Major Transformations

Business Results Data A Timeline of the Group's Major Transformations Changes in Service Subscription Numbers Transformation of the Telephone Transformation of Mobile Communication Global Business Development Changes to R&D System Main Technological Awards

Business Results Data FY1986 – FY2000

		Unit	FY1986	FY1987	FY1988	FY1989	FY1990	
Number of Group companies*1		Companies	18	34	59	76	96	
Number of employees	* ²	People	303,951	297,596	291,142	276,650	266,017	
Operating revenues*3		Billions of yen	5,091.4	5,353.6	5,662	5,841.9	6,022.4	
Operating income*4		Billions of yen	757.7	804.5	914.5	815.4	800	
Net income attributable to NTT*3		Billions of yen	185.7	192.7	267.2	263.6	227.9	
Shareholders' equity*3		Billions of yen	3,511.8	3,587.4	3,776.6	3,962.2	4,613.8	
EPS* ⁵		Yen	119	124	171	169	146	
Fixed-line communications services* ⁶	Telephone subscriber line* ⁷ + INS-NET* ⁸	Thousands of lines	45,300	46,772	48,419	50,338	52,416	
Mobile communications services* ⁶	Analog + mova (2G)	Thousands of subscriptions	62	95	151	239	378	

*1 "Number of Group companies." Consolidated subsidiaries + non-consolidated subsidiaries (based on financial results).

- *2 "Number of employees." Only includes actual Group employees until FY1999. From FY2000 is the total of actual Group employees + employees of consolidated subsidiaries.
- *3 The data for FY1986 FY1995 us taken from the 10 Year History (Overseas) Consolidated Fiscal Statement, the data for FY1996 – FY2004 is taken from the 20 Year History Consolidated Financial Statement (based on accounting principles generally accepted in the United States), the data for FY2005 – FY2014 is taken from the Performance Highlights in the Annual Report 2014. In regard to affiliates that became subject to the application of the equity method in the FY2008, and in the FY2014, the equity method has been applied retroactively to past years, and consequently figures for the period from the FY2005, to the FY2013, have been retroactively adjusted.
- *4 The data for FY1986 FY1995 us taken from the 10 Year History (Overseas) Consolidated Fiscal Statement, the data for FY1996 – FY2004 is taken from the 20 Year History Consolidated Financial Statement (based on accounting principles generally accepted in the United States), the data for FY2005 – FY2014 is taken from the Performance Highlights in the Annual Report 2014.
- *5 The data for FY1986 FY1995 us taken from the 10 Year History (Overseas) Consolidated Fiscal Statement, the data for FY1996 – FY2004 is taken from the 20 Year History Consolidated Financial Statement (based on accounting principles generally accepted in the United States), the data for FY2005 – FY2014 is taken from the Performance Highlights in the Annual Report 2014. In regard to affiliates that became subject to the application of the equity method in the FY2008, and in the FY2014, the equity method has been applied retroactively to past years, and consequently figures for the period from the FY2005, to the FY2013, have been retroactively adjusted.
- *6 As of each fiscal year-end.
- *7 Number of Telephone subscriber line is the total of individual lines and central station lines (Subscriber Telephone Light Plan is included).
- *8 Number of INS-Net is the total of INS-Net 64 and INS-Net 1500 (INS-Net 64 Lite Plan is included). In terms of number of channels, transmission rate, and line use rate (base rate), INS-Net 1500 is in all cases roughly 10 times greater than INS-Net 64. For this reason, one INS-Net 1500 subscription is calculated as 10 INS-Net 64 subscriptions.

Environmental Data



Major Transformations

FY1991	FY1992	FY1993	FY1994	FY1995	FY1996	FY1997	FY1998	FY1999	FY2000
111	135	139	146	158	165	177	189	243	284
257,627	249,942	232,198	215,629	194,721	185,458	182,482	145,373	138,150	223,954
6,251.6	6,398.4	6,504	6,687	7,043.8	7,908.6	8,821.8	9,450	9,463.5	10,018.7
709.9	645.1	510.1	390.1	390.2	696.2	769.5	872	711.4	823.8
221	226.2	153.3	834	854	273.6	251.5	214.5	554.4	299
4,741.2	4,889.4	4,964.7	4,970.1	5,000.4	5,196.1	5,340.4	5,463.9	5,910.8	6,014.6
142	145	98	53	55	134	94	182	379	-43
54,513	56,310	57,788	59,058	60,280	61,654	62,710	63,003	62,906	62,865
549	846	1,027	1,323	2,206	4,936	10,960	17,984	23,897	29,356



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Business Results Data FY2001 – FY2014

		Unit	FY2001	FY2002	FY2003	FY2004	FY2005	
Number of Group companies*1		Companies	333	392	450	422	449	
Number of employe	ees* ²	People	215,231	213,062	207,363	205,288	201,486	
Operating revenue	s* ³	Billions of yen	10,836.8	11,027.8	10,923.1	11,095.5	10,805.9	
Operating income*	4	Billions of yen	834.8	61.5	1,363.6	1,560.3	1,211.2	
Net income attribut	able to NTT* ³	Billions of yen	533.8	-834.7	233.4	643.9	714.5	
Shareholders' equi	ty* ³	Billions of yen	6,756.2	5,865.1	5,637.6	6,398	6,740.3	
EPS*⁵		Yen	291	-503	145	406	462	
Fixed line								
communications services*6	Telephone subscriber line* ⁷ + INS-NET* ⁸	Thousands of lines	62,916	61,888	60,842	60,073	58,788	
	FLET'S ADSL	Thousands of subscriptions	27	967	2,555	4,089	5,208	
Fixed-line broadband servies ^{*6}	FLET'S Hikari (FTTH)* ⁹	Thousands of subscriptions	-	18	199	840	1,665	
	Hikari Denwa* ¹⁰	Thousands of channels	-	-	-	-	4	
NA 1.11	Xi (LTE) + FOMA (3G) + mova (2G)	Thousands of subscriptions	36,219	41,011	44,149	46,328	48,825	
Communications	FOMA (3G)	Thousands of subscriptions	-	89	330	3,045	11,501	
Dervices	Xi (LTE)	Thousands of subscriptions	-	-	-	-	-	
	Hikari TV	Thousands of subscriptions	-	-	-	-	-	
	FLET'S TV	Thousands of subscriptions	-	-	-	-	-	
VIDEO SERVICES"	dvideo	Thousands of subscriptions	-	-	-	-	-	
	NOTTV	Thousands of subscriptions	-	-	-	-	-	

- *1 "Number of Group companies." Consolidated subsidiaries + non-consolidated subsidiaries (based on financial results).
- *2 "Number of employees." Only includes actual Group employees until FY1999. From FY2000 is the total of actual Group employees + employees of consolidated subsidiaries.
- 3 The data for FY1986 FY1995 us taken from the 10 Year History (Overseas) Consolidated Fiscal Statement, the data for FY1996 FY2004 is taken from the 20 Year History Consolidated Financial Statement, the data for FY1996 FY2004 is taken from the 20 Year History Consolidated Financial Statement (based on accounting principles generally accepted in the United States), the data for FY1096 FY2006 FY2014 is taken from the Performance Highlights in the Annual Report 2014. In regard to affiliates that became subject to the application of the equity method has been applied retroactively to past years, and consequently figures for the period from the FY2005, to the FY2013, have been retroactively adjusted.
- *4 The data for FY1986 FY1995 us taken from the 10 Year History (Overseas) Consolidated Fiscal Statement, the data for FY1996 FY2004 is taken from the 20 Year History Consolidated Financial Statement (based on accounting principles generally accepted in the United States), the data for FY2005 FY2014 is taken from the Performance Highlights in the Annual Report 2014.
- *5 The data for FY1986 FY1995 us taken from the 10 Year History (Overseas) Consolidated Fiscal Statement, the data for FY1996 – FY2004 is taken from the 20 Year History Consolidated Financial Statement (based on accounting principles generally accepted in the United States), the data for FY2005 – FY2014 is taken from the Performance Highlights in the Annual Report 2014. In regard to affiliates that became subject to the application of the equity method in the FY2008, and in the FY2014, the equity method has been applied retroactively to past years, and consequently figures for the period from the FY2005, to the FY2013, have been retroactively adjusted.

*6 As of each fiscal year-end.

- *7 Number of Telephone subscriber line is the total of individual lines and central station lines (Subscriber Telephone Light Plan is included).
- *8 Number of INS-Net is the total of INS-Net 64 and INS-Net 1500 (INS-Net 64 Lite Plan is included). In terms of number of channels, transmission rate, and line use rate (base rate), INS-Net 1500 is in all cases roughly 10 times greater than INS-Net 64. For this reason, one INS-Net 1500 subscription is calculated as 10 INS-Net 64 subscriptions.
- *9 Number of FLET'S Hikari subscriptions includes B FLET'S, FLET'S Hikari Next, FLET'S Hikari Light, and FLET'S Hikari WiFi Access provided by NTT East, and B FLET'S, FLET'S Hikari Premium, FLET'S Hikari Mytown, FLET'S Hikari Next, FLET'S Hikari Light, and FLET'S Hikari WiFi Access provided by NTT West.
- *10 Number of Hikari Denwa subscriptions is calculated by number of channels in thousands



Capital Investment

*Capital investment is on an accrual basis for the acquisition of property, plant and equipment.

FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014
426	419	476	479	536	756	772	827	946
199,113	199,733	193,831	196,296	194,982	219,343	224,239	227,168	239,756
10,741.1	10,760.6	10,680.9	10,416.3	10,181.4	10,305.0	10,507.4	10,700.7	10,925.2
1,190.7	1,107.0	1,304.6	1,109.8	1,117.7	1,214.9	1,223	1,202	1,213.7
503.1	481.4	635.2	538.7	492.3	509.6	467.7	521.9	585.5
6,734.4	7,120.8	7,410.8	7,298.1	7,788.2	8,020.7	7,882.6	8,231.4	8,511.4
351	348	461	400	372	385	367	431	509
54,770	50,495	46,034	42,085	38,330	34,883	31,672	28,766	26,366
5,682	5,323	4,656	3,992	3,381	2,858	2,322	1,848	1,483
3,419	6,076	8,777	11,134	13,251	15,059	16,564	17,300	18,050
867	3,174	5,725	8,011	10,142	12,113	13,900	15,169	16,256
51,144	52,621	53,388	54,601	56,082	58,010	60,129	61,536	63,105
23,463	35,529	43,949	49,040	53,203	56,746	57,905	49,970	41,140
-	-	-	-	-	26	2,225	11,566	21,965
-	-	-	552	1,009	1,413	2,004	2,453	2,823
-	-	-	120	270	592	861	1,003	1,161
-	-	-	-	-	-	740	4,130	4,410
-	-	-	-	-	-	-	684	1,610



Patent Applications





A Timeline of the Group's Major Transformations





Changes in Service Subscription Numbers







*Figures : as of each fiscal year-end

Transformation of the Telephone

1878 **The First Domestically Produced Telephone Set**

In 1876, the world's first telephone set was invented by the American Alexander Graham Bell. In the following year, Bell imported telephones were tried immediately in the Ministry of Industry, while imitations were modeled on this telephone in the machine-building division of the Telegraph Office. The first two telephones were

completed in June of the eleventh year of the Meiji Period (1878). These became the first ever Japanese-made



1987 Cordless Phone Liberalization

With the launch of the first cordless phone in May 1980, it became possible to move around with a regular telephone set. Cordless telephones had been rental commodities in Japan until purchasable types were released October, 1987 when the Wireless Telegraphy Act was revised.

The Howdy Cordless Phone "Passe" was a power saving type, covering a straight

distance of about 100 meters between the base and portable units. The telephone set could remain serviceable for about four hours continuously after being fully charged.



1933 No.3 Desktop Telephone Set

The year 1933 witnesses the birth of a revolutionary new style of telephone that combined transmitter and receiver in one unit. Known as model No. 3, it becomes the basis for all phone models to come and is destined to serve as the typical telephone in Japanese society for some 30 years to come.

1962 The Model 600 Telephone Set

In March, 1962, Tokyo's Akishima Office begins commercial testing of the Model 600 telephone set, considered the highest attainment of voice communications capability and economy. After further commercial testing on a nationwide scale, the Model 600 phone begins full-scale service in 1963. Three colored models, white, gray and green, are introduced in 1971.



1991 **Home Fax Machine** Launched

From around 1991, household fax machines started to be sold. NTT released a low-priced product named "Mr. Den-emon" which gained popularity with the nickname "Den-emon" as extras like answering machines and cordless handsets could be added to it.

The spread of household fax machines was not only a result of the demands from business but those of normal households, too. These led the telephone from being a tool for voice transmission to one also

capable of visual transmission, helping greatly transform the telephone's image.





1998 "Number Display" Service Launched

Prior to the launch of "Number Display (Caller-ID Display Service)" in February 1998, a new digital cordless phone compatible with this service was released in November 1997. Number Display provided a major trigger for the spread of computer telephony which links a PBX telephone system with a computer network.

Furthermore, in comparison with analogue models, the digital cordless phone proved to be a product with vastly improved functions such as call quality and increased privacy.



1900 **Magnet-type Public** Telephone

In September 1900, public telephones, which had until then been set up only within telegraph branch offices and post offices, appeared for the first time in main thoroughfares, transforming the appearance of cities. First, they were set up at Ueno and Shimbashi train stations. The following month, the first outdoor public telephone box was set up near Kyobashi. They rapidly continued to be set up throughout Japan and numbered 463 nation wide around 1910.



1953 **No.4 Automatic Public Box** Telephone

In 1952, after the shortage of coins caused by World War II, 10-yen coins begin to circulate and the following year the coin-operated No. 4 automatic public box telephone was introduced.

They featured a deferred-payment system in which the user dialed

the number and if the call-recipient answered they would push a button and then have 10 seconds to insert a 10-yen coin in order to continue the telephone conversation.



1982 **Card Operated Public** Telephone

In December 1982, a new type of public telephone appears. This phone allows the use of a "telephone card", a magnetized card of the same size as the automated teller cards issued by banks. The user simply inserts the card into the phone to call. No coins are needed, nor is it necessary to continually feed change into the phone for long distance calls. By 1984, phones

are introduced that operate exclusively on calling cards. When the card is inserted in the telephone, the amount of credit left on the card is digitally displayed on the telephone's screen along with a calculation of the amount of remaining call time.





Major Transformations

1969 Push Button Phones

The development of computers created a new field of telecommunications known as data communication. In connection with this development, the "Push Button" telephone was created as a phone with functions beyond just making and receiving calls. It possessed functions such as abbreviated dialing that effectively transformed the telephone's image, and in addition to grey, in 1972 white, green and red colored models became available.



2001 "L-mode" Service Launched

In June 2001, L-mode service was introduced. This service allows customers to enjoy simple e-mail and browser capabilities using household telephones. In May 2001, the "L-mode cordless" series was launched ahead of the service.

Through various initiatives, L-mode proved to be a popular service. However, with the advance of broadband and fiber, L-mode was deemed to have fulfilled its original goal and the service

stopped being offered in March 2010.



Denemon 771blc2

1985 Terminal Equipment Liberalization

In April 1985, the telephone set market in Japan was liberalized, offering users a choice of telephone sets selectable to suit their needs and tastes. This allowed a variety of telephone sets with diversified forms and functions to be released. Among them, the "Response" was a telephone set with an automatic answer function. Telephone sets in the Response series were divided into three types by their answering function: the one which could only send a recorded message, the one which could both send a recorded message and record an incoming message using a single micro-cassette tape, and the one with the same message send/record feature using two standard cassette tapes. The telephone set didn't require special

tapes. The telephone set didn't fec installation and could be set up and ready to use in moments by simply connecting the cable to a modular jack. This made it a popular choice among consumers



2004 "FLET'S PHONE" Launched

In September 2004, the IP-based video phone terminal called "FLET'S PHONE VP1000" for the FLET'S Service was launched.

In comparison with existing ISDN video phone sets, it offers vastly superior audiovisual transmission and has a dedicated web browser and e-mail software for internet and e-mail use. Operated by a user-friendly touch screen for added

customer convenience, it is easy to use even for people without computer experience. There are hopes the product will become the standard.



VP1000

1987 Clover Phone Launched

Although the Push Button "Howdy Home" Series had been the main product line in the single-unit telephone set market since December 1983, in May 1987 the "Clover Phone" with a sophisticated design was released as its successor to meet the needs of the single-unit telephone set market in which OPD and switchable telephone sets were the mainstream. The simple design and reasonable price made this series tremendously popular among single-unit telephone sets.



2009 Hikari Clear Phone Launched

In February 2009, as part of the FLET'S HIKARI NEXT (NGN) service, the "Phone HQ-100" high quality audio telephone began being offered to HIKARI DENWA customers. The product offers customers speech communication across a wider speech bandwidth than the conventional telephony (namely, 7 kHz compared to 3.4 kHz) allowing them to enjoy much clearer conversations.



HQ-100

1990 Digital Public Telephone

In March 1990, the ISDN-compatible "digital public phone" first appears. Adding new functioning to public phones, these phones are able to handle data communication when connected to ISDN or analog terminals such

as personal computers. Beginning in October 1991, further functions were added to existing digital public phones along with a new design.



1999 IC Card Public Telephone

March 1999 saw the appearance of new public telephones using contactless-type IC Telephone Cards. Compared to existing public telephones, the new IC Card Public Telephones are both smaller and designed specifically to support the IC Card's composition and features.



2005 New Model Digital Public Telephone

From February 2005, universal design began to be integrated into new style digital public telephones. The digital public telephones feature universal design components to make them easy for everyone to use such as a coin slot designed for easy and guided coin

insertion, large and easy-to-read keys and LCD displays and an orange backlit LCD display that is easy to see in the dark. The phones are also green in color to make them easily visible and locatable.



Transformation of Mobile Communication Devices

1953-

Maritime Mobile Telephone

In August 1953, the first wireless and mobile shipping telephone service was launched in Japan. In 1959, it was named "Maritime Mobile Telephone" and in 1979 an automatic model of the maritime mobile telephone service started to be offered.



mobile phones were launched.

These were literally handy, with

their reduced size making these

mobile phones truly portable.

1957-

On-board public train telephone

October 1, 1957, the first on-board public train telephone service was introduced by Kinki Railways. This service is later added to Japan National Railways trains from August , 1960, on Series 151 'Kodama' and 'Tsubame' trains on the Tokaido line.

> 2001 Inside a "Tsubasa model train

000

1968-

Quickcast (Pocketbell)

The service began in July 1968 and at its peak in 1997 had over 6.49million subscribers. In March 2007, the service stopped being offered.



on a satellite packet communication

service, the data communication

usage area is expanded.

1991-	1993-	1995-	1996-
mova (Analogue)	Digital mova	PHS	Satellite Mobile Telephone
With mobile phones continuing to become smaller and lighter, in April	A service using a digital (800MHz)	A telecommunications service capable of public telephone calls and data	A satellite mobile/car telephone service using a stationary satellite is

followed by a 1.5GHz

service for the Tokyo

metropolitan area in

1994.

Digita

transmission based on an outdoor wireless network is introduced. On January 7, 2008, the PHS service, fondly known as "PICCHI" stopped being provided.



1997-

PDA(Personal Digital Assistants)

PDA are information devices for personal use that focus on being portable. In general, they can be described as hand-held electronic devices that range from simple electronic address books to those that possess high-level functions to resemble an actual computer.



1979-

Car Telephone

The car telephone service using an 800MHz frequency analogue system (cellular) in major cities was introduced in December 1979. In 1984, the system became available throughout the country.

1985-Shoulder Phone

The out-of-vehicle mobile phone is launched. Weighing 3kg and with a shoulder strap so it could be carried around, it allowed callers to use the phone while away from their cars.

1987-

Mobile Phone

In April 1987, the first mobile phone model, the TZ-802 was introduced. Weighing approximately 900 grams, the earliest models were heavy and large for portable devices.





i-Mode Compatible Models

TZ-801

An online service that can be used accessed with nothing more than a mobile phone is launched. The service quickly gains immense popularity, and at the end of March 2000 has already sold over 5.6 million units in its first year. 2006 1seg Broadcasting Launched Telephone Number Portability System Introduced

FOMA Compatible Models

2001-

The world's first full-scale 3G service is launched, providing new capabilities such as high-speed, large-volume data transmission, video phone calls and video and music services.

2010-

Xi ("Crossy") Compatible Models

When first launched, the service offered a maximum downlink speed of 75Mbps. Starting in October 2013, a maximum downlink speed of 150Mbps became available to users in the Tokyo, Osaka and Nagoya regions.



1999-

DOCOMO Raku-Raku PHONE

This is a series aimed at first-time mobile users and elderly customers. They feature basic and useful functions as well as universal design for exceptionally easy operation.





Mobile Wi-Fi Router

Mobile Wi-Fi router device that allows users to connect to the internet using the mobile phone network is introduced. Personal Computers and other information devices can be connected to the internet via Wi-Fi (wireless LAN).





OMA Compatible Mobile Wi-Fi Router BF-01B



Global Business Development

Providing services in 196 countries and regions Approximately 30% of all employees (approximately 250,000) are located overseas

Japan

169,000 employees

Europe / Middle East / Africa

50 countries 28,000 employees

Asia-Pacific

20 countries 26,000 employees

*Source: Gartner, "Magic Quadrant for Communications Outsourcing and Professional Services," Christine Tenneson, et al. 4 November 2014. "Magic Quadrant for Global Network Service Providers," Neil Rickard, et al. 20 March 2014.

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American continent

8 countries 17,000 employees

Leader Position

Gartner's Magic Quadrant Communications Outsourcing and Professional Services* (dimenson data) Gartner's Magic Quadrant Global Network Service Providers* (NTT Communications)

80% of the Fortune Global 100 are NTT users

Salesforce.com Platinum Cloud Alliance Partner

NTT Group Network

Scale: services in 196 countries and regions World top class level for Global IP backbone traffic (Renesys survey results)

Quality: Industry minimum for delays between main inter-country networks in Japan, America and Asia.

NTT Group Data Center

Scale: Largest total floor space in the world (approximately 1,000,000 square meters) (TeleGeography survey results)

Quality: Tier IV quality line up

Changes to R&D System

1999-

Reform of R&D System with the Reorganization of NTT

1999 July With the reorganization of NTT, the R&D System was also reorganized

Cyber Communications Laboratory Group
Cyber Solutions Laboratories
Cyber Space Laboratories
Information Sharing Laboratory Group
Service Integration Laboratories
Information Sharing Platform Laboratories
- Network Service Systems Laboratories
Access Network Service Systems Laboratories
Science and Core Technology Laboratory Group
- Network Innovation Laboratories
Lifestyle and Environmental Technology Laboratories
- Telecommunications Energy Laboratories
- Photonics Laboratories
- Communication Science Laboratories
Basic Research Laboratories

2012-

Reorganization of R&D System

2012 July

Promotion and strengthening of technological R&D related to ICT services security

Service Innovation Laboratory Group
Service Evolution Laboratories
- Media Intelligence Laboratories
Software Innovation Center
Secure Platform Laboratories
Information Network Laboratory Group
- Network Technology Laboratories
- Network Service Systems Laboratories
Access Network Service Systems Laboratories
Energy and Environment Systems Laboratories
Science and Core Technology Laboratory Group
Network Innovation Laboratories
Microsystem Integration Laboratories
Photonics Laboratories
Communication Science Laboratories
Basic Research Laboratories

2015 -

Strengthening of R&D System

2015 April Strengthening of an R&D System aimed at leveraging ICT to reduce society's environmental impact

Service Innovation Laboratory Group
- Service Evolution Laboratories
Media Intelligence Laboratories
- Software Innovation Center
Secure Platform Laboratories
Information Network Laboratory Group
- Network Technology Laboratories
Network Service Systems Laboratories
Access Network Service Systems Laboratories
Science and Core Technology Laboratory Group
- Network Innovation Laboratories
Device Innovation Center
Device Technology Laboratories
Communication Science Laboratories
Basic Research Laboratories

NTT R&D System



Yokosuka R&D Center • Service Innovation Laboratory Group • Science and Core Technology Laboratory Group

Information Network Laboratory Group



Musashino R&D Center • Information Network Laboratory Group • Service Innovation Laboratory Group • Science and Core Technology

- Laboratory Group
- Intellectual Property Center



Atsugi R&D Center • Science and Core Technology Laboratory Group



Tsukuba R&D Center
• Information Network Laboratory Group

NTT Keihanna Buildings (Kyoto) • Science and Core Technology Laboratory Group



Otemachi First Square East Tower • R&D Planning Department



R&D Center in North America (Palo Alto) • NTT Innovation Institute, Inc.

Main Technological Award

2006(FY)

- Japan Society for the Promotion of Science JSPS Prize
- Psychophysical Studies on the Information Processing of Human Visual Recognition

Maejima Award

• 1-chip MPEG-2 HDTV CODEC LSI "VASA/ISIL"

2007(FY)

•Commendation for Science and Technology by the Minister

- of Education, Culture, Sports, Science and Technology

 Development of Economical Optical Access System with PON Technologies
- Research of a 3-D Display System based on the Discovery and Analysis of a 3-D Visual Illusion

Maejima Award

 Development of a Tbit-class Long-distance WDM Optical Transmission Systems

2008(FY)

- Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology
 - 1-chip MPEG-2 HDTV CODEC LSI "VASA"

Maejima Award

- Development and Internation Standardization of Nextgeneration
- Symmetric-key Encryption Algorithm "Camellia"
- Pioneering Undeveloped Region in Radio Frequency Band by Photonic Technology and Applying to Wireless Communications

2009(FY)

Medal with Purple Ribbon

- Invention of Quartz-based Light Wave Circuit based on Flame
 Deposits
- Nikkan Kogyo Shinbun Japan Industrial Technology Grand Prix
 - Development of Next Generation Network Technology
- National Commendation for Invention The Invention Prize • 1-chip MPEG-2 HDTV CODEC LSI
- Commendation for Science and Technology by the Minister
- of Education, Culture, Sports, Science and Technology
 Research of Highly Efficient Speech and Audio Coding
 Technologies
- Japan Society for the Promotion of Science JSPS Prize
- Search for New Phenomenon in Photonic Crystals and their Application

Maejima Award

- Research of Highly Efficient Speech and Audio Coding Technologies and Their Standardization
- Development of OFDM Wireless LAN Systems
- Development and International Standardisation of
- Electromagnetic Compatibility Related to Telecommunication

2010(FY)

• Commendation for Science and Technology by the Minister

- of Education, Culture, Sports, Science and Technology

 Development of High-capacity Long-haul Optical Transmission
- Systems
- Maejima Award
 - Development and International Standardization of Wideband Scalable Speech Coding Technology
 - Contributions to Research and Development of Fast Search Technologies for Time-series Media Information

2011(FY)

Medal with Purple Ribbon

- Development of High Efficiency Speech and Audio Coding Technologies
- Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology
 - Study on Novel Ways of Light Confinement and Light Propagation Realized in Photonic Crystals
- Maejima Award
 - Pioneering Research Activities for Key Technology of 10 Tbps Class Optical Network

2012(FY)

- Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology
- Development and International Standardization of Measurement Methods of Electromagnetic Compatibility Related to Telecommunication Equipment
- Research on Sub-terahertz Signal Generation Using Photonic Technologies and Its Applications in Wireless Communications

Maejima Hisoka Award

 Professional H.264/AVC CODEC Chip-set for High-quality HDTV Broadcast Infrastructure and High-end Flexible CODEC Systems

2013(FY)

Medal with Purple Ribbon

Research on the Theory of Cryptography and Authentication
 and Development of its Applications

IEEE Milestones

- International Standardization of G3 Facsimile
- National Commendation for Invention
- Efficient Mapping and Time Division Multiplexing for Large Capacity Optical Transport Networks
- Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology
- Research on Large Capacity Optical Transmission Technology Utilizing Coherent Multi-carrier Multi-level Modulation Techniques
- Maejima Hisoka Award
 - Research & Development of Automatic Speech Recognition System for Creation of Meeting Records in Parliament

2014(FY)

Commendation for Science and Technology by the Minister

- of Education, Culture, Sports, Science and Technology
 Optoelectromechanical Hybrid Devices Using Compound Semiconductor Heterostructures
- Development of High-quality H.264/AVC CODEC LSI and Systems

Maejima Hisoka Award

Contributions to Research and Development of "Shabette Concier"

2015(FY)

- IEEE Milestone
 Line Spectrum Pair (LSP) for High-Compression Speech Coding
- The Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology

Prizes for Science and Technology (Research Category)

Invention of Next International Standard Key Cryptosystem

Maeshima Hisoka Award

 High-speed Transferrable 100G Digital Coherent Hikari Network Technology R&D



NTT-A10-year Retrospective 2005-2014

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