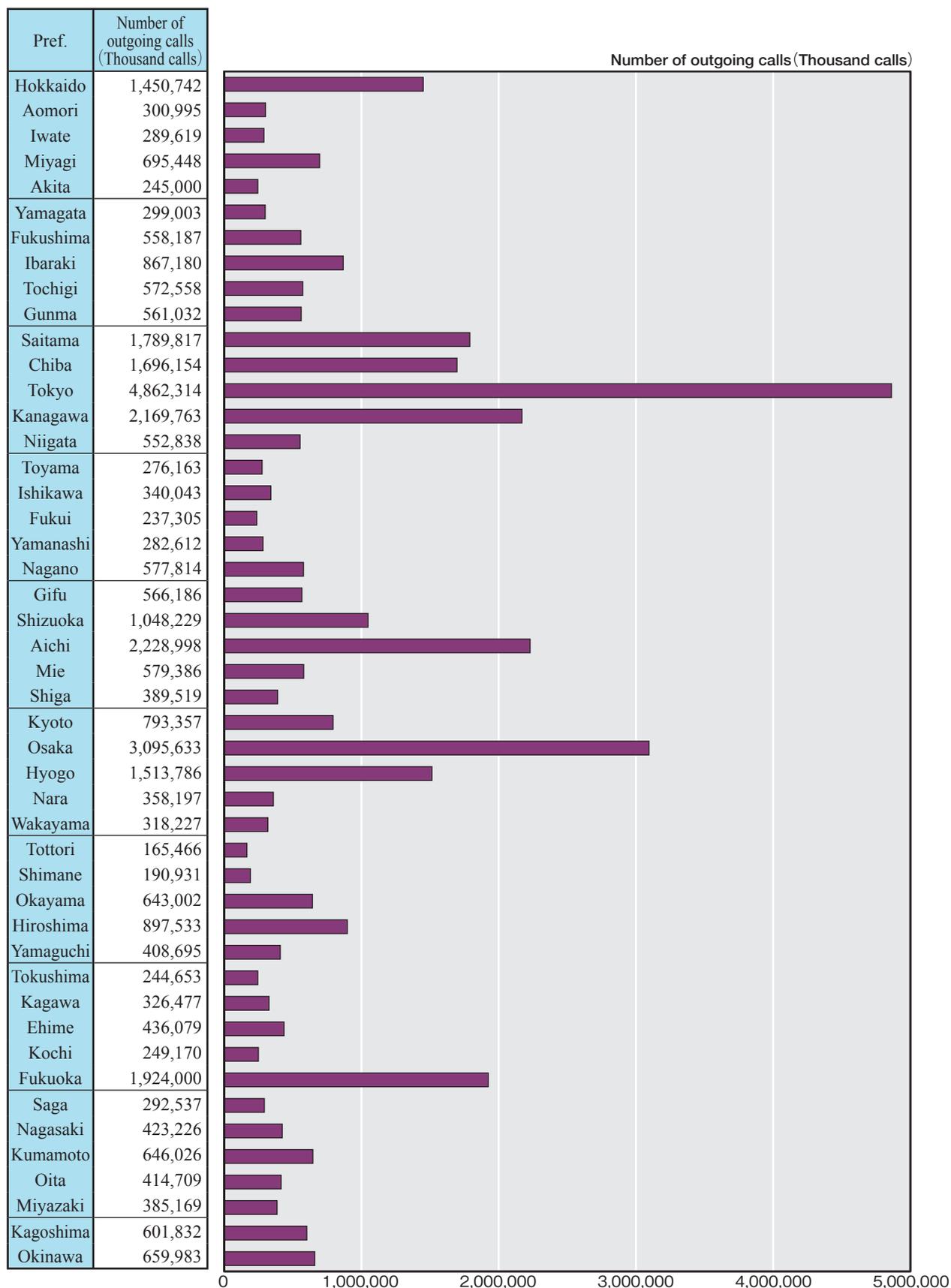
Step	Calls to and from mobile/PHS phones (Million calls)
~10 sec.	4,630
~20 sec.	3,981
~30 sec.	3,768
~40 sec.	3,111
~50 sec.	2,542
~60 sec.	2,098
~70 sec.	1,757
~80 sec.	1,500
~90 sec.	1,288
~100sec.	1,119
~110sec.	978
~120sec.	860
~130sec.	760
~140sec.	674
~150sec.	603
~160sec.	541
~170sec.	487
~180sec.	442
180sec.~	7,992
<b>Total</b>	<b>39,130</b>



\*Compiled by TCA based on *Voice Communications Usage in Japan Seen from Volume of Communications Traffic State* published by the Ministry of Internal Affairs and Communications

2-2-4-3 Situation of Calls by Prefecture

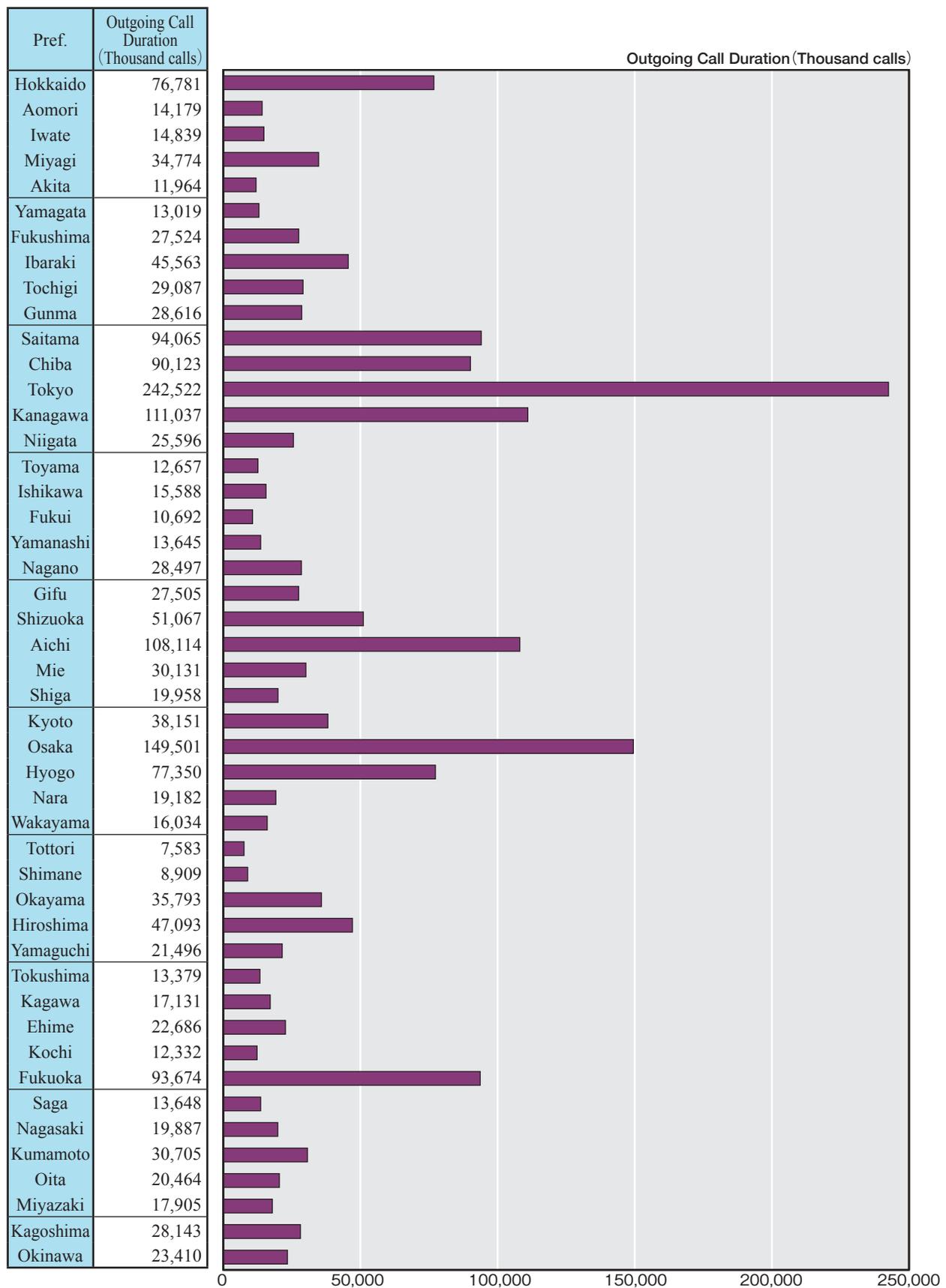
2-2-4-3-1 Number of Outgoing Calls by Prefecture (FY2023)



Note: Data on both incoming and outgoing calls was published until FY2022, but following ministerial ordinance revisions accompanying the PSTN migration, traffic reports now only show location of origin for calls; consequently, only data for outgoing calls by prefecture is shown here.

\*Compiled by TCA based on *Voice Communications Usage in Japan Seen from Volume of Communications Traffic State* published by the Ministry of Internal Affairs and Communications

## 2-2-4-3-2 Duration of Outgoing Calls by Prefecture (FY2023)



\*Compiled by TCA based on *Voice Communications Usage in Japan Seen from Volume of Communications Traffic State* published by the Ministry of Internal Affairs and Communications

2-2-5 Situation of Traffic of International Telephone Services

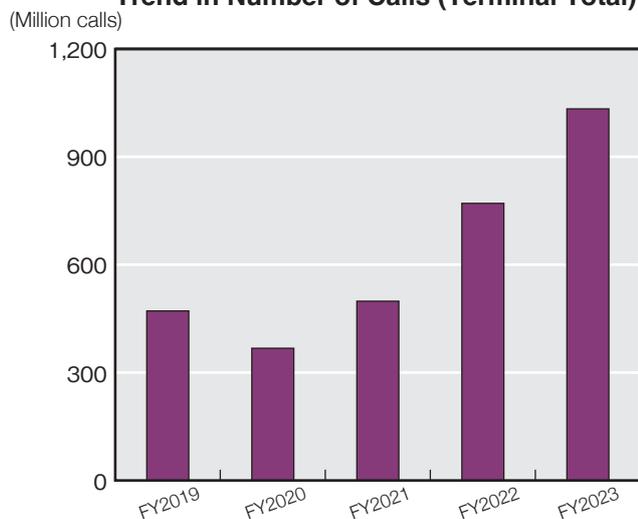
2-2-5-1 Trends in Number and Duration of International Telephone Calls

(Million calls, Million minutes)

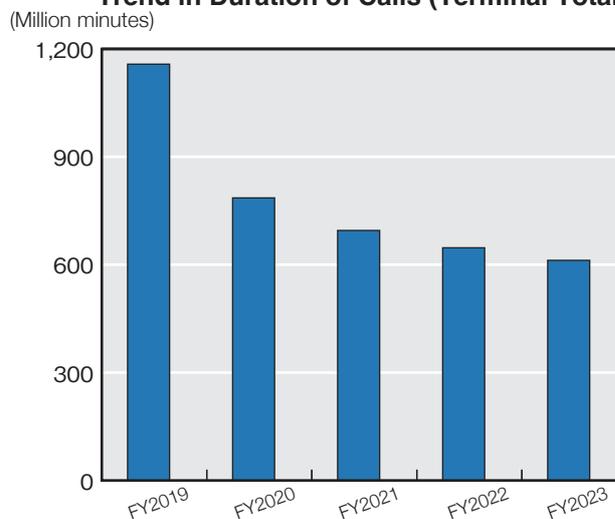
Category		FY2019	FY2020	FY2021	FY2022	FY2023
Number of Calls	Outgoing	137.9	50.0	36.4	38.8	45.0
	Incoming	333.5	317.6	462.0	731.9	988.3
	<b>Total</b>	<b>471.4</b>	<b>367.6</b>	<b>498.5</b>	<b>770.6</b>	<b>1,033.3</b>
Duration of calls	Outgoing	496.5	258.5	174.2	161.1	159.4
	Incoming	661.1	527.1	520.9	485.9	452.7
	<b>Total</b>	<b>1,157.6</b>	<b>785.7</b>	<b>695.2</b>	<b>647.0</b>	<b>612.1</b>

\*Compiled by TCA based on Voice Communications Usage in Japan Seen from Volume of Communications Traffic State published by the Ministry of Internal Affairs and Communications

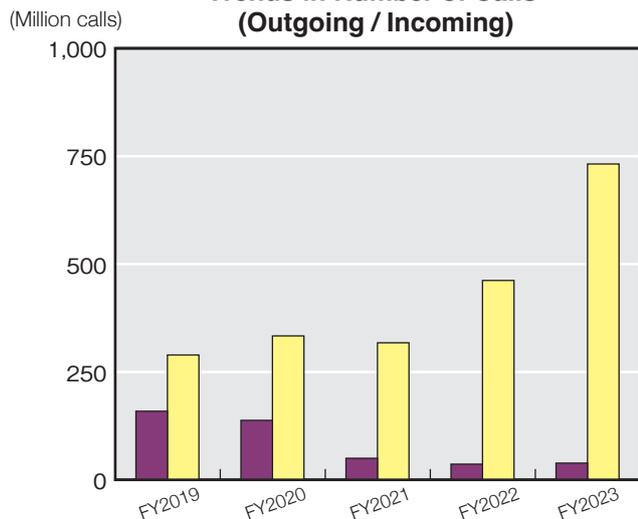
**Trend in Number of Calls (Terminal Total)**



**Trend in Duration of Calls (Terminal Total)**

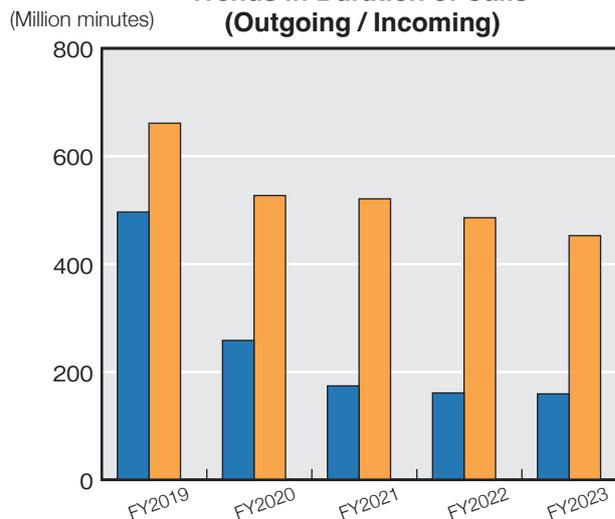


**Trends in Number of Calls (Outgoing / Incoming)**



Legend ■ Outgoing ■ Incoming

**Trends in Duration of Calls (Outgoing / Incoming)**



Legend ■ Outgoing ■ Incoming

## 2-2-5-2 Situation of Duration of International Calls by Country/Region (Top Countries/Regions Shown)

## 2-2-5-2-1 Trends in Share of Outgoing Call Duration by Country/Region

Ranking	FY2019		FY2020		FY2021		FY2022		FY2023	
1	U.S.A. (mainland)	19.83%	U.S.A. (mainland)	35.13%	U.S.A. (mainland)	33.04%	U.S.A. (mainland)	34.28%	U.S.A. (mainland)	27.81%
2	Hong Kong	19.19%	China	16.15%	China	17.07%	China	14.45%	China	12.71%
3	China	16.46%	Hong Kong	8.86%	Korea	7.09%	Korea	7.56%	Bangladesh	7.97%
4	Korea	5.16%	Korea	6.26%	Hong Kong	4.53%	Hong Kong	3.51%	Korea	7.80%
5	Thailand	3.49%	Thailand	3.51%	Philippines	3.77%	Thailand	3.48%	Taiwan	6.82%
6	Philippines	3.34%	Philippines	3.49%	Thailand	3.77%	Philippines	3.13%	Thailand	3.18%
7	Taiwan	3.02%	Taiwan	3.20%	Bangladesh	3.38%	Taiwan	3.07%	Hong Kong	2.85%
8	Singapore	2.85%	Singapore	2.97%	Taiwan	3.36%	Eritrea	2.84%	Australia	2.74%
9	India	2.69%	U.K.	2.01%	Singapore	2.46%	Singapore	2.51%	India	2.60%
10	U.K.	2.01%	India	1.71%	U.K.	2.02%	U.K.	2.37%	Philippines	2.37%
11	Germany	1.98%	Germany	1.68%	Germany	1.58%	Bangladesh	2.29%	U.K.	2.35%
12	Bangladesh	1.61%	France	1.30%	Vietnam	1.41%	Australia	2.09%	Singapore	2.01%
13	Australia	1.60%	Vietnam	1.17%	France	1.40%	India	1.76%	Nepal	1.74%
14	France	1.56%	Indonesia	1.13%	India	1.35%	Germany	1.70%	Germany	1.46%
15	Macau	1.47%	Australia	1.10%	Australia	1.19%	France	1.41%	France	1.43%

\*Compiled by TCA based on *Voice Communications Usage in Japan Seen from Volume of Communications Traffic State* published by the Ministry of Internal Affairs and Communications

## 2-2-5-2-2 Trends in Share of Incoming Call Duration by Country/Region

Ranking	FY2019		FY2020		FY2021		FY2022		FY2023	
1	China	25.12%	U.S.A. (mainland)	27.52%	China	35.60%	U.S.A. (mainland)	32.68%	U.S.A. (mainland)	35.03%
2	U.S.A. (mainland)	20.12%	Korea	27.40%	Korea	29.32%	China	30.25%	China	33.31%
3	Korea	18.92%	China	26.51%	U.S.A. (mainland)	25.90%	Korea	28.09%	Korea	23.55%
4	Hong Kong	14.03%	Hong Kong	3.17%	Hong Kong	0.93%	U.K.	2.51%	U.K.	2.31%
5	Canada	3.16%	Canada	2.05%	Australia	0.86%	Hong Kong	0.72%	Australia	0.73%
6	Singapore	2.45%	Australia	1.62%	U.K.	0.81%	Australia	0.65%	UAE	0.54%
7	Taiwan	1.23%	Singapore	1.57%	Singapore	0.76%	Singapore	0.58%	Taiwan	0.45%
8	Australia	1.20%	Germany	1.38%	Taiwan	0.74%	UAE	0.53%	Myanmar	0.42%
9	Germany	1.15%	Thailand	0.96%	Thailand	0.53%	Indonesia	0.43%	Singapore	0.41%
10	Macau	1.08%	Taiwan	0.91%	UAE	0.50%	Taiwan	0.42%	Indonesia	0.37%
11	Malaysia	1.06%	Malaysia	0.86%	Indonesia	0.47%	Malaysia	0.35%	Hong Kong	0.35%
12	Thailand	1.05%	Belgium	0.77%	Malaysia	0.44%	Germany	0.33%	Malaysia	0.30%
13	France	0.89%	U.K.	0.66%	Belgium	0.43%	Thailand	0.32%	Thailand	0.30%
14	Iceland	0.77%	UAE	0.54%	Germany	0.38%	Vietnam	0.31%	Vietnam	0.30%
15	Indonesia	0.74%	Vietnam	0.53%	Vietnam	0.34%	Belgium	0.28%	India	0.20%

\*Compiled by TCA based on *Voice Communications Usage in Japan Seen from Volume of Communications Traffic State* published by the Ministry of Internal Affairs and Communications

## 2-2-5-2-3 Outgoing and Incoming Call Duration by Country/Region (FY2023)

Country/Region (descending order according to outgoing duration)	Outgoing from Japan						Incoming to Japan					
	Ranking in outgoing		Duration of outgoing (Million minutes)	Increase or decrease ratio over previous year (%)	Share (%)	Accumu- lated share (%)	Ranking in incoming		Duration of incoming (Million minutes)	Increase or decrease ratio over previous year (%)	Share (%)	Accumu- lated share (%)
	2023	2022					2023	2022				
U.S.A. (mainland)	1	(1)	44.3	▲19.74%	27.81%	27.81%	1	(1)	158.6	▲0.15%	35.03%	35.03%
China	2	(2)	20.3	▲12.99%	12.71%	40.52%	2	(2)	150.8	2.57%	33.31%	68.34%
Bangladesh	3	(11)	12.7	244.86%	7.97%	48.49%	43	(52)	0.0	52.47%	0.01%	68.35%
Korea	4	(3)	12.4	2.21%	7.80%	56.29%	3	(3)	106.6	▲21.90%	23.55%	91.90%
Taiwan	5	(7)	10.9	120.09%	6.82%	63.12%	7	(10)	2.0	0.31%	0.45%	92.35%
Thailand	6	(5)	5.1	▲9.74%	3.18%	66.29%	13	(13)	1.4	▲13.98%	0.30%	92.65%
Hong Kong	7	(4)	4.5	▲19.58%	2.85%	69.15%	11	(5)	1.6	▲55.46%	0.35%	93.00%
Australia	8	(12)	4.4	29.97%	2.74%	71.89%	5	(6)	3.3	5.12%	0.73%	93.73%
India	9	(13)	4.1	46.15%	2.60%	74.49%	15	(28)	0.9	345.40%	0.20%	93.93%
Philippines	10	(6)	3.8	▲25.10%	2.37%	76.86%	18	(16)	0.6	▲33.74%	0.13%	94.06%
U.K	11	(10)	3.7	▲1.86%	2.35%	79.21%	4	(4)	10.5	▲14.13%	2.31%	96.37%
Singapore	12	(9)	3.2	▲20.86%	2.01%	81.22%	9	(7)	1.9	▲33.90%	0.41%	96.79%
Nepal	13	(36)	2.8	1201.61%	1.74%	82.96%	42	(44)	0.0	▲12.80%	0.01%	96.80%
Germany	14	(14)	2.3	▲15.18%	1.46%	84.42%	16	(12)	0.7	▲55.72%	0.16%	96.95%
France	15	(15)	2.3	0.61%	1.43%	85.85%	23	(17)	0.3	▲62.52%	0.06%	97.01%
Vietnam	16	(16)	2.0	▲4.75%	1.28%	87.13%	14	(14)	1.3	▲9.49%	0.30%	97.31%
Hawaii (U.S.A.)	17	(17)	1.9	▲9.71%	1.17%	88.29%	25	(23)	0.2	▲29.07%	0.04%	97.36%
Canada	18	(18)	1.8	▲2.24%	1.14%	89.43%	17	(20)	0.7	46.03%	0.14%	97.50%
Malaysia	19	(19)	1.7	▲6.10%	1.05%	90.48%	12	(11)	1.4	▲20.36%	0.30%	97.80%
Indonesia	20	(20)	1.4	▲15.35%	0.87%	91.35%	10	(9)	1.7	▲19.31%	0.37%	98.18%
Italy	21	(21)	1.1	13.64%	0.71%	92.06%	24	(24)	0.3	▲2.23%	0.06%	98.24%
Eritrea	22	(8)	0.8	▲83.24%	0.48%	92.54%	199	(200)	0.0	▲49.59%	0.00%	98.24%
UAE	23	(23)	0.7	3.13%	0.41%	92.95%	6	(8)	2.4	▲5.33%	0.54%	98.77%
New Zealand	24	(24)	0.6	13.14%	0.39%	93.35%	21	(22)	0.4	21.27%	0.08%	98.85%
Brazil	25	(25)	0.5	▲4.30%	0.33%	93.67%	33	(25)	0.1	▲67.58%	0.02%	98.87%
Netherlands	26	(26)	0.5	▲4.91%	0.31%	93.99%	32	(31)	0.1	▲24.69%	0.02%	98.89%
Belgium	27	(22)	0.5	▲38.14%	0.31%	94.30%	22	(15)	0.3	▲76.79%	0.07%	98.96%
Switzerland	28	(27)	0.5	▲5.33%	0.31%	94.61%	28	(27)	0.1	▲34.26%	0.03%	98.99%
Spain	29	(28)	0.5	9.27%	0.31%	94.91%	31	(39)	0.1	45.17%	0.02%	99.02%
Sri Lanka	30	(29)	0.5	11.25%	0.30%	95.22%	19	(21)	0.4	17.75%	0.09%	99.10%
Total of other countries	—	—	7.6		4.78%	100.00%	—	—	4.1		0.90%	100.00%
<b>Total of all countries/regions</b>	—	—	<b>159.4</b>		—	—	—	—	<b>452.7</b>		—	—

\*Compiled by TCA based on Voice Communications Usage in Japan Seen from Volume of Communications Traffic State published by the Ministry of Internal Affairs and Communications

## 2-3 Movements of Services and Charges

### 2-3-1 Fixed Telephones

#### 2-3-1-1 Progress of Rates

##### 2-3-1-1-1 Progress of Telephone Rates of NTT(Rates do not include tax)

1985	A three-minute call to the longest distance zone covering over 320km cost ¥400.
July 1986	First reduction of rates after NTT privatization was implemented. The Saturday discount was introduced, which applied, as was the case with holidays and nighttime, 40% discount from the normal rates for weekdays.
February 1988	NTT reduced the longest distance rate for weekday daytime calls to a level of ¥360 for 3 minutes.
February 1989	NTT reduced the longest distance rate for weekday daytime calls to a level of ¥330 for 3 minutes. It also cut rates for calls to the adjacent distance zone and areas within a radius of 20km from a level of ¥30 to ¥20 for 3 minutes (First reduction for short-distance calls since 1972).
March 1990	NTT reduced the longest distance rate for weekday daytime calls to a level of ¥280 for 3 minutes. It also introduced late-night discounts for local, short- and middle-distance calls.
March 1991	Distance segments covering over 160km were consolidated into a single longest distance zone, and the longest distance rate for weekday daytime calls was reduced to a level of ¥240 for 3 minutes. NTT also reduced rates for weekday daytime calls to areas within 20-30km radiuses to a level of ¥40 for 3 minutes. Late-night discount time period was extended by two hours to cover from 11 p.m. to 8 a.m. in the next morning.
June 1992	NTT reduced the longest distance rate for weekday daytime calls to a level of ¥200 for 3 minutes.
October 1993	NTT streamlined the distance segments covering 30-100km to two from four steps, and reduced rates for portions exceeding 30km by ¥10-60. The longest distance rate for weekday daytime calls was reduced to a level of ¥180 for 3 minutes.
March 1996	The rate for longest distance calls was lowered to ¥140 per 3 minutes in the daytime on weekdays.
February 1997	The rate for long-distance calls over 100 km was lowered to ¥110 per 3 minutes in the daytime on weekdays.
February 1998	Distances of over 100km were incorporated into the longest distance rate zone, and the longest distance rate for weekday daytime calls was reduced to a level of ¥90 for 3 minutes.
July 1999	With the reorganization of NTT, NTT East and NTT West took charge of intra-prefecture calls, and NTT Communications took inter-prefectures calls.
October 2000	NTT East and West lowered the toll call rate over 20 km in distance. The rate per 3 minutes in the daytime on weekdays was lowered to ¥30 for 20 to 60 km, and to ¥40 for over 60 km.
January 2001	NTT East reduced the local call rates to ¥9 per 3 minutes.
May 2001	NTT East and West lowered the local call rate to ¥8.5 per 3 minutes both in the daytime and at night.
January 2024	NTT East and West began setting rates for inter-prefectural and international calls, in addition to intra-prefectural calls. The rate for both intra-prefectural and inter-prefectural calls became a flat 8.5 yen per 3 minutes.

2-3-1-1-2 Progress of Rates of Long-Distance and International NCCs(Rates do not include tax)

September 1987	Three new long-distance carriers started services. DDI CORPORATION, JAPAN TELECOM CO., LTD. and Teleway Japan Corporation started services. They offer charges about 25% below those of NTT. A 3-minute weekday daytime call to the longest distance zone of 340km cost ¥300 (in the case of NTT-established local portion charge being ¥20).
February 1988	These NCCs reduced evening and late-night rates, and introduced evening discounts into short-distance rates.
February 1989	Rates applicable to all the distance zones were reduced, bringing the longest distance rate for weekday daytime calls down to a level of ¥280 for 3 minutes.
March 1990	The longest distance rate for weekday daytime calls was reduced to a level of ¥240 for 3 minutes. Rates for calls to all the distance zones for evening, Saturdays, Sundays and holidays were reduced.
March 1991	Distance zones covering over 170km were consolidated into the longest distance zone, and the longest distance rate for weekday daytime calls was reduced to a level of ¥200 for 3 minutes. Evening, Saturday, Sunday, and holiday rates were also reduced.
April 1992	The longest distance rate for weekday daytime calls was reduced to a level of ¥180 for 3 minutes.
November 1993	In response to the introduction of the end-to-end charging (that was established by NCCs on an end-to-end basis for the entirety from the calling party through the called party including the local portion) in place of the add-on charging so far applied (total of the charge for trunk portion established by NCCs, and the charge for local portion established by NTT), an overall reduction of rates was implemented. As a result, the longest distance rate for weekday daytime calls was reduced to a level of ¥170 for 3 minutes. The late-night discount time zone (from 11 p.m. to 8 a.m. in the next morning) was established, and the distance zones covering from 60km up to 100km were combined from two to one.
April 1994	The charge for the end portion provided by NTT was changed from the user charge to the cost-based inter-carriers settlement charge (access charge).
March 1996	In response to the reduction of the inter-carrier settlement charges paid by NCCs to NTT relating to the local portion provided by NTT (so-called "access charge"), the longest distance (over 170km) rate for weekday daytime calls was reduced to a level of ¥130 for 3 minutes from ¥170. In addition, the distance zone for short-distance calls, which had been set up in terms of "up to 60km" was divided into two zones, "up to 30km" and "over 30km up to 60km", and the rate-cut was made for "up to 30km" weekday daytime calls, and "up to 30km" and "over 30km up to 60km" late-night and early morning calls.
February 1997	The longest distance rate for weekday daytime calls was reduced to a level of ¥100 for 3 minutes.
February 1998	The longest distance rate for weekday daytime calls was reduced to a level of ¥90 for 3 minutes (The reduction brought NCCs' rates to the same level as NTT's ). The distance zones for the adjacent zone and the inside radius of 20km were established.
July 1998	KDD made a full-scaled inroad into domestic telephone markets, setting the longest distance rate for weekday daytime calls at a level of ¥69 for 3 minutes.
April 2000	Daytime and evening rates, etc to 20 - 30km and 30 - 60km distance zones were reduced NTT Communications reduced daytime and evening rates for calls to 30 - 60km and 60 - 100km distance zones, and evening and midnight rates for 60 - 100km and over 100km distance zones.
October 2000	KDD, DDI and IDO merged into KDDI. New Intra-prefecture rates were established at a level of ¥40 for 3-minute weekday daytime call to the 60km or longer distance zone.

December 2000	C&W IDC fully entered the local domestic telephone market, and started the service setting, at a level of ¥45, its remotest distance rate applicable to 3-minute calls of 100km or longer distances for all day.
March 2001	The rate to the remotest distance zone was reduced to a level of ¥80 for 3-minute weekday daytime call, and the rate applicable to the 60-100km distance zone to a level of ¥60 for 3-minute weekday daytime call. NTT Communications reduced rates applicable to the 20 - 30km distance zone for all day, the 30 - 60km distance zone during evening and midnight, the 60 - 100km distance zone during midnight, and the more than 100km distance zone during daytime and midnight.
April 2001	Fusion Communications started IP telephone service, establishing its rate at ¥20 for 3-minute irrespective of distance throughout Japan.
May 2001	NTT Communications entered the local call market in Tokyo, Aichi, and Osaka. The rate is ¥8.5 per 3 minutes. KDDI and Japan Telecom entered the local call market. Their local call rate is ¥8.5 for 3-minute weekday daytime call.
December 2004	Japan Telecom started "OTOKU Line" fixed telephone service.
February 2005	KDDI started "Metal Plus" telephone service.
June 2006	Japan Telecom Co. Ltd. took over telecommunications business from Heisei Denden Corp. and Heisei Denden Communications Corp.
October 2006	Japan Telecom Co. Ltd. changed its company name to SoftBank Telecom Corp.
April 2015	SoftBank Mobile Corp., SoftBank BB Corp., SoftBank Telecom Corp., and Ymobile Corporation merged together to form SoftBank Mobile Corp.
July 2015	SoftBank Mobile Corp. changed its company name to SoftBank Corp.
December 2015	Fusion Communications Corp. changed its company name to Rakuten Communications Corp.
June 2016	KDDI terminated its "Metal Plus" telephone service.
July 2019	Rakuten Communications Corp. transferred its domestic telephone service (MYLINE) and the Rakuten Denwa phone service to Rakuten Mobile, Inc. through a company split.
January 2024	With the transition of the relay network system to being IP-based, KDDI and SoftBank discontinued their MyLine services and began providing call service wholesale.

#### 2-3-1-1-3 Progress of Rates of Regional and Cable TV Operators(Rates do not include tax)

May 1988	Tokyo Telecommunication Network Company Inc. (called TNet hereafter, later reformed to the present Poweredcom), a regional common carrier, started direct subscriber telephone service.
June 1997	Cable TV operator, TITUS COMMUNICATIONS CORPORATION, started subscriber telephone services. For call billing the Hudson charging method in units of 20 seconds was introduced.
July 1997	Suginami Cable TV Co., Ltd. (currently J-COM Tokyo) started subscriber telephone services.
January 1998	TNet started relay telephone services with the rate of ¥9 for 3 minutes intra-zone calls, and the longest distance rate set at ¥72 for 3 minutes on weekday daytime calls.
March 1998	TNet reduced the longest distance rate for weekday daytime calls to a level of ¥63 for 3 minutes.
April 1999	Kyushu Telecommunication Network Co., LTD. (hereafter, QNet) started relay telephone services with the rate of ¥9 for intra-zone calls for 3 minutes on weekdays during the daytime, and ¥70 for the longest distance.
May 2000	TNet reduced the rate for 3-minute weekday daytime call to 60 - 100km distance zone from ¥54 to ¥45.

November 2000	QTNnet established new intra-prefecture rate, setting weekday daytime rate for call to a 60km or longer distance zone at a level of ¥27 for 3-minute.
May 2001	TTNet reduced the charges for calls to all the distance zones. The charge applicable to the remotest distance zone was reduced to a level of ¥54 for 3-minute daytime call, ¥36 for 3-minute daytime call to a 60 -100km distance zone, and ¥8.4 for local calls, respectively. QTNnet reduced the rate for intra-zone calls to ¥8.4 for three minutes during the day on weekdays.
April 2003	POWEREDCOM merged with TTNet, and the new company was named POWEREDCOM, Inc.
July 2004	The telephone business of POWEREDCOM is merged with FUSION COMMUNICATIONS CORP.
June 2018	QTNnet (formerly Kyushu Telecommunication Network) terminated its relay telephone services.
April 2019	K-Opticom Corporation changed its company name to OPTAGE Inc.

#### 2-3-1-1-4 Progress of ISDN Service Provision

April 1988	NTT inaugurated ISDN service.
October 1995	Osaka Media Port and Shikoku Information and Telecommunication Network inaugurated ISDN service.
February 1996	NTT started "INS Telehodai", a fixed rate service to selected telephone numbers in the midnight to early morning time zone.
March 1996	HOKKAIDO TELECOMMUNICATION NETWORK and Tohoku Intelligent Telecommunication inaugurated ISDN service.
April 1996	Chubu Telecommunications inaugurated ISDN service.
April 1997	TTNet and QTNnet inaugurated ISDN service.
July 1997	NTT inaugurated ISDN service free of the facilities installation charge, "INS Net 64 Lite".
October 1997	Chugoku Telecommunication Network inaugurated ISDN service.
December 1997	Osaka Media Port started interconnection with NTT.
July 2000	NTT East and NTT West inaugurated fixed rate IP connection service, "FLET'S ISDN".
July 2003	Chugoku Telecommunication Network merged with Chugoku Information System Service and reorganized as Energia Communications.
April 2010	Tohoku Intelligent Telecommunication terminated ISDN service.
March 2011	Energia Communications terminated ISDN service.
December 2013	QTNnet terminated its ISDN service.

• Changes in NTT's Call Rates (for a 3-minute weekday daytime call) (Tax not included)

Time of Revision	Number of Distance Zone	Within Zone	Adjacent Zone up to 20km	-30km	-40km	-60km	-80km	-100km	-120km	-160km	-240km	-320km	-500km	-750km	Over 750km
Before Aug. 1983	14	10	30	50	60	90	120	140	180	230	280	360	450	600	720
Aug. 1983	14	10	30	50	60	90	120	140	180	230	280	360	450	520	600
Jul. 1985	12	10	30	50	60	90	120	140	180	230	280	360	400		
Jul. 1986	10	10	30	50	60	90	120	140	180	260	400				
Feb. 1988	10	10	30	50	60	90	120	140	180	260	360				
Feb. 1989	10	10	30	50	60	90	120	140	180	260	330				
Mar. 1990	10	10	30	50	60	90	120	140	180	260	280				
Mar. 1991	9	10	30	40	60	90	120	140	180	240					
Jun. 1992	9	10	30	40	60	90	120	140	180	200					
Oct. 1993	7	10	30	40	50	80	140	180							
Mar. 1996	6	10	30	40	50	80	140								
Feb. 1997	6	10	30	40	50	80	110								
Feb. 1998	6	10	30	40	50	80	90								
NTT Com	Apr. 2000	—	—	20	40	70	90								
	Mar. 2001	—	—	20	40	60	80								
NTT East & West	Oct. 2000	—	10	20	30	40									
	Jan. 2001	—	9*	20	30	40									
May. 2001	—	8.5	20	30	40										
Jan. 2024	8.5														

Shaded columns are revised. \*In January 2001 only NTT East reduced the local call rates.

[Discount System by Day of the Week and Time Zone]

Nov. 1980	<ul style="list-style-type: none"> <li>Expansion of evening discount system</li> <li>Establishment of midnight discount system                             <ul style="list-style-type: none"> <li>• 60% discount for calls to more-than-320km zones</li> <li>• 9p.m.- 6a.m.</li> </ul> </li> </ul>
Aug. 1981	<ul style="list-style-type: none"> <li>Establishment of Sunday/Holiday discount system                             <ul style="list-style-type: none"> <li>• 40% discount for Sunday/Holiday daytime calls to more-than-60km zones</li> </ul> </li> </ul>
Jul. 1986	<ul style="list-style-type: none"> <li>Establishment of Saturday discount system                             <ul style="list-style-type: none"> <li>• 40% discount for Saturday daytime calls to more-than-60km zones</li> </ul> </li> </ul>
Mar. 1990	<ul style="list-style-type: none"> <li>Expansion of midnight discount system                             <ul style="list-style-type: none"> <li>• 25% discount for intra-zone and short-distance calls</li> <li>• 45% discount for medium- and long-distance calls</li> <li>• 11p.m. - 6a.m.</li> </ul> </li> </ul>
Mar. 1991	<ul style="list-style-type: none"> <li>Expansion of midnight discount system                             <ul style="list-style-type: none"> <li>• 11p.m. - 8a.m.</li> </ul> </li> </ul>
Oct. 1993	<ul style="list-style-type: none"> <li>Expansion of midnight discount rate                             <ul style="list-style-type: none"> <li>• 50 - 55% discount for medium- and long-distance calls</li> </ul> </li> </ul>
Oct. 2000	<ul style="list-style-type: none"> <li>Expansion of midnight discount system                             <ul style="list-style-type: none"> <li>• 20% discount for calls to 20 - 60km section</li> </ul> </li> </ul>

## 2-3-2 Mobile Phones

### 2-3-2-1 Progress of Service Provision and Movements of Carriers

December 1979	NTT Public Corp. inaugurated automobile telephone service in 23 Tokyo Metropolitan wards.
April 1987	NTT inaugurated cellular telephone service.
December 1988	Nippon Idou Tsushin Corp. (IDO) inaugurated mobile services based on the NTT large-capacity system.
July 1989	KANSAI CELLULAR TELEPHONE COMPANY inaugurated mobile services based on the TACS system.
July 1992	NTT split up its mobile communications business division, establishing NTT Mobile Communications Network, Inc. (NTT DOCOMO).
March 1993	NTT DOCOMO inaugurated mobile services based on the 800MHz band PDC system.
July 1993	NTT DOCOMO was regionally divided into 9 regional companies under the one-region-one-company system.
October 1993	NTT DOCOMO abolished the deposit money (¥100,000) system.
April 1994	The mobile terminal COAM (Customer Owned and Maintained) system was introduced. Tokyo Digital Phone Co., Ltd. and TU-KA Phone Kansai Co., Ltd. inaugurated mobile services based on the 1.5GHz band PDC system. NTT DOCOMO inaugurated mobile services based on the 1.5GHz band PDC system in Tokyo Metropolitan 23 wards.
June 1994	IDO inaugurated mobile services based on the TACS system.
January 1996	Digital TU-KA Kyushu Co., Ltd. inaugurated mobile services based on the 1.5GHz band PDC system.
December 1996	The prior notification system of mobile communications rate was started. The new subscription fee was abolished.
March 1997	NTT DOCOMO inaugurated packet communications service, “DoPa.”
July 1998	DDI Cellular Group started “cdmaOne” service in Kansai, Kyushu and Okinawa.
October 1998	TU-KA Phone Kansai Co., Ltd. inaugurated prepaid cellular telephone service.
January 1999	The 11-digit numbering system was introduced to the mobile telephone service.
February 1999	NTT DOCOMO inaugurated Internet connection service, “i-mode.”
March 1999	NTT DOCOMO and IDO terminated mobile services based on the NTT large-capacity system.
April 1999	DDI Cellular Group and IDO extended service areas of “cdmaOne” to cover the whole nation, and inaugurated Internet connection service, “EZweb/EZaccess.”
December 1999	J-Phone Group inaugurated Internet connection service, “J-Sky.”
January 2000	DDI Cellular Group and IDO inaugurated packet communications service, “PacketOne.”
April 2000	DDI Cellular Group and IDO started international roaming service “GLOBAL PASSPORT”.
September 2000	DDI Cellular Group and IDO terminated mobile services based on the TACS system.
October 2000	DDI, KDD and IDO merged as DDI CORPORATION (KDDI). Nine J-Phone Group companies are merged for reorganization into J-Phone East Co., Ltd., J-Phone Central Co., Ltd. and J-Phone West Co., Ltd.
November 2000	Seven companies excluding OKINAWA CELLULAR TELEPHONE of DDI Cellular Group merged as au Corp.
October 2001	KDDI merged with au.
October 2001	NTT DOCOMO started full-scale services for IMT-2000 based on the W-CDMA system.

November 2001	J-Phone Co. Ltd. as the holding company merged with J-Phone East Co., Ltd., J-Phone Central Co., Ltd. and J-Phone West Co., Ltd., and the new company was named J-Phone Co., Ltd.
November 2001	KDDI and Okinawa Cellular Telephone Company launched the cellular telephone with GPS navigation function for the first time in the Japanese market.
April 2002	KDDI and Okinawa Cellular Telephone Company started CDMA2000 1x service.
December 2002	J-Phone Co., Ltd. started 3G service using 3GPP-based W-CDMA system, and international roaming with GSM-based networks.
June 2003	NTT DOCOMO started international roaming with GSM-based networks.
October 2003	J-Phone Co., Ltd. was renamed as Vodafone K.K.
October 2003	Vodafone inaugurated "Vodafone live!" as the 3G Internet connection service, which is also available at overseas locations.
November 2003	KDDI and Okinawa Cellular Telephone Company launched CDMA 1X WIN service.
January 2004	NTT DOCOMO inaugurated "i mode Disaster Message Board Service".
May 2004	KDDI and Okinawa Cellular Telephone launched CDMA-based international data roaming services.
July 2004	NTT DOCOMO started to provide "i-mode FeliCa" service.
October 2004	Vodafone Holdings K.K. and Vodafone K.K. were merged into new Vodafone K.K.
December 2004	Vodafone launched international video telephone roaming services.
December 2004	NTT DOCOMO launched W-CDMA type 3G mobile network services based on 3GPP, packet roaming services with GSM (GPRS) networks to make overseas i-mode connection possible, and international video telephone roaming services.
September 2005	KDDI and Okinawa Cellular Telephone Company started to provide "EZ FeliCa" service.
September 2005	KDDI and Okinawa Cellular Telephone Company started au IC card service and international roaming with GSM-based networks.
September 2005	Vodafone started 3G data card international roaming service.
September 2005	NTT DOCOMO started to provide the "i-channel" service based on "Flash Cast".
October 2005	KDDI merged with three Tu-Ka companies.
October 2005	Vodafone launched "Vodafone live! NAVI", a new navigation service allowing use of network-assisted GPS function not only in Japan but also abroad.
November 2005	Vodafone started to provide "Vodafone live! NAVI".
November 2005	NTT DOCOMO started to provide "Push-talk" voice communication service making use of the packet network.
November 2005	KDDI and Okinawa Cellular Telephone Company started "Hello Messenger" service.
November 2005	EMOBILE Ltd. received a radio frequency license for the 1.7GHz frequency band from the Ministry of Internal Affairs and Communications and entered into mobile phone business based on the W-CDMA system.
December 2005	KDDI and Okinawa Cellular Telephone Company launched the terminal compatible with "One-Seg" ground digital telecasting service for mobile and cellular telephones.
December 2005	NTT DOCOMO started to provide a new mobile credit brand "iD".
January 2006	KDDI and Okinawa Cellular Telephone started to provide "au LISTEN MOBILE SERVICE (LISMO)".
March 2006	NTT DOCOMO launched mobile telephone terminals conforming to the one segment terrestrial digital TV service.
April 2006	NTT DOCOMO started to provide "DCMX" credit service.
April 2006	Vodafone joined the SoftBank group.
May 2006	Vodafone released a cellular phone terminal conforming to the one-segment terrestrial

	digital TV service.
August 2006	NTT DOCOMO launched “HSDPA” conforming to high-speed packet communications. NTT DOCOMO started to provide the “music channel” service.
September 2006	KDDI and Okinawa Cellular started “EZ Channel Plus” and “EZ News Flash” utilizing the “BCMCS”.
October 2006	Vodafone changed its company name to SoftBank Mobile Corp. SoftBank Mobile started a new portal site “Yahoo! Keitai”. SoftBank Mobile launched “3G high speed”.
October 2006	Three cellular phone companies started a mobile number portability system.
December 2006	KDDI and Okinawa Cellular Telephone started “EV-DO Rev.A” service.
March 2007	EMOBILE started the “EM mobile broadband” HSDPA data communication service.
May 2007	NTT DOCOMO started to provide the “2in1” service, where a single mobile phone unit has the functions of two mobile phone units.
December 2007	NTT DOCOMO started to provide the “Area Mail” service.
March 2008	KDDI terminated its Tu-Ka service. KDDI and Okinawa Cellular Telephone Company started GSM-based international data-roaming service.
March 2008	EMOBILE started voice communication service based on W-CDMA, and the “EMnet” internet connection service for cellular phone terminals.
June 2008	NTT DOCOMO started to provide the “Home U” service, which allows the use of mobile phones in a broadband environment such as in the home.
July 2008	SoftBank Mobile started to provide the “Double Number” service, which allows a single mobile phone unit to manage two phone numbers and e-mail addresses.
November 2008	EMOBILE started a High-Speed Uplink Packet Access (HSUPA) data communication service.
March 2009	SoftBank Mobile started a high-speed mobile data communication service for PCs.
July 2009	EMOBILE started a High-Speed Packet Access Plus (HSPA+) data communication service.
June 2010	KDDI inaugurated ISP for smartphones “IS NET”.
September 2010	NTT DOCOMO inaugurated ISP for smartphones “sp mode”.
December 2010	NTT DOCOMO inaugurated LTE high-speed data communication service with maximum 75Mbps download traffic speed “Xi (crossy) service”.
December 2010	EMOBILE inaugurated high-speed packet communication service with maximum 42Mbps download traffic speed “EMOBILE G4”.
February 2011	SoftBank Mobile inaugurated high-speed packet communication service with maximum 42Mbps download traffic speed “ULTRA SPEED”.
March 2011	NTT DOCOMO and KDDI started to provide “Disaster Message Board Service” for smartphones.
April 2011	NTT DOCOMO inaugurated SIM unlock.
May 2011	eAccess started selling EMOBILE terminals with SIM unlock.
July 2011	Inter-carrier settlement for Short Message Service (SMS) is inaugurated.
January 2012	SoftBank Mobile began providing Disaster Info.
January 2012	KDDI began providing disaster and evacuation information through its Early Warning Mail services.
January 2012	KDDI began providing mobile NFC services.
February 2012	SoftBank Mobile began providing its “SoftBank 4G” high-speed data communication service with a maximum downstream speed of 110 Mbps.
February 2012	NTT DOCOMO began delivering early warning Area Mails (tsunami warnings).
March 2012	NTT DOCOMO began providing Disaster Voice Messaging Service.

March 2012	eAccess began providing its “EMOBILE LTE” high-speed data communication service with a maximum downstream speed of 75 Mbps.
March 2012	NTT DOCOMO began selling its “Mobacas” V-High multimedia broadcasting compatible terminals (first such attempt in Japan).
March 2012	KDDI began providing tsunami warnings in its Early Warning Mail services.
March 2012	NTT DOCOMO terminated its PDC service.
April 2012	KDDI introduced the EV-DO Advanced, a technology to ease data communication congestion at wireless base stations.
June 2012	KDDI began providing a Disaster Voice Messaging Service.
July 2012	SoftBank Mobile began providing a Disaster Voice Messaging Service.
July 2012	SoftBank Mobile began providing services using the 900 MHz band.
August 2012	SoftBank Mobile began providing tsunami warnings.
August 2012	Telecommunications carriers began “all-carrier search services” for mobile phone and PHS disaster message board services and NTT EAST/WEST Disaster Message Board (web171).
September 2012	KDDI began providing the 4G LTE service based on the next-generation high-speed communication standard, LTE (Long Term Evolution).
October 2012	Business alliance between SoftBank Mobile and eAccess.
February 2013	NTT DOCOMO, China Mobile and KT developed common requirements for NFC international roaming.
February 2013	SoftBank Mobile began providing its SoftBank satellite phone service.
March 2013	eAccess began providing emergency earthquake warnings, tsunami warnings, and disaster and evacuation information through its Early Warning Mail services.
March 2013	eAccess began providing the FeliCa service.
March 2013	NTT DOCOMO, KDDI, SoftBank Mobile, and eAccess began providing mobile phone services throughout the entire Toei Subway Lines.
April 2013	NTT DOCOMO, KDDI, Okinawa Cellular, and SoftBank Mobile enabled interoperability of the Disaster Voice Messaging Service across the four mobile phone carriers.
July 2013	NTT DOCOMO, KDDI, and SoftBank Mobile began providing the LTE service at Mt. Fuji.
September 2013	SoftBank Mobile began providing international LTE roaming services.
September 2013	KDDI began providing international LTE roaming services.
October 2013	KDDI adopted the IEEE802.11ac next-generation wireless LAN standard for its au Wi-Fi SPOT public wireless LAN services.
November 2013	NTT DOCOMO, KDDI, Okinawa Cellular, SoftBank Mobile, and eAccess began using mobile phone numbers starting with 070.
November 2013	NTT DOCOMO developed a multi-band indoor base station and antenna.
January 2014	Six mobile phone and PHS carriers enabled interoperability of the Disaster Voice Messaging Service across these carriers.
March 2014	NTT DOCOMO began providing international LTE roaming services.
April 2014	NTT DOCOMO, KDDI, Okinawa Cellular, and SoftBank Mobile began delivering information on the protection of the people using the early warning Area Mails and Early Warning Mail services.
May 2014	Six mobile phone and PHS carriers standardized the number and varieties of pictographs used in text messages, including SMS, exchanged between carriers.
May 2014	KDDI introduced Carrier Aggregation, an LTE-Advanced technology based on the next-generation high-speed communication standard LTE, with a maximum receiving speed of 150 Mbps for the first time in Japan.
May 2014	NTT DOCOMO released guidelines for video distribution utilizing the next-generation

	video compression technology, HEVC.
June 2014	eAccess Ltd. and Willcom, Inc. merged.
June 2014	NTT DOCOMO developed the world's first new SIM-based authentication mini device, called Portable SIM.
June 2014	NTT DOCOMO began providing Japan's first VoLTE call service.
July 2014	eAccess Ltd. changed its company name to Ymobile Corporation.
August 2014	Ymobile started its new Y!mobile service.
October 2014	Number portability between mobile and PHS phones began.
November 2014	NTT DOCOMO started Japan's first international outbound roaming service on a TD-LTE network.
December 2014	KDDI began providing the au VoLTE next-generation voice calling service, utilizing the 4G LTE network.
December 2014	SoftBank Mobile began providing voice communication services using the VoLTE technology, a technology that enables voice communication over the LTE high-speed data communication network.
March 2015	NTT DOCOMO began providing LTE-Advanced services under the name "PREMIUM 4G" with a maximum downlink of 225 Mbps, which was the fastest in Japan.
April 2015	SoftBank Mobile Corp., SoftBank BB Corp., SoftBank Telecom Corp., and Ymobile Corporation merged together.
May 2015	The revised SIM unlocking guidelines came into effect, and NTT DOCOMO, KDDI, and SoftBank Mobile began providing SIM unlocking services based on the new guidelines.
July 2015	SoftBank Mobile Corp. changed its company name to SoftBank Corp.
October 2015	NTT DOCOMO became Japan's first telecommunications carrier to provide an international VoLTE roaming service.
March 2016	NTT DOCOMO began providing services using the world's first network function virtualization (NFV) technology that can run Evolved Packet Core (EPC) software from multiple vendors on its commercial network.
June 2016	KDDI began providing international VoLTE roaming services.
September 2016	SoftBank began providing the world's first commercial service with Massive MIMO (spatial multiplexing technology).
March 2017	NTT DOCOMO began providing communication service with a maximum downlink of 682 Mbps by introducing two new technologies: 256 QAM and 4x4 MIMO.
September 2017	KDDI began providing communication service with a maximum downlink of 708 Mbps by introducing 265 QAM and 4x4 MIMO.
May 2018	NTT DOCOMO, KDDI, and SoftBank began providing the +Message service, a new service as an extension of SMS, based on the GSMA specifications.
June 2018	NTT DOCOMO, in collaboration with China Mobile, commercialized the world's first IoT multi-vendor eSIM solution based on the GSMA 3.1 specifications.
October 2018	NTT DOCOMO, SoftBank, and KDDI each began providing services for VoLTE interconnection between different carriers.
October 2019	Rakuten Mobile began providing commercial service with the world's first end-to-end fully virtualized cloud-native network.
March 2020	NTT DoCoMo, KDDI, and SoftBank each began providing communication service using the fifth-generation mobile communication system (5G).
April 2020	Rakuten Mobile launched full-scale mobile carrier service.
September 2020	Rakuten Mobile began providing communication service using the fifth-generation mobile communication system.
October 2020	KDDI completed its succession of UQ mobile's business.
March 2021	SoftBank launched a new online-only plan under the brand name "LINEMO."

March 2021	KDDI launched a new online-only plan under the brand name “povo.”
March 2021	NTT DOCOMO launched a new online-only plan under the brand name “ahamo.”
March 2022	KDDI and Okinawa Cellular Telephone Company terminated their CDMA 1X WIN and other services for au 3G mobile phones.
May 2023	NTT DOCOMO, KDDI, Okinawa Cellular Telephone Company, SoftBank, and Rakuten Mobile introduced a “One Stop” version of mobile number portability (MNP).
July 2023	NTT DOCOMO merged with NTT Resonant.
September 2023	NTT DOCOMO, KDDI, Okinawa Cellular Telephone Company, SoftBank, and Rakuten Mobile began providing free access to 00000JAPAN, a public wireless LAN service for use in the event of a telecommunications failure.
June 2024	Rakuten Mobile began providing services using the 700 MHz band.
July 2024	SoftBank terminated its 3G mobile phone service.
April 2025	KDDI and Okinawa Cellular Telephone Company started to provide “au Starlink Direct,” a service that directly connect smartphones to satellites.

Note: The transmission speeds referred to in the chronology are those at the time of the introduction of the corresponding services by the relevant companies.

### 2-3-3 International Telephone Services

#### 2-3-3-1 Progress of Service Provision and Movements of Carriers

- In October 1989, International Telecom Japan Inc. (ITJ) and International Digital Communications Inc. (IDC) introduced services with 23% lower rates than those of Kokusai Denshin Denwa Co.,Ltd. (KDD)
- From 1989 through 1996 KDD implemented rate reductions eight times, and ITJ and IDC five times, resulting in a steady shift toward less expensive rates.

October 1998	DDI Corporation (DDI) started international telephone services with the level of charge set at ¥240 for a daytime 3-minute call to U.S. MCI Worldcom Japan, Inc. (WCOM) started international telephone services with the level of charge set at ¥248 for a daytime 3-minute call to U.S.
December 1998	KDD reduced charges for calls to all destinations (230 countries and areas). The average reduction rate was about 10.6%. As the result, a daytime 3-minute call to U.S. cost ¥240. Japan Telecom (JT) reduced charges for calls to 28 destinations. The average reduction rate was about 8.6%. A daytime 3-minute call to U.S. cost ¥240. IDC reduced charges for calls to 23 destinations. The average reduction rate was about 9.0%. A daytime 3-minute call to U.S. cost ¥240. WCOM reduced charges. A daytime 3-minute call to U.S. cost ¥150.
January 1999	DDI reduced charges for calls to 25 destinations. The average reduction rate was about 8.4%. A daytime 3-minute call to U.S. cost ¥168. JT reduced charges for calls to 97 destinations. The average reduction rate was about 2.2%. IDC reduced charges for calls to 51 destinations. The average reduction rate was about 3.5%.
March 1999	DDI reduced charges for calls to 27 destinations, with a main target of reduction on calls placed during 23:00 to 08:00 of the following day. The average reduction rate was about 5.8%.
July 1999	Tokyo Telecommunication Network Co.,Inc. (TTNet) started international telephone services with the level of charge set at ¥168 for a daytime 3-minute call to U.S.
October 1999	JT reduced charges for all destinations (223 countries and areas). The average reduction rate was about 10.3%. A daytime 3-minute call to U.S. cost ¥180. Cable & Wireless IDC reduced charges for calls to 192 destinations. The average reduction rate was about 10.9%. A daytime 3-minute call to U.S. cost ¥180. NTT Communications Corp. started international telephone services with the level of charge set at ¥180 for a daytime 3-minute call to U.S.
November 1999	KDD reduced charges for calls to all destinations (231 countries and areas). The average reduction rate was about 11.1%. A daytime 3-minute call to U.S. cost ¥180. DDI reduced charges for calls to 38 destinations. The average reduction rate was about 8.4%. A daytime 3-minute call to U.S. cost ¥156. TTNet reduced charges for calls to 58 destinations. The average reduction rate was about 11%. A daytime 3-minute call to U.S. cost ¥132.
December 1999	KDD reduced charges for cellular/PHS-originated calls to all destinations (231 countries/areas). The average reduction rate was about 11.9%.
February 2000	KDD reduced charges for calls to 17 destinations (Taiwan, China, U.K., France, Germany, etc.). The average reduction rate was about 1.4%.
October 2000	DDI, KDD and IDO were merged as KDDI.
April 2001	Fusion Communications started international telephone services, establishing the all-time flat rate system. The charge for 3-minute calls to U.S. is ¥90.
September 2001	Fusion Communications Corporation reduced the charges for calls to all destinations (230 countries and areas). A three-minute call to the U.S. cost ¥45.

April 2003	POWEREDCOM merged with TNet, and the new company was named POWEREDCOM, Inc.
July 2004	The telephone business of POWEREDCOM is merged with FUSION COMMUNICATIONS CORP.
October 2006	Japan Telecom Co. Ltd. changed its company name to SoftBank Telecom Corp.
April 2015	SoftBank Mobile Corp., SoftBank BB Corp., SoftBank Telecom Corp., and Ymobile Corporation merged together to form SoftBank Mobile Corp.
July 2015	SoftBank Mobile Corp. changed its company name to SoftBank Corp.
December 2015	Fusion Communications Corp. changed its company name to Rakuten Communications Corp.
July 2019	Rakuten Communications Corp. transferred its international telephone service to Rakuten Mobile, Inc. through a company split.
January 2024	NTT Communications Corporation (NTTCom) terminated its dialing service for international calls (0033 international calls).

## 2-3-4 Leased Circuit and Data Transmission Services

### 2-3-4-1 Progress of Service Provision and Movements of Carriers

#### • Progress of Leased Circuit Service Provision

##### (NTT)

December 1997	NTT started "Digital Access 128" as short-distance economy service.
April 1998	NTT started "Digital Access 1500" service.
August 1998	NTT started "Digital Reach" as medium- and long-distance economy service.
December 1998	NTT started "ATM SHARE LINK" as partial band assurance type exclusively for ATM.
October 1999	NTT Communications started "Gigaway" service.
March 2000	NTT Communications started "Air Access" service.
April 2001	NTT East and West started "Digital Access 6000" service.
November 2001	NTT East started "Metro High Link" service.
June 2002	NTT East started "Super-high Link" service.
July 2002	NTT West started "Giga Data Link" service.
October 2002	NTT Communications started "EtherArcstream" service.
June 2004	NTT Communications started "GIGASTREAM" service.
December 2008	NTT Communications started "GIGASTREAM Premium Ether" service.
May 2011	NTT Communications started to provide "Arcstar Universal One".
March 2024	NTT Communications started to provide "APN Leased Line Plan powered by IOWN" service.

##### (Long-Distance and International Carriers)

April 1998	KDDI (TWJ) started to provide leased circuit service for ATM.
October 1998	Long-distance and International NCCs started economy services.
September to October 1999	Long-distance and International NCCs acquired rate setting right and started end-to-end rate services.
January 2000	Global Access started domestic and international leased circuit service.
July 2000	Japan Telecom started domestic wide-band leased circuit service.
October 2002	Japan Telecom started international wide-band leased circuit service.
January 2024	Rakuten Mobile began providing KŌSOKU Access.

##### (Regional Carriers)

April 1997	Nine electric power companies started joint high-speed digital transmission service.
January 1998	TTNet started FDDI leased circuit service.
April 1998	TTNet started leased circuit service for ATM.
May 1998	Ten electric power companies completed nationwide linkage of high-speed digital transmission services.
October 1998	Nine electric power companies started linkage of ATM leased circuit services.
August 1999	Ten electric power companies completed nationwide linkage of economy services.
April 2001	TTNet started to provide "PeneLink (leased circuit)" (Ethernet leased circuit service).
September 2001	Keio Network Communications started to provide "Express-Ether" service.

April 2002 Osaka Media Port started Ether leased circuit service.  
June 2002 Chubu Telecommunication started optical fiber leased circuit service.  
April 2003 Osaka Media Port started Ether Network service (W-Link).

**(Regional CATV)**

April 2002 Katch Network started optical fiber leased circuit service.  
December 2002 Himawari Network started optical fiber leased circuit service.  
December 2002 My Television started regional LAN services.

• **Progress of Data Transmission Service Provision**

**(NTT)**

December 1996	NTT started OCN service.
August 1999	NTT Communications started to provide OBN (Open Business Network) service.
September 1999	NTT Communications started to provide "Arcstar Value Access" service.
May 2000	NTT East and West started to provide Wide LAN Service.
July 2000	NTT Communications started "Super VPN (current Arcstar IP-VPN)" service.
July 2000	NTT DOCOMO and NTT Communications jointly started to provide "RALS (Remote Access Line Service)".
September 2000	NTT East started to provide FLET's Office".
October 2000	NTT Communications started to provide "Broadband Access" service.
October 2000	NTT East and West started to provide "Mega Data Nets" service.
December 2000	NTT Communications started to provide "Giga Ether Platform" service.
January 2001	NTT Communications started to provide "Arcstar Global IP-VPN" service.
March 2001	NTT East started to provide "Metro Ether" service.
April 2001	NTT Communications started to provide "e-VLAN" service.
May 2001	NTT West started to provide "Urban Ether" service.
March 2002	NTT East started to provide "FLET's Group Access" service.
March 2002	NTT East started to provide "Super Wide LAN Service".
March 2002	NTT West started to provide "Wide LAN Plus" service.
March 2003	NTT East started to provide "FLET's Office Wide" service.
April 2003	NTT Communications started to provide "Super HUB" service.
May 2003	NTT Communications started to provide "FLEXGIGAWAY" service.
July 2003	NTT East started to provide "Flat Ether" service.
October 2003	NTT West started to provide "Flat Ether" service.
December 2003	NTT East started to provide the Smart Ether service.
June 2004	NTT Communications started to provide the "Group-VPN" service.
April 2006	NTT West started to provide the "Business Ether" service.
May 2006	NTT East started to provide the "Business Ether" service.
July 2009	NTT Communications started to provide the "Group-Ether" service.
May 2011	NTT Communications started to provide "Arcstar Universal One".

**(Long-Distance and International Carriers)**

April 1997	Long-distance and International NCCs sequentially started to provide computer network services.
April 1999	Japan Telecom started to provide international cell relay service.
April 2000	Japan Telecom started to provide Solteria (IP-VPN) service.
October 2000	KDDI started to provide ANDROMEGA IP-VPN service.
February 2001	Fusion Communications started to provide FUSION IP-VPN service.
October 2001	Japan Telecom started to provide "Wide-Ether" (wide-area LAN).
December 2001	Cable & Wireless IDC started to provide "High-speed Ethernet Service".

December 2001	KDDI started to provide "Ether-VPN" service.
September 2002	Cable & Wireless IDC started to provide "IP-VPN QoS" service.
November 2002	Japan Telecom started to provide "ASSOCIO (MLPS Traffic Switching Service)".
August 2012	SoftBank Telecom began providing its White Cloud SmartVPN service.
January 2024	Rakuten Mobile began providing VPN services.

**(Regional Carriers)**

From September 1997	Power company based NCCs sequentially started to provide computer network services.
March 2001	Hokkaido Telecommunication Network, Inc started to provide wide-area Ethernet service "L2L".
April 2001	Poweredcom started to provide "Powered Ethernet" wide-area Ethernet connection service.
April 2001	TTNet started to provide "Pene-Link (Multi-access)" (wide-area Ethernet connection service).
June 2001	K-Opticom started to provide IP-VPN service.
July 2001	Poweredcom started to provide "Powered-IP MPLS" (IP-VPN connection service).
August 2001	Chugoku Telecommunication Network started to provide Ethernet communication network service "V-LAN".
June 2002	Keio Network Communications started to provide "Multi-Express Ether" service.
July 2003	Chugoku Telecommunication Network merged with Chugoku Information System Service and reorganized as Energia Communications.
January 2003	Chubu Telecommunication started to provide band-assured type Ether network service "CTC Ether Link".
June 2005	Chubu Telecommunication started to provide "CTC Ether DIVE" wide-area Ethernet service.

**(Regional CATV)**

December 1995	Himawari Network started to provide cell relay service.
November 1997	Katch Network started to provide cell relay service.
April 1998	MICS Network started to provide ATM switching service.
September 1999	MICS Network started to provide wide-area LAN service.

