http://www.ntt.co.jp/csr_e/

This website provides an overview of NTT Group CSR activities. We also welcome your feedback on this report via the website.

NTT Group
CSR Report 2006

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[About the cover page]
The four spherical objects on the cover page represent the “Four Communication Goals” of NTT Group CSR - communication between people and their communities, communication between people and the global environment, safe and secure communication, and Team NTT communication. The illustration depicts the NTT Group’s vision of enabling an increasingly broad range of communications.
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About the NTT Group CSR Report 2006

The NTT Group CSR Report 2006 is our first Corporate Social Responsibility (CSR) report. Its aim is to foster a broad understanding of the ongoing social, environmental, and economic activities of the NTT Group as a whole.

In fiscal 2006, we established the NTT Group CSR Charter to serve as the basic principles for our CSR activities. This report is therefore issued for the purpose of disclosing information regarding ideas and activities based on the NTT Group CSR Charter, and promoting CSR activities by communicating with our stakeholders.

We would much appreciate receiving your feedback on this report, and we invite you to use the inserted questionnaires, e-mail, or our online surveys. Your views will help us continue to improve the CSR activities and reporting of the NTT Group.

Reporting Period/Scope/Other Matters

- This is a report of the NTT Group’s activities in fiscal 2005 (April 1, 2005 to March 31, 2006), but it also covers certain more recent activities and outlook for the future.
- The figures given for the NTT Group in fiscal 2005 are tabulated from data for NTT (Holding Company), NTT EAST, NTT WEST, NTT Communications, NTT DATA, NTT DoCoMo, and their group companies. The scope of specific reports is noted in relevant areas.
- This report was prepared using the Global Reporting Initiative (GRI) and the Environmental Accounting Guidelines issued by Japan’s Ministry of the Environment as references.
- In this report, “NTT” refers to NIPPON TELEGRAPH AND TELEPHONE CORPORATION, and “NTT Group” refers to NTT and its subsidiaries.
- Should any errors be found in this report after publication, a table of errata will be provided on our website.

Booklet and website versions

As part of our efforts to reduce the consumption of paper resources, this report presents a comprehensive but concise overview of the NTT Group’s CSR activities. Details not included in this report can be viewed on the following website:

http://www.ntt.co.jp/csr/e/

Notes on the website

information in this report

- [URL] indicates that further details are available on the above website.
- [NTT] indicates that information on related topics is provided on the NTT Group website.
- Websites shown as URLs indicate websites other than the NTT Group CSR site.

Editorial notes

- Technical terms are explained on each page.

Message from the President

NTT Group CSR Activities for Creating a Safe, Secure, and Prosperous Society

Recent advances in broadband services and ubiquitous access on a global scale are bringing about major changes in our business environment, with exciting developments such as the convergence of fixed with mobile networks, and of telecommunications with broadcast media and content.

The NTT Group is addressing these changes and making steady progress towards fulfilling the goals of its Medium-Term Management Strategy, building a rich communications environment for individuals and communities. We are also seeking to resolve key issues faced by a rapidly aging society with a shrinking population, such as the provision of nursing and healthcare, disparities in employment supply and demand, crime and disaster prevention, and energy and environmental conservation.

Another area in which we are making major efforts is enhancement of the safety and reliability of our communications network as critical infrastructure from the perspective of business continuity management, to ensure that it can continue to function as a vital lifeline in the event of unexpected failures or disasters. As a corporate citizen, we are also committed to working as one with local communities, and to continuing to contribute to society through various community engagement activities.

To us, corporate social responsibility means making this kind of sustained commitment to working for the betterment of society.

NTT Group companies have long been involved in various activities to fulfill their corporate social responsibilities with respect to society, environment and economy in ways that make use of their respective strengths. However, to enable the NTT Group as a whole to make an even larger contribution to society, in June 2006 we established the NTT Group CSR Charter. We will continue to work as one to enhance the corporate value of the NTT Group and contribute to the creation of a safe, secure, and prosperous society through the group-wide promotion of CSR activities.

We hope that this report will give you a good understanding of our citizenship endeavors.
Ensuring Sound Corporate Conduct, and Contributing to the Creation of a Prosperous Society

Nothing could be more fundamental to the fulfillment of CSR than sound corporate conduct. This required not only compliance with laws and regulations, but also the application of high ethical standards to business conduct (corporate ethics), the active disclosure of financial and other information that the public has a right to know (corporate data disclosure), and mechanisms for the constant monitoring of business conduct (corporate governance). We feel that addressing the expectations of our stakeholders by implementing concrete endeavors based on the principles of the NTT Group CSR Charter - not only in our everyday work, but also through environmental protection and social contribution activities - contributes to our corporate value and our sustained development.

We of the NTT Group believe that by sustaining such activities, we can contribute to the creation of a safe, secure and prosperous society through communications that serve people, communities and the global environment.

NTT Group CSR Charter

The NTT Group has long sought to fulfill its responsibilities as a corporate citizen and contribute to the sustained development of society as a basic management stance through implementing a range of CSR activities. However, to address growing expectations in the NTT Group as a whole, we drew up the NTT Group CSR Charter in June 2006 to define fundamental principles for the active implementation of CSR activities by group companies. The NTT Group CSR Charter, which consists of a statement of our commitment and four CSR goals linked by the common theme of communication, is now the basis on which the member companies of the NTT Group unite in the implementation of CSR activities.

[Our Commitment]

As a leader of the information and telecommunications industry, the NTT Group is committed to providing reliable, high-quality services that contribute to the creation of a safe, secure and prosperous society through communications that serve people, communities and the global environment.

[Our CSR Goals]

1. We shall strive to create a richer and more convenient communications environment, and utilize our technology to contribute to the resolution of the various issues faced by societies with aging and declining populations.

2. We shall strive both to reduce our own environmental impacts and build environment-friendly forms of communications, and to provide information and communications services that help to reduce the impact of society as a whole on the global environment.

3. While striving earnestly to ensure information security and resolve telecommunications-related social issues, we shall do our utmost to provide a safe and secure user environment and contribute to the creation and future development of communication culture.

4. Fully recognizing the role that telecommunications play as critical infrastructure supporting society and protecting our livelihoods, we shall strive to offer secure and reliable telecommunications services fortified to withstand disasters and capable of connecting people irrespective of time, location and other circumstances.

5. All of us on Team NTT pledge to perform our duties with pride and a keen sense of responsibility in compliance with the highest of ethical standards, striving to fulfill our mission to society by working both for our own development as professionals, and for the further development of a flourishing and vibrant community.

The NTT Group’s vision of communications

To us, communications means enabling people to communicate with each other by leveraging our human resources and technology to build a safe and secure infrastructure and provide the best possible and most trustworthy services.
Basic Stance

The NTT Group considers corporate governance to be a matter of vital importance in maintaining the public’s trust and ensuring its sustained development. The Group’s corporate governance efforts are directed at ensuring the following:

1. Sound management
2. Appropriate decision making and execution of business
3. Clear accountability
4. Full compliance with laws and regulations

Composition of Board of Directors and Board of Audit

NTT, which is the NTT Group’s holding company, maintains a board of 11 directors, two of whom are outside directors. In principle, the board of directors meets once per month to make decisions and report on important management issues. NTT maintains a board of audit, which is composed of five members, referred to as corporate auditors, of whom three are outside corporate auditors.

Senior Management Council and committees

In principle, important company matters are discussed and decided by NTT’s Senior Management Council, which is made up of the President, Senior Executive Vice Presidents, full-time directors, and other senior leaders. This council meets once every week or two, and held 33 meetings in fiscal 2005. As a holding company responsible for unifying and coordinating NTT Group activities, NTT also operates a number of committees to discuss specific matters related to group management strategy and to promote efficient group management. In principle, each committee is chaired by either the President or a Senior Executive Vice President, and has a membership composed of directors and other senior executives involved in the specific areas for which each committee is responsible. Committee meetings are held as occasion demands.

In 2005, NTT also established an advisory board for the purpose of gathering information relevant to management decisions concerning international business.

Internal Control System

In conjunction with the coming into effect of Japan’s new Corporation Law (Law No.86 of 2005) in May 2006, NTT drew up and adopted a basic policy related to the creation of a system of internal controls for the NTT Group as a whole. Our basic approach to internal controls is as follows:

1. NTT will maintain a system of internal controls, including measures for the prevention and minimization of losses, to ensure compliance with applicable laws, appropriate risk management, and proper and efficient business operations.
2. To maintain the above system of internal controls, NTT will establish an Internal Control Office to oversee the establishment and maintenance of rules and structures. It will also evaluate the effectiveness of internal controls and make necessary system revisions through reviewing audits and implementing unified audits of shared areas of business that pose a high risk to the NTT Group as a whole.
3. NTT will also take appropriate measures to ensure the reliability of its system of internal controls based on the US Public Company Accounting Reform and Investor Protection Act of 2002 (Barbarians-Oxley Act) Sections 302 (disclosure controls) and 404 (internal control over financial reporting).
4. As the chief executive officer, the President will be responsible for ensuring the establishment, maintenance and operation of the system of internal controls.

Audits by the Auditors

Each corporate auditor of NTT audits the performance of NTT’s directors in the execution of their duties as occasion demands. The corporate auditors also endeavor to strengthen the auditing system by working closely with the NTT Group’s audit firm through means such as periodic discussion of audit plans and results.

Internal Audits

Internal audits examine the status and operation of internal controls of the NTT Group as a whole. The Internal Control Office established in May 2006 will continue the work of building, operating and improving internal control systems across the NTT Group, including IT controls.

Corporate Governance Structure

General Meeting of Shareholders

Election/Removal

Election/Removal

Election/Removal

NTT Group CSR Organization

NTT created a Corporate Social Responsibility (CSR) Committee chaired by a Senior Executive Vice President in June 2005 to establish a clear management structure for the implementation of the NTT Group’s CSR activities. The CSR Committee drew up the NTT Group CSR Charter based on its discussions of the CSR activities of the NTT Group, and it will serve as a vehicle for ongoing discussions on the implementation of the NTT Group’s CSR initiatives. Group companies are also working to establish structures, including CSR Committees, to promote their own CSR initiatives.

Corporate Ethics

The NTT Group has taken various measures to enhance corporate ethics based on a core belief that it is imperative to manage business in compliance with laws and the highest ethical standards. In November 2002, we adopted the NTT Group Corporate Ethics Charter as a code of conduct applying to all directors and employees, and at the same time set up a Corporate Ethics Helpline. This facility provides not only an internal helpline for reporting and consulting on ethics issues by NTT Group employees, but also an external helpline utilizing the services of attorneys. The Corporate Ethics Helpline acts on enquiries irrespective of whether callers choose to remain anonymous or not. NTT has always taken care to protect the rights of whistleblowers, but with the coming into effect in April 2006 of Japan’s Whistleblower Protection Act and guidelines for private businesses, we have revised some of our internal rules and the establishment as mentioned above of an external helpline for non-employees.
Feature 1

Addressing Issues Related to Population Decline and the Aging of Society

The NTT Group is applying its expertise in ICT to address issues related to population decline and the aging of Japanese society by creating the infrastructure for ubiquitous broadband communications that can contribute to a higher quality of life for everyone.

Putting ICT to use in easing worries about the future

Japan is currently facing a wide range of social issues related to a declining population, the aging of society, emerging nursing and healthcare needs, disparities in employment supply and demand, environmental protection, energy conservation, disasters and rising crime.

The NTT Group is striving to help create a safe, secure and prosperous society through applying its expertise in ICT to address these issues. These efforts also contribute to the achievement of the ICT policies being pursued by the Japanese Government to maintain the vitality of Japan’s aging society.

Pressing social issues in Japan

- Energy and the environment
  - Finding solutions with ICT: page 16
  - Communication between people and the global environment
- Declining population and aging society
  - Nursing care and welfare service needs
- Healthcare issues
  - Employment disparities
  - Finding solutions with ICT: page 30
  - Safe and secure communication
- Countering crime and natural disasters
  - Finding solutions with ICT: page 10

Key efforts to find solutions using ICT

- Remote monitoring services for senior citizens: page 9
- Teledicine services: page 15
- Nursing and medical care support services: page 15
- Provision of secure living environments for people with disabilities: page 14
- Teleworking support and expanded employment opportunities: page 15

Pioneering efforts to find solutions to emerging nursing and healthcare needs

The NTT Group is working on various measures to address the nursing and healthcare needs that come with a declining population and aging society. We are, for example, developing and supplying telemedicine solutions that use ICT-based health monitoring and video diagnosis, and also technologies and systems for sharing data and information between diverse healthcare systems. We have also launched services and pilot projects in the field of remote monitoring of senior citizens living on their own to help relieve anxiety by enabling relatives to watch them from a distance.

Terminology

ICT: Information and Communication Technology
Ubiquitous: Access to information and communications via information networks such as the Internet irrespective of time and place.

Neighborhood communication support services through collaboration with local communities

Providing desired welfare services

In March 2003, the town of Kijo, located in a mountainous region of Miyazaki Prefecture, laid some 100 kilometers of optical fiber cables in an effort to bridge the digital divide in this area. The following month, NTT WEST began providing Internet access, local administration information services, and health management services via broadband Internet. At the same time, NTT WEST and Kijo’s local government held intensive discussions with residents aimed at further tailoring these services to their specific needs. In response to community requests, a neighborhood communication support service was designed specifically for the purpose of helping elderly people, with trials starting in March 2005.

The neighborhood communication support service provided by NTT WEST and NTT Laboratories is built around a service that connects Kijo’s elderly people with their family, friends or social workers and enables non-intrusive monitoring of each other’s presence at home. Additional features include TV phone, handwritten message service, and disaster and emergency notification services.

Yoshishiro Ito of Research Engineer, Communication Innovation Group, Environmental Information Systems Project, NTT Energy and Environment Systems Laboratories comments that, “It’s an easy-to-use system and has been well-received by elderly people. They are able to feel connected with others by observing the cute fish icons swimming around on the screen. All they have to do is touch a fish to initiate communications with the person it represents. The trial was initially planned to last for three months, but was extended to six months in response to strong demand from residents.”

Creating communication opportunities within local communities

The trial service helped local residents to keep an eye on neighbors who may need assistance, and contributed to a revitalized sense of community. Welfare volunteers are grateful for the system since it enables them to check frequently on how people on their lists are doing. Some elderly people have also told us that it made keeping in contact with others enjoyable and provided them with an incentive to start learning how to use computers. Based on the results of the trial, Kijo is now moving towards full deployment of the system. The NTT Group will continue in such efforts to bring the information age to remote regions, and to promote the use of ICT-based welfare services to overcome the issues facing Japan’s aging society.

“We visited the home of each user and asked what they thought of the service. Some people told us that they kept pressing the keys twice by habit, and others that the characters were too small to read. We made use of such feedback to resolve usability problems.” (Yoshishiro Ito)

How the neighborhood communication support service works

Kijo FTTH network

Home of elderly person’s family members living elsewhere

Communications equipment

Home of elderly person’s family members living elsewhere

Communications equipment

NTT WEST Kijo Bizd.

Optical fiber cable

Internet

NTT WEST Kijo Bizd.

Home nursing care center

Communications equipment

Elderly person’s home

Communications equipment

Volunteer’s home

Communications equipment

Server

Kijo Town Hall

Communications equipment

Terminology

ICT: Information and Communication Technology
Ubiquitous: Access to information and communications via information networks such as the Internet irrespective of time and place.

Digital divide: Inequality in access to services between people who can and cannot use computers, the Internet, and other information technology.
FTTH: Fiber To The Home — optical fiber-based data communications services to homes.
Addressing Social Issues and Creating New Value for Society through Ubiquitous Broadband Communications

Society in the coming age of ubiquitous broadband communications

Imagine a world in which you can communicate with others anytime and anywhere. This is our vision for society in the age of ubiquitous broadband communications, a society in which everything in daily life is connected by high-speed high-capacity networks, and where anyone can use these networks to acquire information and enjoy safe, secure, and convenient information and communications services.

In this future world, fixed and mobile networks and the various technologies that support them will reach into every corner of daily life and provide the optimum living, working, and learning environment for everyone. For example, the use of IC tags will enable stress-free shopping by making it possible to find desired goods and products quickly and eliminating cash register lines. The networks will also enable the sharing of knowledge at a level that will open up new educational and business opportunities. Furthermore, enhanced traffic and route information services will help to ease traffic congestion, and ICT-driven efficiencies in the movements of people and goods, and in manufacturing and other social and economic activities will lead to energy savings, reducing environmental impacts and contributing to the creation of a sustainable society.

This world of ubiquitous broadband communications - a world that promises to bring people closer to each other and enrich their personal lives is just around the corner.
1-2 Developing the infrastructure for ubiquitous broadband services

The NTT Group’s Medium-Term Management Strategy for Supplying Ubiquitous Broadband Services

- Promoting B FLET’S optical fiber Internet access service, FOMA third generation (3G) mobile communications services and the convergence of fixed line and mobile communications
- Building safe, secure, and convenient next-generation networks
- Continuing research and development into basic technologies for ubiquitous broadband services

Laying the way for an age of ubiquitous broadband communications

The NTT Group is committed to promoting B FLET’S optical fiber services and FOMA third generation (3G) mobile communications services as part of its efforts to supply ubiquitous broadband communications. We are making considerable efforts to expand our optical fiber service areas and provide IP telephony services of a quality that only optical fiber networks can deliver, as well as provide customers with convenient services through alliances with Internet service providers, broadcasters, and other content providers. In the field of 3G mobile communications, we are striving to enrich our lineup of handsets and provide an increasing diversity of services such as newly developed mobile credit services. We will continue to develop and deploy ubiquitous broadband services through pursuing fixed mobile and broadband convergent services, and enhancing Internet connection portal that will contribute to the proliferation of the broadband infrastructure.

Building next-generation networks

The NTT Group is committed to promoting the building of next-generation networks (NGN) to provide safe, secure, and convenient ubiquitous broadband services. NGN technology is designed to combine the high quality, reliability, and stability of fixed line services with the flexibility and economy of IP network services in the building of an open network capable of maintaining the highest levels of security. Field trials are scheduled to commence in December 2006 in cooperation with other telecommunications carriers and service providers.

Initiatives

Ubiquitous broadband services offered by NTT

Utilizing a ubiquitous broadband infrastructure combined with streaming technologies for audio and video content, the NTT Group offers services – NTT Communications’ OCN Theater and PlaNet Networks’ 4H MEDIA – that allow subscribers to enjoy high quality and high-definition movies and satellite broadcasting content on their own TVs. High-quality broadband content is already available to a large number of customers through services such as these, and we will continue to explore the full potential of ubiquitous broadband communications in the development of new services for our customers.

Research and development to support ubiquitous broadband communications

Under its Medium-Term Management Strategy, the NTT Group is committed to continued research and development of new technologies for achieving a safe and secure full IP next-generation network infrastructure and a wide range of application services for this network, including ubiquitous broadband services based on fixed-mobile convergence, realistic interactive video communications and global one-stop services. We continue to promote close-knit collaboration among group companies in basic research and development for the building of next-generation networks. We are also committed to bringing new technologies into the mainstream to benefit society through partnerships with other companies and proactive development of advanced basic technologies aimed at surpassing current limitations to build the communications networks that will be required by society ten years or more in the future.

Initiatives

- Developing and proliferating new types of optical fiber cord

In November 2005, NTT Access Network Service Systems Laboratories announced the development of a new optical fiber cord that can be flexibly bent, folded, or even tied in knots without affecting communication. Bending or folding conventional optical fiber cords beyond a certain degree can cause breaks in communication due to signal leakage, but because the new cord poses no such problems, it is remarkably easy to handle, and can be installed using standard electricity cords. This represents a major improvement in efficiency during installation.

- Experimenting with next-generation portal technology at goo Labs

NTT Resonant demonstrates the latest Web technology for the age of ubiquitous broadband communications at its experimental website called “goo Labs” which is provided by the Internet portal site “goo”. From August to November 2005 and again from December 2005 to March 2006, Kanshigatos Antenna (interest antenna) and BLOGRANGER – two new search services which provide users with search results from the latest news articles and blog postings tailored to their specific areas of interest – were tested and evaluated in a fully operational environment on the goo Labs website. These services make use of new search technologies developed by NTT Cyber Solutions Laboratories, including Japanese language conceptual filtering, a technology designed to help users find the information they seek even when they are unable to think of definitive keywords.

- Experiments in digital cinema: distribution of Hollywood movies to theaters

The NTT Group has commenced the trial operation of 4K Pure Cinema, the world’s first network distribution of movies in high-quality digital form to theaters. Carried out with the cooperation with both American and Japanese movie distributors, including major Hollywood studios, digital data is distributed by means of a high-speed network connecting America and Japan via optical fiber cable. Trials have been carried out to study distribution processes between studios and theaters and to verify the feasibility of this digital cinema business model. Since its inception in October 2005, ten companies have joined the trial, and the number of available movies and participating theaters is steadily increasing. This effort to promote the spread of digital cinema — the next generation of movie projection technology — is aimed at improving and enriching moviegoer experiences.

Terminology

- 4K: A digital video format with a resolution of 4,096 x 2,160 pixels. The name “4K” comes from the number of horizontal pixels.

WEB Development of a multi-point wideband IP conference phone with directional automatic gain control · Lossless coding technology for audio signals · Video server capable of simultaneous transmission of up to 10 HDTV video streams · Super-high-definition video IP streaming experiment

WEB Preinstalled optical wiring kit for FTTx · Research and development of terabit-class networks · Next-generation mobile communications systems

WEB OCN Theater’s screenshot

WEB goo Labs website

WEB The digital cinema system installed in movie theaters
1-3 Addressing issues related to population decline and aging society

Leveraging ICT to Support Nursing Care and Social Services, Implement Telemedicine and Preventive Healthcare, and Contribute to the Creation of Diverse Work Environments

Helping to provide peace of mind to seniors and people with disabilities
Support for telemedicine systems that enable remote medical examinations
Driving the diversification of work environments through leveraging ICT to enable teleworking and other work styles

Support of nursing care and social service programs

With declining population and the aging of society, more and more senior citizens and people with disabilities require support to be able to lead safe and secure daily lives. The NTT Group is working to address the needs of these communities through utilizing ICT to develop support for nursing care and welfare services. This includes the consideration of community design that enables all people to live in safety and security, and initiatives that leverage communications technologies to enable anyone to obtain the information they need.

Initiatives

Broadband-enabled systems for the prevention of long-term nursing care
The NTT Group conducted experiments in July 2005 to test a broadband-enabled system for preventive healthcare aimed at avoiding the need for long-term nursing care at a later date. The system supports the total spectrum of such preventive healthcare, from health examinations to guidance for maintaining health, including a rich menu of advice for improving motor functions, diets, and oral functions. The system utilizes video communications for enjoyble use at home as well as nursing homes and public facilities. We will continue to invest in such ICT-based efforts to alleviate instructor shortages and support the prevention of long-term nursing care with the aim of contributing to the overall vitality of Japanese society.

Trial service for emergency messages via text and sign language
Most of the data information devices and services available today feature text and voice messaging for people with normal hearing, but those with hearing impairments need easy-to-understand information services in sign language to help them participate more fully in society. To this end, NTT Cyber Solution Laboratories in cooperation with Hitachi, Ltd. in April 2006 launched a trial of a new system for sending emergency messages via text and sign language. Once this new technology is broadly deployed, it will be possible in the event of disasters to inform all members of the general public, including those with hearing impairments, in trains, buses and other public spaces where information via TV, telephone, and other familiar information is unavailable.

ICT-based support for medical services

Seniors living far from hospitals and nursing care facilities or who otherwise have trouble finding transportation to such facilities can well appreciate the convenience of a system that allows them to receive medical examinations and nursing care services remotely. The NTT Group is applying its expertise in ICT to these and other issues through the development of solutions that will help maintain the vitality of Japan’s aging society.

Initiatives

Verification testing of a TV phone service for medical examinations at home
The NTT Group is leveraging ICT to develop telemedicine services. In July 2005, NTT Communications, in cooperation with NEC Networks & System Integration Corporation and Akihikawa Medical College, launched the trial operation of a TV phone medical examination service. This system allows users to undergo medical examinations in their own homes by transmitting blood pressure, electrocardiogram, and other data to the hospital. This system was used for performing actual examinations on patients from the fall of 2005 until March 2006.

Telemedicine system
The Asahi Clinic in Tadami Town, Fukushima Prefecture began operation in August 2005 of a telemedicine system provided by NTT EAST. This system connects Asahi Clinic with the Fukushima Prefectural Aizu General Hospital via a high-speed optical fiber cable system that enables doctors at the clinic to transmit CT, MRI, and other data to the general hospital, where it can be used in consultation with specialists.

Providing a variety of work environments

Faced with a declining population, Japan urgently needs to create a diversity of work environments to maintain a sufficient workforce. To ensure that people from all stations of life are able to find stable work, including people with disabilities, the elderly, those raising young children or nursing family members, the NTT Group is using ICT to help create a variety of work environments.

Initiatives

Expanding employment opportunities with the Digital Map Virtual Factory
Opened in July 2003, NTT Neomeit’s Digital Map Virtual Factory is a virtual community where staff members living in different locations are able to work together in the creation and maintenance of digital map data via a broadband network. Staff members include people with disabilities who are unable to commute to work easily, and also those who are unable to work regular hours because they are raising small children. The Digital Map Virtual Factory is contributing to the expansion of employment opportunities, and currently (2006) boasts three group offices and a workforce of 129 teleworkers. NTT Neomeit has also launched a new business producing digital cartoon content for mobile phones, and further employment opportunities are expected to be generated on an ongoing basis.
Using ICT to Reduce Environmental Impacts

The NTT Group’s Vision for Environmental Contribution — reducing impacts by providing ICT services.

The NTT Group’s Vision for Environmental Contribution

In May 2006, the NTT Group announced its Vision for Environmental Contribution — a statement of its approach to reducing the environmental impacts of human society as a whole through the provision of ICT services. Our efforts to contribute to environmental protection have up to now been based on the NTT Group Ecology Program 21, our basic concept regarding environmental issues. Activities have included reducing the environmental impacts of our own business and developing environmental technology to reduce the environmental impacts of society as a whole. Our Vision for Environmental Contribution clarifies our basic concept for providing ICT services that will enable our customers as well as society as a whole to reduce environmental impacts. It also defines our CO₂ reduction target for 2010 and the activities we intend to undertake to achieve that target.

Achieving our Vision for Environmental Contribution

Our Vision for Environmental Contribution is a statement of our approach not only to reducing the environmental impacts of our business activities and implementing initiatives that benefit the environment such as afforestation and environmental education, but also to contributing to environmental conservation through our business activities themselves by expanding the availability of ICT services.

Promoting ICT from the standpoint of environmental conservation

Finding ways to contribute to the environment through our business

“We’ve been working to reduce the amount of paper and electricity used and waste generated, but there’s a limit to how much we can do.* “Can’t we reduce environmental impacts through our business operations themselves?” These are questions that came up in heated discussions held in the spring of 2002 at NTT WEST-CHUGOKU (then NTT WEST Hiroshima Branch) on how to contribute in environmental conservation and earn ISO14001 certification. “We believed that ICT services could reduce environmental impacts, but had no concrete evidence to prove it. This made it difficult to convince other people,” recalls Hirofumi Moriwaki of NTT WEST-CHUGOKU.

Tuning point: NTT Group workshop for environmental personnel

Things changed in January 2003, when the NTT Group held a workshop for personnel in charge of environmental issues. The NTT Information Sharing Laboratory Group reported on a method for quantifying and measuring the effectiveness of ICT services in reducing environmental impacts. NTT WEST-CHUGOKU decided that this could be used effectively to convince customers of the benefits of ICT in terms of reducing environmental impacts, and launched a joint study with NTT Information Sharing Laboratory Group to calculate the actual scale of those benefits. The first customer chosen to test its findings was RCC BROADCASTING CO., LTD., a regional TV station that was planning to deploy new equipment for digital broadcasting services.

Live television broadcast system using B FLET’S

Conventional live television broadcast systems transmit microwave signals from outside broadcast vehicles to the main broadcast station via relay stations. Instead of using microwaves, NTT WEST-CHUGOKU proposed a digital live television broadcast system that uses NTT’s B FLET’S optical fiber network. In order to make B FLET’S video transmission work for commercial broadcast, NTT WEST-CHUGOKU’s technical team gained the cooperation of manufacturers and RCC Broadcasting for the development of equipment and trial services. Meanwhile, the Laboratory Group managed to calculate how this system could reduce impacts on the environment. “Calculations showed that it could reduce CO₂ emissions by 75%, proving that it would be highly effective in reducing environmental impacts,” says Takashi Sawada, Senior Research Engineer (Supervisor) for the Environmental Management & Planning Department.

Activities for achieving our targets for 2010

1. Increase subscriber base for optical fiber services that enable lower impact lifestyles and business models
2. Expand ubiquitous broadband services
3. Reduce the environmental impacts of our business activities
4. Reduce the electrical power required by customers’ communications equipment
Establishing and Promoting Basic Policies, and Striving for Global Environmental Protection through Group-Wide Efforts

- Establishment of the NTT Group Global Environmental Charter and Green Guidelines based on the NTT Group Ecology Program 21
- Implementation of effective environmental management through creation of a group-wide organization for promoting environmental protection
- Promoting efficient environmental management since fiscal 2000 through environmental accounting

NTT Group Ecology Program 21

The NTT Group Ecology Program 21 was formulated in 1999 to serve as the basic concept for NTT Group environmental action programs. It consists of three core elements: the NTT Group Global Environmental Charter, which describes the basic principles and policies underlying our environmental action programs; Contributions to Local Environmental Protection, under which we carry out community-based activities as a member of the local community; and Environmental Technology R& D for addressing environmental issues through the development of new technologies such as those for energy conservation. Based on this concept, the NTT Group is conducting a wide range of environmental protection activities to contribute to a sustainable society.

Organization for promoting environmental protection

In 2005, the NTT Group established a CSR Committee charged with overseeing Group CSR activities. And under this committee, the NTT Group Global Environmental Protection Promotion Committee was established as a decision-making body for group environmental protection activities that works in close cooperation with the NTT Global Environmental Protection Office and departments in charge of environmental issues in individual group companies.

The Global Environmental Protection Promotion Committee oversees several other committees, including the Greenhouse Gases Reduction Committee, Waste Disposal and Recycling Committee, and the Environment and ICT Committee together with their subordinate working groups and group-wide environmental projects. The committee is also responsible for establishing basic policies, managing objectives, and resolving issues.

[The NTT Group organization for promoting environmental protection] (as of July 2006)

- Greenhouse gases Reduction Committee
- Waste Disposal and Recycling Committee
- Used Communications Equipment WG
- Office Waste WG
- PCB Storage & Disposal WG
- Environment and ICT Committee
- Construction Waste Recycling Group WG
- Green R&D Guidelines WG
- Impact Evaluation WG

- Projects
  - Project to Support Environmental Consulting
  - Consolidated Environmental Accounting Project

- Legend
  - Holding Company Organizations
  - Group Company Organizations
  - Committee, WGs, etc.

- NTT Group CSR Organization

Green guidelines

The NTT Group has established three sets of green guidelines in line with our business activities that are intended to help achieve reductions in environmental impacts. To ensure that we and suppliers continue to contribute to environmental conservation, our Green Procurement Guidelines call for such measures as the minimal use of hazardous substances and the use of materials suitable for recycling, and also stipulate criteria for evaluating the environmental conservation efforts of suppliers. The Green R&D Guidelines stipulate criteria for evaluating the effectiveness of methods, processes, and results of our R&D activities in reducing environmental impacts. The Green Design Guidelines for Buildings stipulate criteria for evaluating seven categories in the area of construction and maintenance of buildings, including extension of operating life, with the aim of reducing building-related environmental impacts.

Environmental accounting

The NTT Group introduced environmental accounting in fiscal 2000 to boost the efficiency and effectiveness of its environmental conservation efforts through quantitatively determining both the cost of environmental conservation programs undertaken as part of its business activities and the returns gained. Environmental conservation costs for fiscal 2015, including investments in energy conservation measures, totaled 6.6 billion yen, and as one quantitative result, yielded a 96.4 billion yen reduction in CO2 emissions. The economic benefit of these programs amounted to 47.26 billion yen, which included reduced procurement costs for new communications equipment thanks to the reuse of existing equipment, and reduced electricity costs thanks to energy-saving measures.

Environmental conservation costs

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>CO2 emissions (100 million yen)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 2015</td>
<td>264.5</td>
</tr>
<tr>
<td>FY 2016</td>
<td>255.6</td>
</tr>
<tr>
<td>FY 2017</td>
<td>249.9</td>
</tr>
<tr>
<td>FY 2018</td>
<td>244.0</td>
</tr>
<tr>
<td>FY 2019</td>
<td>236.3</td>
</tr>
<tr>
<td>FY 2020</td>
<td>227.2</td>
</tr>
</tbody>
</table>

Environmental conservation benefits

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>CO2 emissions (100 million yen)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 2015</td>
<td>38.4</td>
</tr>
<tr>
<td>FY 2016</td>
<td>38.5</td>
</tr>
<tr>
<td>FY 2017</td>
<td>38.6</td>
</tr>
<tr>
<td>FY 2018</td>
<td>38.7</td>
</tr>
<tr>
<td>FY 2019</td>
<td>38.8</td>
</tr>
<tr>
<td>FY 2020</td>
<td>38.9</td>
</tr>
</tbody>
</table>

Note: The NTT Group introduced environmental accounting in fiscal 2000 to boost the efficiency and effectiveness of its environmental conservation efforts through quantitatively determining both the cost of environmental conservation programs undertaken as part of its business activities and the returns gained. Environmental conservation costs for fiscal 2015, including investments in energy conservation measures, totaled 6.6 billion yen, and as one quantitative result, yielded a 96.4 billion yen reduction in CO2 emissions. The economic benefit of these programs amounted to 47.26 billion yen, which included reduced procurement costs for new communications equipment thanks to the reuse of existing equipment, and reduced electricity costs thanks to energy-saving measures.
2-2 Reducing the environmental impact of our operations

[2-2-1 Overview of the environmental impact of the NTT Group]

Continuing Efforts to Reduce the Environmental Impact of Individual Processes of Our Business Activities

- Striving to achieve major targets in our action plan through preventing global warming, and reducing waste and paper consumption
- Identifying and reducing environmental impact of all business processes from procurement to distribution, construction work, operations, provision of products and services, and recycling

### NTT Group Principle Activity Plan Targets (by 2010)

<table>
<thead>
<tr>
<th>Prevention of global warming</th>
<th>Waste reduction</th>
<th>Reduction in paper use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce CO₂ emissions per subscriber by at least 35% for all telecommunications carriers. (Telecommunications carriers: NTT EAST, NTT WEST, NTT Communications, NTT DoCoMo)</td>
<td>Reduce amount of final disposal waste to no more than 15% of 1990 levels.</td>
<td>Reduce consumption of virgin pulp to 80% or less of 1990 levels. (This target has been achieved as of fiscal 2004.)</td>
</tr>
</tbody>
</table>

### NTT Group Businesses

<table>
<thead>
<tr>
<th>Category</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virgin pulp consumption</td>
<td>26,000 tons</td>
</tr>
<tr>
<td>Power consumption</td>
<td>8.23 billion kWh</td>
</tr>
<tr>
<td>Fuel consumption</td>
<td>63,000 s/d</td>
</tr>
<tr>
<td>Gas consumption</td>
<td>70.17 million m³</td>
</tr>
<tr>
<td>Water consumption</td>
<td>15.50 million m³</td>
</tr>
</tbody>
</table>

### Input

- R&D/Procurement
- Paper used for printing telephone directories
- CO₂ emissions due to R&D
- CO₂ emissions due to distribution of new telephone directories
- CO₂ emissions caused by deploying/removing cables
- CO₂ emissions due to internal distribution
- CO₂ emissions due to power consumption, etc.

### Output

- COLLECTION of used products
- Amount of used telephone equipment returned from customers
- Recycling rate for mobile phones
- Selling price of used products

### Customers

- Corporations
- Individuals

### NTT Group Principle Activity Plan Targets (by 2010)

- Reduce CO₂ emissions per subscriber by at least 35% for all telecommunications carriers. (Telecommunications carriers: NTT EAST, NTT WEST, NTT Communications, NTT DoCoMo)
- Reduce CO₂ emissions per unit of sales by at least 25% for all other group companies. (Other group companies: NTT DATA, NTT COMWARE, NTT FACILITIES, etc.)
- Reduce amount of final disposal waste to no more than 15% of 1990 levels.
- Reduce consumption of virgin pulp to 80% or less of 1990 levels. (This target has been achieved as of fiscal 2004.)

### Waste

- Amount of waste recycled
- Amount of waste reduced by incineration
- Amount of waste recycled

### Paper

- Recycled paper content
- Recycled paper content

### Suppliers

- Virgin pulp
- Power
- Fuel
- Gas
- Water

### Notes

1. Products that meet the rigorous environmental criteria stipulated by NTT EAST and NTT WEST
2. Research and development by NTT (Holding Company) Laboratories
2-2 Reducing the environmental impact of our operations

[2-2-2 Global warming prevention measures]

Proactive Energy Conservation and Other Measures to Prevent Global Warming

- Promoting group-wide power consumption reductions through the Total Power Revolution campaign
- Working to improve global warming prevention emissions intensity index through the further deployment of energy-efficient ubiquitous broadband services

Preventing global warming

Over 90% of the NTT Group’s CO2 emissions are attributable to electrical power consumption related to the provision of information and communications services, a situation that prompted the NTT Group to launch its Total Power Revolution (TPR) campaign and work as one to conserve energy. Thanks to T-PR campaign programs that encouraged the introduction of energy-efficient electrical power and air conditioning equipment, the Group reduced its electrical power consumption in fiscal 2005 by 170 million kWh. Despite this reduction, however, 4.763 million tons of CO2 emissions were attributable to NTT Group companies in fiscal 2005, a major increase over the previous year. Part of this increase, however, is the result of revisions to the formula used to convert electrical power consumption to CO2 emissions. Our global warming prevention emissions intensity index (see page 21) also rose compared with the previous year for both our telecommunications carriers and our other group companies. However, evaluating this year’s performance with the same formula used in last year’s evaluation results in an improvement of approximately 5% to the emissions intensity index by non-carrier group companies due to lower electrical power consumption in office buildings. In contrast, our telecommunications carriers showed an approximately 1.6% increase due to expansion of facilities for broadband and mobile phone services. In the light of these figures, the NTT Group recognizes the need to continue with its efforts to install energy-efficient equipment and implement other measures to achieve its emissions intensity reduction target for the prevention of global warming.

- In March 2006, revisions to the Law Concerning the Promotion of the Measures to Cope with Global Warming changed the conversion factor for kilograms of CO2 emitted per kWh of electrical power consumption from 0.379 kg/kWh to 0.559 kg/kWh for fiscal 2004 to 0.559 kg/kWh for fiscal 2005.

Initiatives

Efforts in line with Tokyo’s program on measures against global warming

The Tokyo Metropolitan Government in March 2005 revised its Ordinance on Environmental Preservation and instituted a CO2 Emission Reduction Plan. This project requires businesses that emit more than a certain level of greenhouse gases to prepare and submit plans for preventing global warming and to report results. Reports are required at both interim and final stages, and all plans and reports are evaluated and published. Of the plans submitted by NTT group companies for their buildings, 13 received the highest “double A” grade in planning stage evaluations announced in December 2005.

NTT Communications’ main building in Tokyo’s Otemachi is notable for having been designed specifically with energy conservation in mind. The air conditioning system for its communications equipment room features various innovations that have earned it a spot on the Tokyo Metropolitan Government’s website as an example of ingenuity in appropriate temperature control.

![Graph showing CO2 emissions from business operations, telecommunications carriers, and other group companies](image)

2-2 Reducing the environmental impact of our operations

[2-2-3 Reducing waste]

Achieving Major Reductions in Waste through Aggressive Reuse and Recycling

- Amount of final disposal waste for fiscal 2005 reduced to 40,000 tons, surpassing the 2010 target of 72,000 tons for second consecutive year
- 99.5% of used communications equipment recycled to achieve second consecutive year of zero emissions

Waste management measures

Having committed itself to reducing the final amount of waste to 15% or less of its 1990 level by 2010, the NTT Group is now promoting 3R (reduce, reuse, and recycle) programs in the areas of used communications equipment, construction waste, civil engineering works waste, and office waste. As a result of these proactive programs, the final amount of waste in fiscal 2005 was just 40,000 tons, marking the second year in a row that we have surpassed our fiscal 2010 target of 72,000 tons ahead of schedule. We are committed to continuing to promote these and other 3R programs as part of our efforts to achieve a sustainable society.

![Graph showing waste management measures](image)

Initiatives

Reuse and recycling of used communications equipment

As providers of information and communications services, NTT Group companies own and maintain a great variety of communications equipment. With the aging of equipment and introduction of new services, we are forced to retire or replace about 200,000 tons of switching equipment, telephone poles, communications cables and other communications equipment each year. This used equipment is reused as much as possible within the NTT Group, and almost all items that cannot be reused are recycled. In fiscal 2005, 99.5% of such equipment was recycled, helping NTT achieve “zero emissions” for the second year in a row.

Collection and recycling of used phones and accessories, etc.

The NTT Group actively collects and recycles phones, faxes and other communications equipment no longer needed by our customers. In fiscal 2005 alone, NTT Group companies collected a total of 4.22 million phones and fax machines, 4 million batteries, and 1.97 million battery chargers. NTT EAST and NTT WEST both have programs to recover and recycle phone/fax equipment, small secondary batteries such as nickel-cadmium and lithium-ion batteries used in cordless handsets, and toner cartridges from plain paper fax machines. NTT DoCoMo too recycles 100% of the handsets, batteries, and chargers that it collects.

![Graph showing used communications equipment recycling](image)

Terminology

Emissions intensity index: The weighted average emissions relative of CO2 emissions relative to the base year, fiscal 1990, which is equal to 1.

Development of a centralized system to manage environmental data of buildings - Recycling of leased-expired PCs and other equipment - Environmental data

WEB

Zero emissions: A concept proposed by the United Nations University whereby all waste and by-products generated by industry are used as resources for other industry in an effort to eliminate waste entirely.
2-2 Reducing the environmental impact of our operations

[2-2-4 Reducing paper consumption]

Reducing Paper Use by Collecting and Recycling Old Telephone Directories, and Other Measures

- Virgin pulp consumption reduced to 26,000 tons through recycling telephone directories and increasing the recycled paper content in telephone directories and telegram forms
- Further reducing paper use through electronic billing and other ICT-based services

Reducing paper consumption

As a major consumer of paper resources for telephone directories and other publications, the NTT Group endeavors to reduce its paper usage through the recycling of telephone directories, double-sided printing of internal documents, promotion of paperless electronic billing, and various other measures. These efforts have enabled us to reduce our consumption of virgin pulp in fiscal 2005 to 26,000 tons, a decrease of about 7,000 tons over the previous year. We are determined to continue with these and other measures to further reduce our consumption of virgin pulp.

Initiatives

Recycling telephone directories

Production of the 129.5 million telephone directories distributed in fiscal 2005 required a massive 80,000 tons of paper, or 0.3% of all the paper consumed in Japan each year.

The NTT Group has been working to achieve "closed-loop" recycling - the collection of used directories that are reprocessed by paper manufacturers into recycled paper which is then used for the printing and binding of new telephone directories. Almost all telephone directories issued to our customers since September 2001 have been produced under this system.

Reducing paper consumption through Internet billing services

NTT EAST, NTT WEST, NTT Communications, and NTT DoCoMo all offer customers who pay their bills via automatic bank transfer or similar services a convenient billing reference service that enables them to view details of their bills via the Internet, e-mail, or mobile phones any time of the day. In fiscal 2005, some 538,000 additional customers began using this service, bringing the total to 3.582 million and saving nearly 698.6 tons of paper resources, equivalent to 175 million sheets of A4 size paper.

ISO 14001 Certification and Other Measures for Enhancing our Environmental Management

- 133 ISO 14001-certified sites serving as workplaces for over half of all NTT employees
- Working on environmental risk management, including dealing with asbestos, PCBs, and other hazardous materials

Promoting ISO 14001 environmental management

The NTT Group makes every effort to implement effective environmental management capable of responding to the specific circumstances that exist at each and every facility operated by our group companies. Between 1997 and fiscal 2005, 133 of our sites were certified as compliant with ISO 14001 environmental management standards. As of fiscal 2004, 50.2% of all employees at NTT Group companies worked at ISO 14001-compliant sites, and that figure increased to 51.6% by fiscal 2005. We are committed to the further pursuit of ISO 14001 certification and other measures to promote effective environmental management.

Environmental risk management

As a responsible corporate citizen, the NTT Group undertakes various measures to minimize any potential threat to society posed by risks such as environmental accidents and pollution. Activities performed periodically and systematically according to established guidelines and checklists as a part of this commitment include soil and water surveys, chemical management, and removal and storage of items using PCBs. We are also continuing our research into the effects of electromagnetic waves generated by mobile phones on the human body. Despite these efforts, in fiscal 2005 hazardous substances were detected at certain NTT premises at a level that exceeds the maximum level permissible under law. In all instances, appropriate measures were taken under the guidance of local authorities to achieve compliance with the law and ensure that there was no impact on surrounding areas.

The NTT Group will continue in its efforts to prevent environmental accidents and pollution through practicing effective environmental risk management.
2-4 Environmental communication

Working with Our Stakeholders to Implement Global Environmental Conservation Activities

- Providing information on environmental activities through reports and our website
- Participating actively in broader environmental protection initiatives to contribute to the creation of a sustainable society
- Putting priority on employee environmental awareness and two-way communication with our stakeholders

Environmental communication

The NTT Group actively communicates with the public regarding its environmental protection activities, providing relevant information through its environmental portal site as well as corporate website and reports. We also strive to raise employee environmental awareness, and to contribute to the creation of a sustainable society through actively participating in broader environmental protection initiatives. We value two-way communication with our stakeholders, and solicit their opinions and wishes through face-to-face dialog, website questionnaires and various other means.

Initiatives

- Publishing the NTT Group CSR Report, operating websites, and running advertisements on environmental issues

Our ongoing efforts based on our Ecology Program 21 concept have been summarized and published as the NTT Group Environmental Protection Activity Report since 1999, and as the NTT Group CSR Report since 2005. In addition to providing information on various aspects of our environmental activities through our website, we also run environmental advertisements in newspapers and magazines as part of our efforts to communicate with as many stakeholders as possible.

- Active participation in the WBCSD, Japan Low Carbon Society Scenarios toward 2050, and other initiatives

As part of our efforts to create a sustainable society, we participate in joint activities with international bodies such as the World Business Council for Sustainable Development (WBCSD), a worldwide coalition of companies seeking to set an industry-driven course of action for the creation of a sustainable society, and the Global Environmental Action (GEA) Project launched to resolve global environmental issues and contribute to sustainable development. We also participate in the Ministry of the Environment’s Japan Low Carbon Society Scenarios toward 2050 Project to study and plan medium- to long-term scenarios for countering global warming, and the Japan Environmental Efficiency Forum, an organization working for the standardization of methods for evaluating the environmental impact of ICT. The NTT Group remains committed to participating in such projects and working with others to contribute to the creation of a sustainable society.

- External evaluation and awards

Six NTT Group companies place in Nikkei’s Environmental Management Rankings

Six NTT Group companies ranked in the top 10 in the communications services category of Nikkei’s Ninth Environmental Management Survey results announced in December 2005, with NTT DoCoMo placing first. (Nikkei-Nihon Keizai Shim bun, publisher of Japan’s leading business daily).

2-5 Environmental technology R&D

Contributing to the Creation of a Sustainable Society through Environmental Technology R&D

- Conducting basic research and development in energy conservation, clean energy, and detection and detoxification of hazardous substances
- Cooperating on global environmental protection initiatives through providing environmental technology for international joint studies

Environmental technology R&D

One of the key elements of the NTT Group Ecology Program 21, which outlines the NTT Group’s basic approach to environmental protection activities, is R&D in advanced environmental technology. Led by NTT Laboratories, we conduct basic research and development in various fields including energy conservation, clean energy, and the detection and detoxification of hazardous substances. We also contribute to environmental protection initiatives of other countries such as Chile and the Philippines through active providing our environmental technology for joint research.

Initiatives

- Energy conservation

Developing silicon single-electron devices

NTT Basic Research Laboratories is conducting R&D in single-electron devices that work by controlling the movements of single electrons, using stable and easily processed silicon. One aspect of this research is development of the world’s first method for creating single-electron transistors for use in electrical circuits, with the aim of applying such technology to the production of high-performance integrated circuits. Since circuits using single-electron transistors function on far fewer electrons than conventional circuits and deliver high performance, they can reduce power consumption by about 10,000 times. And since they can also be made at least 100 times smaller than conventional circuits, they enable the creation of ultra-compact circuits with ultra-low energy consumption.

Clean energy

Development of a clean, high-performance back-up power system

Backup power systems are essential components in an age of ubiquitous broadband communications, supplying power to servers and other critical equipment in the event of power outages caused by disasters and other unforeseen circumstances. For over 50 years, conventional back-up power systems have used lead-acid batteries, which are not only heavy and take up a lot of space, but also need to be disposed of carefully since they contain lead, which is harmful to human health. NTT Energy and Environment Systems Laboratories developed a back-up power system that uses newly developed nickel metal hydride batteries instead of lead-acid batteries. Nickel metal hydride batteries are smaller and lighter than lead-acid batteries, twice as long-lasting, and since they are completely free of lead, are clean and environment-friendly.
2-6 Leveraging ICT to reduce environmental impacts

Developing Methods for Calculating and Evaluating the Effectiveness of ICT in Reducing Environmental Impacts

- Contributing to the creation of guidelines for calculating and evaluating the effectiveness of ICT in reducing environmental impacts
- Developing environmental impact assessment systems that enable calculation of the environmental impact reduction effect of ICT services provided by the NTT Group

Calculating and standardizing the effectiveness of ICT services in reducing environmental impacts

ICT services are known to be effective in reducing CO2 emissions by helping to minimize the movement of people and goods and the use of paper and other office supplies. However, until recently no standardized methods for calculating such environmental benefits existed.

The NTT Group has long been researching the effectiveness of ICT in reducing environmental impacts, and put its expertise to good use by providing its ideas on the calculation of the environmental impact of communications networks and actively participating in a work group of the Japan Forum on Eco-efficiency. This working group was established with the support of the Ministry of Economy, Trade and Industry to draft the Guideline for Information and Communication Technology (ICT) Eco-Efficiency Evaluation released in March 2006. These guidelines, the first unified standards for evaluating reductions in environmental impact attributable to the introduction of ICT, recommend the use of life cycle assessment (LCA) as a methodology. The guidelines consider the impact of network infrastructure and software used to provide ICT services in addition to that of the ICT equipment itself, and describe the methods used to calculate those impacts.

These guidelines help ensure objectivity, since evaluations can now be carried out based on a common standard for the impact of ICT services on the environment. For enterprises that have implemented ICT, the guidelines can serve as a useful and effective tool for restructuring management and business operations as well as implementing measures to counter global warming and address other environmental issues. In conjunction with the completion of these guidelines, the Japan Forum on Eco-efficiency has also prepared a pamphlet entitled ICT and the Global Environment, which provides an easy-to-understand explanation of the use of ICT services in addressing environmental issues. NTT contributed to the creation of this pamphlet in various ways including the provision of real-life examples of ICT services that offer major environmental benefits, together with benefit assessment results.

Calculations performed by NTT based on the guidelines indicate that the use of ICT services during fiscal 2005 resulted in a reduction of energy consumption that equaled 1.8% of Japan’s energy consumption. They also showed that overall energy consumption reductions increased by approximately 0.4% over the previous year.

The NTT Group aims to promote its Vision for Environmental Contribution through using the guidelines to calculate and evaluate the effectiveness of ICT in reducing environmental impact and use concrete data to show the benefits of ICT.

Please refer to Table 2 on page 16: "Using ICT to Reduce Environmental Impacts."
Providing communications services

This nation’s communications infrastructure is indispensable both as critical infrastructure for socioeconomic activities and as a Helix protecting the safety and livings of its people. The NTT Group works around the clock 365 days a year to provide highly reliable communications services by maintaining and operating its nationwide infrastructure in such a way as to ensure that it functions properly under any circumstances.

The NTT Group’s communications infrastructure

- 24,000 outdoor base stations
- 6,400 indoor base stations
- 1.65 million km of telephone lines, optical fiber, and other types of communications cable
- 620,000 km of core optical cable
- 648 km of cable tunnels
- 5,200 km of domestic undersea cables

Disaster response

NTT EAST, NTT WEST, NTT Communications, and NTT DoCoMo monitor operations 24 hours a day, 365 days a year from their respective operations centers, which can respond promptly to natural disasters, system malfunctions or other problems by remote switching to backup systems to restore service as well as dispatching maintenance personnel to undertake repairs. Group companies work as one to restore services as soon as possible, NTT FACILITIES handling the maintenance of electrical power facilities and other NTT Group buildings, and NTT COMWARE handling communications software issues. As an example of how operations centers respond to disaster situations, on the following page, we provide a glimpse of the activities of NTT EAST Network Operation Center.

Please see pages 36-37 NTT Group’s disaster countermeasures.

Monitoring the nationwide communications infrastructure from NTT EAST Network Operation Center

The 2005 Miyagi earthquake

A magnitude 7.2 earthquake occurred off the coast of Miyagi Prefecture in northeastern Japan at 11:46 a.m. on August 16, 2005. The telephone system throughout Miyagi and adjacent prefectures was immediately inundated with calls from worried relatives and friends, reaching a volume approximately 20 times the level of ordinary traffic.

At NTT EAST Network Operation Center, where we monitor and manage traffic on the nationwide fixed-line communications network, the situation was tense as emergency alarms began to go off and the large screen in the center of the room displayed a map of Miyagi Prefecture colored red, which meant we had serious congestion to deal with,” says NTT-ME Network Control Group Senior Manager Yukio Takabe, describing the situation at the time. Failure to alleviate congestion can result in the overloading of switching equipment and network paralysis, and so the network control officer immediately initiated network traffic control to bring the level of inbound traffic to Miyagi Prefecture down to manageable levels and ensure the availability of critical communications services needed for emergency rescue activities. At the same time, the Center began to investigate the extent of damage and report its findings to all relevant departments, and launch NTT’s Disaster Emergency Gnosis (Message) Dial 171 service to accommodate those people nationwide who were trying to reach friends and relatives in the affected area. It was this kind of prompt and appropriate response that enabled NTT EAST to ensure the availability of necessary communications services within Miyagi Prefecture itself.

The people and systems supporting appropriate response to emergencies

To enable rapid and precise response to disasters, the Center is equipped with advanced ICT-based operation tools. For example, a Network Control Navigation System enables the precise and comprehensive management of required actions in the event of an emergency, and enhances the speed and efficiency of information dissemination by e-mail, fax and so forth. “The way we were able to leverage the capabilities of these systems to manage operations was a major factor in enabling us to respond promptly and appropriately to the 2005 Miyagi earthquake,” says NTT-ME Network Control Group Network Operation Subgroup Associate Manager Takashi Tanaka.

To maintain and improve the quality of its operations, the Network Operation Center has obtained ISO 9001:2000 certification. The Center also puts priority on training, and staff are encouraged to improve their skills on their own initiative through an in-house certification system. Most Center staff have used this system to earn in-house qualifications of various levels up to the top Network Operations Professional qualification, holders of which lead operations on the Center floor.

“Our mission,” says Takabe, “is to ensure the ready availability of communications services even during emergencies.” Day in, day out, NTT Group company operations centers maintain their vigilance to be ready to respond to large-scale disasters and protect the communications infrastructure that is so critical to our society.
3-1 Providing a safe and secure user environment

Encryption, Spam Filtering and Other Technologies to Ensure Safe and Secure Communications

- Initiatives for creating a secure communications environment
- Focusing on initiatives to combat spam
- Adoption of NTT encryption technology as a global standard

Providing a safe and secure communications environment

The proliferation of ICT has been accompanied by increased risk to both individuals and corporations. Every member of the public is exposed on a daily basis to the dangers of ID theft, phishing, and fraudulent billing in the course of performing transactions at ATMs, using credit cards, making online purchases, or any other activity involving the use of confidential information. Use of the Internet and mobile phones to transmit spam and computer viruses or to gain unauthorized access to the personal information of others has become a serious issue. As a provider of ICT services, the NTT Group is committed to finding solutions to these threats so that it may continue to provide our customers with a safe and secure communications environment.

Initiatives

- Anti-spam measures
  - NTT Communications uses a number of anti-spam measures on its OCN Internet service. One such measure is a service launched in April 2006 that automatically blocks e-mail to OCN e-mail addresses sent via third party mail-hosting services often used by spammers. NTT Communications and NTT DoCoMo, in conjunction with other telecommunications carriers and major Japanese providers, have also established the Japan Email Anti-Abuse Group (JEAG), an organization for the promotion of unified anti-spam policies and technology.

R&D for creating safe and secure communications environments

The NTT Group is committed to the research and development of technologies for a safe and secure communications infrastructure capable of defending against abusive and illicit activities such as the theft of data or denial of service attacks. Technologies currently under development include maximum-strength encryption technology, cyber attack countermeasures, blocking of spam and other unsolicited e-mail, and protection against the theft of data on corporate networks.

Initiatives

- NTT’s Camellia encryption algorithm adopted as an international encryption specification
  - NTT Information Sharing Platform Laboratories, in conjunction with Mitsubishi Electric Corporation, has developed a 128-bit block cipher named Camellia, which is the first encryption algorithm developed in Japan to be adopted as a standard for major Internet security protocols. Camellia features world-class stability and performance, and has been adopted as an international standard cipher by ISO/IEC and recommended specification by other organizations too. The rapid proliferation and penetration of broadband has been accompanied by an increase in security issues such as data theft and unauthorized access. The NTT Group is committed to continued investment in security technology R&D aimed at providing safe and secure network services that customers can use with confidence.

3-2 Ensuring information security

Promoting Information Security Management to Ensure a Safe and Secure Network Environment

- Drafting and publication of the NTT Group’s Information Security Policy and privacy policies of individual NTT Group companies
- Proactive deployment of the latest security technology and ongoing employee education programs to protect our customers’ personal information

Promoting information security management

As a leader of Japan’s information and telecommunications industry, the NTT Group recognizes its responsibility to protect any and all personal information, especially that of our customers. With the full implementation of the Act on the Protection of Personal Information in April 2005, the NTT Group renewed its commitment to the protection of personal information by undertaking a complete overhaul of its organization and policies on information security. This process included the formulation and publication of the NTT Group’s Information Security Policy as well as privacy policies by individual group companies that define our position on information security issues. A systematic review of existing rules and regulations was also conducted, and the importance of these and other security measures was conveyed to management and employees alike through programs utilizing e-learning and other educational technologies.

Initiatives

- Information security and the protection of personal information
  - To ensure that every employee properly manages customers’ personal information, NTT EAST has prepared a guidebook called Guidelines for Customer Information Protection, and NTT WEST has created a Customer Information Protection Manual. These guides have been distributed to employees and used in seminars to further promote sound personal information management.
  - DoCoMo Shops operated by NTT DoCoMo protect personal information through means such as paperless storage of application forms and rigorous checking of the identity of each new subscriber. DoCoMo Shops also make very sure that no personal data can be retrieved from mobile phones returned to them by destroying them using specially designed equipment.

Another personal information protection initiative is a system developed by NTT LOGISCO for the recycling of confidential documents through the use of locked security boxes, known as SS-BOX, which are periodically collected in secure vehicles for recycling. This system allows the secure disposal of confidential information without the bother of shredding; and because it is environmentally friendly, the system has been adopted both by NTT Group companies and many other companies.

Furthermore, by the end of fiscal 2005, eight major NTT Group companies - had earned Information Security Management System (ISMS) certification for 129 of their sites and Privacy Mark (P Mark) certification for another 50.

*NTT EAST, NTT WEST, NTT Communications, NTT DATA, NTT DoCoMo, NTT CORWARE, NTT FACILITIES, and NTT Urban Development

Launch of SS-BOX from NTT LOGISCO

Termology

- Encryption algorithm: A formula used to encrypt communications or electronic data by replacing them with other letters and symbols to prevent a third party from knowing their contents.
Supporting Ubiquitous Broadband Communications through Promoting Appropriate Use of Communications Services

- Studying issues related to the spread of ubiquitous broadband communications from a social sciences perspective
- Proactively educating the public in appropriate communications service usage
- ICT-based initiatives to ensure child safety online

Research in support of safety and security in the age of broadband communications

The NTT Group is involved in a range of research to examine issues related to the spread of ubiquitous broadband communications from a social sciences perspective. InfoCom Research, Inc. conducts research in areas such as legal systems and issues related to Internet usage and the proper handling of personal information. The NTT DATA Research Institute for Systems Science cooperates with universities, affiliated research institutes, and related departments within NTT DATA to hold study sessions that promote security literacy. The NTT DoCoMo Mobile Society Research Institute has also published its Mobile Society Vision 2030 which examines both the potential benefits and pitfalls of mobile communications and provides recommendations for pioneering research in this field.

Promoting appropriate use of communications services

Mobile phones and the Internet have become an integral part of our daily lives, but they have also given rise to a number of issues regarding appropriate and ethical use of communications technology. It is the corporate responsibility of the NTT Group to work to educate the general public about these issues and help to resolve them, and we are making constant efforts in this area with the goal of creating a safe and secure Internet and mobile communications environment.

Initiatives

Children's blog that discusses both fun and manners on the Internet

In May 2005, NTT DATA launched a new version of the magazine online community site for children called "Universe Kids," which provides children with a forum to learn about and discuss issues such as netiquette and responsibility on the Internet, as well as introducing them to fun things to do. It also provides them with the opportunity to learn about and develop an interest in the social contribution activities of nonprofit organizations and companies through content such as a blog about service dogs.

DoCoMo mobile phone safety seminars

NTT DoCoMo has been organizing mobile phone safety seminars for elementary, junior high, and high school students as well as for the general public throughout Japan since April 2005. The goal of the seminars is to promote safe and secure use of mobile phones by children and fulfill the company’s social responsibility to protect children, and guidance is provided on such issues as avoiding the risks posed by online dating sites, spam, and fraudulent billing, as well as etiquette when using mobile phones in public places. During fiscal 2005, about 87,000 people participated in some 600 seminars so far provided by NTT DoCoMo as a public service to promote responsible use of communications technology. A further 1,000 seminars are planned for fiscal 2006.

Helping to protect children

Children are increasingly becoming victims of brutal crime, a sad situation that is leading parents, schools, and entire communities to look urgently into measures for protecting their children. The NTT Group is developing technologies to support these measures, including IC tags to verify the whereabouts of children, emergency notification services that enable schools to contact all parents and guardians at the same time, and mobile phones that can help to protect children.

Initiatives

Protecting children on their way to and from school

Children on their way to and from school are often out of the watchful eye of teachers and parents, and exposed to danger more than any other time of day. As one way to keep an eye on children, the NTT Group is currently running trials of a system using IC tags to help keep track of the whereabouts of children on their way to and from school. NTT DATA, in cooperation with Nissan Motor Co., Ltd. and other companies, has conducted verification testing on a system which notifies parents via e-mail of the time that children carrying IC tags pass a particular checkpoint. This system can also be used by children to alert parents, registered supporters, security personnel, and even passing drivers that they are in danger. Conceived as a support tool for protecting children and improving traffic safety, this safety service was used on a trial basis in Aoba Ward of Yokohama through March 2006. NTT Communications too conducted an experiment for the protection of children on their way to and from school in the city of Kurashiki in Okayama Prefecture from February 20 to March 8, 2006. It involved the use of IC tags and the Kawasemi Net, a public IPv6 network, to enhance existing arrangements within the local community to protect children and provide places for them to take refuge when they feel in danger. This experiment was performed under a Ministry of Internal Affairs and Communications fiscal 2005 program for R&D on Technologies for Advanced Use of Networked Electronic Tags.

Mobile phones that help keep children safe

NTT DoCoMo has devised a number of measures that help bring peace of mind to both parents and children through the use of mobile phones. For example, the Kid's PHONE FOMA 5A801, designed to provide user-friendliness and security for children, was launched in March 2006. This mobile phone features a protection alarm that when pressed sets off a loud alarm and sends emergency messages to the parents’ mobile phones and an "maddock search" location service which uses GPS technology to pinpoint the child’s whereabouts. The phone can also be set to automatically provide notification of where it was when its power switch was turned off. Such services not only provide parents with peace of mind and convenience, but can also actually help to protect children.

A new system for sharing information to protect children

From November 16, 2005, NTT DATA conducted trial operations of a new system called Chid'S Safety Communication Network for sharing information to protect children in the city of Ibaraki in Nara Prefecture. This system enables schools to send emergency information to phone and fax numbers, e-mail addresses, and mobile phone numbers registered by parents. The idea for this service came from female employees raising elementary school-age children, based on their opinions that information on child safety needs to be provided to all parents, including those who do not use e-mail, and that emergency alerts are meaningless unless they are issued promptly and provide accurate information. Based on the results of this trial, the new service began operation on a nationwide basis in July 2006.
3-4 The NTT Group’s disaster countermeasures

Disaster Proofing Our Services to Ensure that Communications Lines Remain Open Even After Disasters

- Measures for improving communications network reliability, securing critical communications, and enabling prompt restoration of service
- Providing our customers with means of checking on the safety of relatives and friends in the event of a large-scale disaster

Improving the reliability of communications networks

NTT Group companies have learned a great many lessons from their experiences during great disasters of the past, and are putting accumulated expertise to work in the creation of ever more reliable communications networks. For example, transmission lines are multi-routed for redundancy and telephone exchanges housing transit switches sufficiently dispersed that communications can be rerouted to avoid damaged areas in the event of a natural disaster. Our buildings, steel towers, and both indoor and outdoor communications equipment have all been designed to withstand not only earthquakes but damage from wind, water, and fire. We monitor our nationwide communications network 24 hours a day and are ready to respond to any eventuality at any time. Please also see Feature 3 on pages 30-31: Protecting the Communications Infrastructure.

Securing essential communications

As soon as an earthquake or some other disaster strikes, the telephone system of the affected area is inundated with calls from worried friends and relatives. Under such conditions, we suppress ordinary phone traffic to secure critical communications services necessary to conduct emergency rescue and restoration operations, maintain public order, and keep our 110 and 119 emergency number services going. We also provide Disaster Emergency Dengan (Message) Dial (171) and 1-mode Disaster Message Board services to the general public as a means of checking on the safety of relatives and friends in affected areas, and provide specially installed public telephones at evacuation sites and other facilities in affected areas for use by residents.

Fast recovery of services

NTT Group companies station highly mobile disaster response equipment at locations throughout the country to aid in the fast recovery of services and securing of critical communications in the event of a natural disaster. This equipment, which includes power supply vehicles, portable satellite communications equipment, and portable mobile base stations, can be deployed anywhere in response to a disaster. In cases where communications services have been disrupted by a major disaster, an emergency structure including a disaster management headquaters is immediately set up, and Group and affiliated companies also gather under this structure to form a wide-area support organization that works to promptly restore services.

Initiatives

Disaster response training for major earthquakes centered in Tokyo

Each year, NTT Group companies conduct disaster response training programs based on a variety of scenarios. For example, NTT EAST held three training sessions in fiscal 2005 that supposed a major earthquake centered in Tokyo, including a joint session on January 25, 2006 with the Japan Self Defense Forces (JSDF) in which JSDF helicopters practiced the airlift of disaster response equipment, and NTT EAST and JSDF personnel worked together to set up temporary communications lines.

On October 14, 2005, NTT DoCoMo too held an exercise based on a scenario in which a major earthquake struck the Tama area of metropolitan Tokyo. With field headquarters established in the city of Tachikawa, a variety of portable mobile base stations and power supply vehicles were dispatched to the affected area in what was a realistically staged comprehensive disaster response training program.

Responding to heavy snow

In the winter of 2005, the worst heavy snow in Niigata Prefecture in 19 years resulted in nearly twice the number of repair calls to communications facilities as in the previous year. With support from other Group and affiliated companies as well as from other service areas, NTT EAST dispatched an average of 626 repair workers a day to the affected area to carry out maintenance work such as the excavation of cables from deep snow. Other measures implemented to ensure the maintenance of communications services included the procurement of portable power generators and the purchase of fuel for them from areas outside Niigata Prefecture to maintain power supply to communications equipment in the face of intermittent widespread power outages.

WEB http://www.ntt.co.jp/esafety/index.html (in Japanese only) NTT Group’s disaster countermeasures website

WEB Facility Emergency Hotline - NTT facilities serve as emergency shelters for tourists

WEB Disaster response equipment and facilities
3-5 Enhanced customer satisfaction and even more reliable communications services

Working to Provide Customers with Safe, Secure and Reliable Services

- Acting on user feedback to improve customer satisfaction and the quality of our services
- Applying universal design principles to our services, shop layouts and R&D
- Offering business continuity solutions based on our expertise in providing communications services

Keeping our customers satisfied

The NTT Group believes in putting its customers first, and so pays close attention to user feedback to improve its operations and develop new services. For example, in addition to standard helpdesks for handling product, services, and repair inquiries, NTT EAST, NTT WEST, and NTT DoCoMo have also established customer consultation centers to field the opinions and requests of customers. These centers handled 500,000 calls in fiscal 2005. Each of our group companies has also introduced mechanisms for promptly acting on customer feedback to improve its business operations and practices. For example, NTT EAST’s “Six Committee” and NTT WEST’s “Customer First Activities Working Group”, and NTT DoCoMo’s “Customer Satisfaction Promotion Committee” are all companywide initiatives for studying and implementing improvements in their respective organizations. As part of its daily efforts to improve its operations, NTT DoCoMo has also established a system to promote and support customer satisfaction activities by collecting customers’ opinions into a database that can be used by the entire company to pinpoint problems and identify market changes early, implement and verify the effect of improvements, and incorporate them into business operations as quickly as possible.

Initiatives

Improving customer satisfaction
The NTT Group is implementing a range of measures designed to enhance customer satisfaction (CS). For example, a Hikari (optical fiber) Support Center was established at NTT EAST in February 2006 as a centralized facility for providing prompt response to inquiries, requests and technical support calls for Hikari Denwa IP phone subscribers. NTT DoCoMo conducts training seminars for personnel dealing directly with customers aiming at improving customer satisfaction. It has also compiled best practice examples from the most highly regarded DoCoMo Shops and other companies together with lectures by customer satisfaction consultants into a “CS Report” that has been distributed to employees to foster a customer satisfaction mindset.

NTT FACILITIES Group too has launched a group-wide program under the slogan “Honki de CS!” (Getting Serious about CS) to create posters for in-house display, and hold regular seminars and other activities aimed at enhancing customer satisfaction.

Universal design guidelines
NTT Cyber Solutions Laboratories has established JIS-compliant guidelines for the application of universal design to the creation of web content that is easily accessible to a wide range of users, including the elderly and the people with disabilities. During fiscal 2005, we held several universal IT design symposiums to promote recognition of universal design concepts. The first of these symposiums was for the NTT Group, while the second targeted the general public in order to promote wider awareness and understanding of NTT Group’s efforts to implement universal design. In fiscal 2005, we also developed checkUP, a new application software designed to verify the accessibility of web content based on these guidelines. This software enables content developers to quickly and effectively identify and correct accessibility issues in their content.

Ensuring business continuity for our customers

Management issues for businesses have come to include the drafting of contingency plans that will enable a business to maintain operations even in the face of natural disasters or to recover functionality within a specified timeframe if operations are disrupted. We share our extensive experience and knowledge in ensuring availability of communications services with others by offering one-stop business continuity planning (BCP) solution services to provide consulting, system configuration, and any other services required to maintain the business continuity of our customers.

For example, NTT EAST offers a Wide Area Disaster Recovery service that backs up and enables the recovery of essential system data contained in file and application servers. This is performed from remote facilities in a seismically stable location. NTT will continue to provide BCP solutions for protection against a wide variety of potential threats, including natural disasters, cyber attacks, information leaks, terrorism, and more.

Improving the quality of our services
As a leader of Japan’s information and telecommunications industry, the NTT Group recognizes its responsibility to provide customers with the highest quality products and services based on the latest available technologies. Research and development of technologies for the stable operation of broadband optical fiber networks and quality management based on ISO 9001 certification are just two examples of our continuing efforts to provide safe and secure services.

Universal design in everything we do

The NTT Group recognizes that population decline and the aging of society make it even more essential that communications services are easily accessible to any and every user. To such an end, we conduct R&D on universal design, and apply universal design principles to our services and handsets.

Initiatives

Prototype dual-screen mobile phone
The dual-screen universal design mobile phone developed by NTT DoCoMo offers a choice of menus to fit the needs of users, be they first-time or long-time users. For example, novice users can create on-screen icons for people that they call frequently to enable one-touch calling. We have also developed phones that enable attachment of external interfaces for those unable to operate standard phones by hand, and we continue to implement plans and research aimed at developing products that can be used easily by anyone.

Universal design guidelines
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Feature 4

Team NTT Social Contribution Initiatives

As members of Team NTT, we are committed to the promotion of both personal growth and the creation of a flourishing and vibrant community.

Team NTT

"Team NTT" is not a new organization, but rather about bringing all members of the NTT Group together as one to carry out a diversity of CSR activities. As described in the NTT Group CSR Charter on page 5, Team NTT members are people who endorse the NTT Group’s CSR activities. Members can be individuals working at NTT Group companies, including temporary employees, as well as our partners and former NTT employees who endorse the NTT Group’s CSR activities. Each and every Team NTT member pledges as part of the team to focus on the performance of their duties on the many issues faced by society today, and to contribute to resolving those issues with a shared sense of social responsibility, pride and high ethical standards to which the NTT Group aspires as a whole. It is through such concern for and participation in the community that we foster diversity in values and consideration for others. This contributes not only to personal growth but also to the fulfillment of our social mission to create a flourishing and vibrant community.

Team NTT social contribution initiatives

The NTT Group will continue as it has up to now to provide information and communications services in support of human communications. It is to this end that Team NTT is involved in a wide variety of social contribution initiatives. Many of the activities of Team NTT are launched on the initiative of employees of NTT Group companies. One of those is a workshop to foster understanding of those with hearing impairments, as is described in detail on the following page.

Team NTT's working group to foster understanding of people with hearing impairments

Improving customer services

The NTT mini-Project (Ear Project), a working group made up of NTT Group hearing-impaired employees and other employees who have close contacts with the hearing impaired, came into being in 1998. Its main activities consist of seminars and sign language workshops to raise awareness of hearing impairment within the NTT Group. The sign language workshops provide guidance on how to work and communicate with people with hearing impairments, and impart basic knowledge on hearing impairment and the difficulties faced by the hearing impaired, as well as training in greetings and other sign language necessary for everyday activities. We also operate an in-house mailing list called "mini-Tsushin (communications)" for sharing knowledge on hearing impairments. This has enhanced the exchange of information between NTT Group employees regarding hearing impairments and sign language.

Efforts to raise awareness among participants

Regular meetings of project members play an important role in supporting social contribution activities. Other group company employees are also invited to these meetings, where members give advice on the development of user-friendly products for the hearing impaired, discuss the pros and cons of existing products and services and propose possible improvements to them, and actively respond to consulting requests from Group companies. Spanning the entire Group, regardless of business or department, the NTT mini-Project also helps to raise the motivation of participants themselves. This can be seen in the various comments they have provided, some of which are given below.

For a society that serves everyone's needs

"As all of us come from various career backgrounds and age groups, these meetings provoke stimulating discussions in which we all pool our respective strengths. I want to continue with these activities to help create a society that serves everyone's needs." (Masayuki Inoue, NTT Service Integration Laboratories)

"My experience with the mini-Project has helped me when giving advice to my colleagues or employees with the same hearing impairments, when my own personal experience alone has not been enough." (Etsuko Iikawa, NTT Advanced Technology)

"We ask the members to test new ideas and their opinions help to shape actual shop services. The mini-Project provides an important opportunity to think about universal design as well as hearing impairments." (Masami Oka-mura, DoCoMo Support)

"The mini-Project not only helps to remind you of the importance of considering the needs of people with hearing impairments, but also provides an opportunity to acquire the latest information on the products and services developed by other Group companies for the hearing impaired." (Koysta Okawa, NTT CLARITY)
4-1 Social contribution activities

Actively Contributing to Society as a Corporate Citizen

- Embodying the NTT Group’s commitment to serving society in Team NTT’s social contribution activities
- Promoting social contribution activities through systems for supporting employee volunteer activities
- A wide spectrum of activities, including social welfare, promotion of education and culture, and international contribution

Team NTT’s contributions to society

Based on the NTT Group’s commitment to serving society as a corporate citizen, Team NTT involves itself in various social contribution activities. In 1992, the NTT Group created a Social Contribution Committee and Social Contribution Office through which it has since been actively working to contribute to society. Today, Team NTT members continue to contribute to society in a variety of ways based on the concept of corporate citizenship. Please see pages 43-44 Team NTT’s social contribution activities.

The NTT Group’s support system for employee volunteer activities

We support volunteer activities in a number of ways, in the belief that they not only contribute to the betterment of society, but also broaden the viewpoints of our employees and nurture consideration for others through promoting interest and involvement in society.

The NTT Group’s approach to supporting volunteers

Our policy for the support of volunteers contributing to the resolution of societal issues focuses on three basic steps-cultivation of a volunteer mindset, provision of opportunities for volunteer work, and support for volunteers.

Initiatives

Participation in the Japan Overseas Cooperation Volunteers program

NTT Group employees have been participating in the Japan Overseas Cooperation Volunteers program organized by the Japan International Cooperation Agency (JICA) on a continuous basis since 1966. Through this program, the NTT Group provides communications service- and computer-related technology in countries that need such support. Seven of our employees are currently working as volunteers abroad as of the end of June 2006, and the dispatch of a further three employees is planned for fiscal 2006.

Distribution of “Please Call” notebooks

NTT EAST and NTT WEST issue “Please Call” notebooks as a communication tool for customers with hearing or speech disabilities. The notebook can be used to write down a telephone number, name, and message and ask people nearby to make a call. This service started out as a customer request received at the then Nagareyama Telephone Office in Chiba in 1983, and is now in its 24th year. These notebooks are used today by a great number of people, with 220,000 handed out in fiscal 2005.

Promotion of education and culture

Providing instructors for the “e-Net Caravan” program

More and more children are logging on to the Internet in recent years, and while this brings many benefits, it also exposes them to an increasing number of Internet-mediated threats that are coming to constitute a serious social issue. It was to address this problem that the Ministry of Internal Affairs and Communications launched a nationwide initiative called the “e-Net Caravan” program together with the Telecommunications Carriers Association, five other organizations, and the Ministry of Education, Culture, Sports, Science and Technology. Started in fiscal 2006, this three-year initiative targets mainly parents and teachers in an effort to raise their awareness regarding safe and secure use of the Internet. The NTT Group has registered about 200 employees as instructors for the seminars as of the end of March 2006 and plans to dispatch them to 66 seminars to be held in the first part of the fiscal year. We hope to contribute to the spread of development of information and communications services through further such efforts to promote safe and secure Internet use.

Regional promotion and interaction

With the cooperation of Peace Winds Japan (PWJ, an NPO involved in humanitarian aid), NTT Communications organized an Internet class for Japanese elementary and junior high school students in which they were able to talk to PWJ staff posted in Afghanistan using NTT Communications’ IP videophone service. This initiative was implement ed to cultivate interest among Japanese children in what is happening in other parts of the world, and NTT Communications spent two months preparing for the event, mainly through the efforts of employee volunteers. Despite Afghanistan’s fragile communications infrastructure and a period of political instability just before the event, the IP videophone connected successfully on the day of the class, and the children were able to ask PWJ staff in Afghanistan about their work and lives there.

IP videophone interaction with NPO staff stationed in Afghanistan

NTT Group CSR Report 2006
4-1 Social contribution activities

Initiatives

Protecting the natural environment

“Operation Clean Environment” litter clearance events
Each year, NTT Group companies conduct “Operation Clean Environment” litter clearance events to clean and protect local environments and contribute to local communities. In fiscal 2005, 51,768 volunteers made up of NTT employees and their families participated in litter clearance activities together with residents from the localities concerned. We also actively participate in the Mount Fuji Cleanup Campaign, Mount Zao Cleanup Campaign, and other cleanup programs organized by local groups.

Promoting sports

Sports workshops held in local communities

NTT EAST, NTT WEST, and NTT DoCoMo organize baseball and badminton workshops for children in their local communities. They also host a kids’ soccer tournament, inviting J. League professional players and holding friendly matches. Other events include tug-of-war and dodgeball tournaments. The Group’s baseball clubs also organize baseball workshops to promote communication with local residents, with Group softball, tennis, and volleyball clubs also following suit. We hope to continue to contribute to local communities through such activities to promote the enjoyment of sports among the younger generation.

Volunteer activities by former employees

People who have retired from the NTT Group often continue to involve themselves as individuals or groups in various long-term volunteer activities that address local community needs across Japan. Examples include helping to promote participation in society by people with intellectual disabilities, helping to clean nursing homes and hospitals, providing elderly people with daily housework help, contributing to the promotion of local culture through serving as guides for local tourist spots or historical places, studying local history and imparting their knowledge of local history and culture to younger generations, helping to conserve the local natural environment through cleaning up streets, parks, and beaches, and so forth.

Others

Mobile Communication Fund (MCF)

NTT DoCoMo established the NPO Mobile Communication Fund in July 2002 as part of events to commemorate the company’s 10th anniversary. MCF is dedicated to the advancement of information and communications and the betterment of society in the coming age of ubiquitous mobile communications through activities such as those listed below.

Activity overview

• DoCoMo Mobile Science Award (in recognition of outstanding research results and academic papers on mobile communications)
• Scholarships for students and researchers from other Asian countries
• Financial support to grassroots groups carrying out social welfare activities in local communities
• Financial support to citizens groups working to protect children
• Financial support to worldwide model schools for school bioteases
• Centralised DoCoMo Group support for disaster and humanitarian relief, international cultural exchanges, and other projects
• Support for grassroots groups that DoCoMo Group employees participate in

4-2 Cultivating high ethical standards

Ensuring that Employees Conduct Business According to the Highest Ethical Standards

Surveying attitudes and conducting employee training and other awareness activities to maintain high ethical standards among our workforce

Raising employee awareness of human rights through various activities

Maintaining high ethical standards

The NTT Group conducts a variety of activities to raise employee awareness and ensure that high ethical standards are upheld in our business practices. This includes providing both directors and employees with ongoing educational opportunities through lectures given by outside experts and e-learning. Other ongoing activities include the display of posters to raise awareness, and use of the Internet to introduce cases studies. The NTT Group also strives to enhance its internal controls by conducting surveys to gauge employee awareness of corporate ethics and acting on the results of those surveys.

Raising human rights awareness

The NTT Group respects human rights, and is committed throughout its organization to resolving human rights issues and eliminating discrimination as a critical element in building an open and flourishing society.

To this end, we encourage employees to regard human rights as a personal issue, and work to deepen their understanding and awareness so as to perform their day-to-day business activities in a way that respects human rights. We provide a broad range of human rights education and training focused on such issues as discrimination, people with disabilities, foreign residents in Japan, the elderly, sexual harassment, and power harassment, as well as trends in human rights in Japan and abroad. Other activities to boost human rights awareness include soliciting slogans and ideas for posters on rights awareness themes from employees and their families, and compiling them into calendars for office use.

Initiatives

CSR education for employees through in-house training and leaflets

“What is CSR?” is an easy-to-understand leaflet about CSR for employees. As employee participation is essential for CSR, this leaflet provides an opportunity for each of us to think about how we can fulfill our CSR obligations through business, environmental conservation, and social contribution activities. In fiscal 2005, the leaflet was used in the CSR training program for all 2,700 employees of NTT Corporation and also handed out to some 20,000 employees of 16 NTT Group companies.
Creating Vibrant and Dynamic Workplaces and Enabling Employees to Realize their Full Potential as Professionals

Diversity in human resources

Employment in the NTT Group

Achieving a good work-life balance

The NTT Group has established policies for child care and nursing care benefits that allow our employees to maintain a good work-life balance that goes beyond legally mandated levels. To encourage NTT employees to take advantage of these benefits, we have also created an NTT Group Child Care and Family Care Support site on our intranet where employees can find information on both the NTT system and the Japanese social security system. Online distance learning courses and information about NTT business developments and industry trends are also made available to employees on matters and other leave to enable them to fit in again smoothly when the time comes to return to work.

With the declining birthrate, we have shifted weight from spouse to children and other dependents in calculating family allowances by implementing revisions to allow increases without an upper limit imposed when a certain number of dependents is reached. The NTT Group is committed to developing forward-looking policies based on the principles espoused in Japan’s Law for Measures to Support the Development of the Next Generation, and as such, we endeavor not only to establish necessary programs, but also to ensure that these programs are easy and convenient to use and are taken advantage of by our employees.

Examples of NTT Group family benefit programs

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child care leave</td>
<td>Available for parents of children less than three years old. Allowance to be paid for: up to 1 day a year for each child in the family with whom the parents reside, up to 5 days for a couple with twins, and up to one year for the period in which the child is in school. Allowance to be paid for: up to 1 day a year for each child in the family with whom the parents reside, up to 5 days for a couple with twins, and up to one year for the period in which the child is in school.</td>
</tr>
<tr>
<td>Reduced working hours</td>
<td>Subject to approval by the divisional manager of the employee’s workplace. Allowance to be paid for: up to 1 day a month for each parent in the family.</td>
</tr>
<tr>
<td>Child care support service</td>
<td>Allows employees to hire day-care centers for their children.</td>
</tr>
<tr>
<td>Nursing leave</td>
<td>Reduced working hours up to 16 months at a time to provide family nursing care for a child under three years old.</td>
</tr>
<tr>
<td>Reducing work hours</td>
<td>Reduced working hours up to 16 months at a time to provide family nursing care for a child under three years old.</td>
</tr>
<tr>
<td>Postnatal care</td>
<td>Necessary for the employee’s child’s health and well-being.</td>
</tr>
<tr>
<td>Occupational therapy</td>
<td>Necessary for the employee’s child’s health and well-being.</td>
</tr>
</tbody>
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Occupational safety

All NTT Group companies recognize the importance of proactively implementing occupational safety programs to prevent accidents in the workplace. Work conditions and standard operation manuals are constantly reviewed, and case studies are used to inform employees and maintain their awareness of occupational safety issues. In the unfortunate instance that an accident does take place, the NTT Group performs an internal review of conditions, contributing factors, and measures for preventing recurrence, which is promptly shared with all Group companies.

We make every effort to ensure that our employees are well-educated about safety issues, are constantly reminded of the importance of workplace safety, and are able to apply their knowledge in the prevention of accidents. Some of our facilities also hold thorough safety inspections on a monthly basis. The NTT Group is committed to ensuring occupational safety in each of its member companies.

Employee benefits

The NTT Group has implemented a wide range of social welfare policies and benefits that are intended to provide security and ensure that its employees are able to devote themselves wholeheartedly to their duties from the time they join an NTT Group company until they retire. Employees are able to take advantage of these policies and benefits in accordance with their own personal lives.

(1) We provide a wide range of information and educational programs regarding the design of personal lives.
(2) We provide a cafeteria plan enabling employees to select from a wide range of social welfare plans that match individual lifestyles.
(3) Company dormitories and housing are available throughout Japan for employees posted to new locations as a result of transfers, etc.
(4) Employees may utilize any of several health management programs, including periodic examinations and counseling.
(5) Various asset accumulation plans are available, including employee savings schemes and employee stock plans.
(6) Company subscriptions, citizenship and congratulatory allowances, and other lifestyle support programs are provided for employees.

Personal growth for all employees

Personnel and pay system

In 2001, the NTT Group introduced a performance-weighted pay system, and in April 2006 revised this system to place even more priority on personal performance with the aim of further boosting employee motivation.

Under the revised system, in addition to the continued implementation of already established systems for providing training in performance evaluation and gathering feedback from employees on their personal performance evaluations, we are seeking to enhance the impartiality of our performance evaluation system and employee satisfaction with it through introducing multi-source evaluation, providing high performance case studies, enhancing training for improving reciprocal evaluation skills of both evaluators and employees, and developing online guidance to help employees to better understand how the system works.

We feel that the above enhancements to our pay system will create a better motivated, better disciplined workforce capable of demonstrating initiative and improving performance.

Creating opportunities to seek new challenges

In order to provide ambitious employees with the opportunity to seek new challenges, we run in-house recruitment programs such as NTT Group Job Challenge and NTT Group Venture. NTT Group Venture is a program permanently open to all NTT employees that aims to create and develop new business ventures and foster entrepreneurship. The program has already led to the establishment of two new companies.

A workplace where everyone feels safe and secure

We strive to foster an environment where everyone feels safe and secure because we believe that team spirit is the key to promoting new values and creating a new sense in the workplace. We try to ensure that all employees feel secure by providing a variety of programs and initiatives.

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Communicating with Shareholders, Investors, Suppliers and Other Stakeholders

NTT recognizes that it is critically important to serve the best interests of its shareholders and other investors over the long term. The group as a whole has been making a concerted effort to enhance corporate value and appropriately award shareholders part of that value. At the same time, we are striving to improve the transparency of management through appropriate disclosure and IR activities so that shareholders, investors, and other stakeholders can make correct evaluations of our business performance.

About NTT stock
NTT stock has, since privatization in 1985, gone through six offerings of government-owned shares, and as of the end of fiscal 2006, is in the hands of around 1.26 million shareholders. We also instituted a repurchase of shares on September 6, 2005, at which time the government sold more of its remaining stock, bringing its share down to only 33.7% and almost completely eliminating supply pressure (overhang) from government offerings. The chart below shows the breakdown of NTT shareholders as of March 2006.

Dividends
NTT (Holding Company) dividends are determined according to overall business trends and our financial situation, taking into account the ability to maintain stable and continuous operations. From fiscal 2006, NTT plans to increase the yearly dividend per share from ¥6,000 to ¥8,000, going into effect from the interim accounting period.

Disclosure and IR activities
NTT (Holding Company) has listed its shares on several stock exchanges (Tokyo, Osaka, Nagoya, Fukuoka, Sapporo, New York, and London), and has issued domestic and foreign bonds to procure funds. NTT considers it extremely important to establish and maintain relationships of trust with its shareholders and investors in both domestic and foreign capital markets, and accordingly discloses information in a timely, appropriate and impartial manner, fulfilling its accountability as a business corporation and ensuring management transparency. To help shareholders and investors to better understand its management strategy, NTT also actively conducts IR activities, and provides opportunities for direct communications between shareholders and top management of the company by holding various events in addition to general shareholders’ meetings, including IR roadshows, corporate strategy briefings, financial results briefings, and presentations for investors in corporate bonds. NTT is committed to impartial disclosure to shareholders, investors, and other stakeholders, and makes active use of its IR website to meet its obligations in this respect. The site provides presentation materials and videos of various briefings in addition to earnings releases, financial results, and annual reports.

Communicating with suppliers
To continue to provide its customers with competitive and state-of-the-art services at reasonable prices, the NTT Group considers it essential to introduce cost-effective new technologies and products on a timely basis. To that end, it has become increasingly important for us to accurately identify customer needs, establish good partnerships with suppliers, and work closely with them to achieve the broadband and ubiquitous network society.

We have accordingly formulated and published basic procurement policies aimed at establishing open, trust-based partnerships with our suppliers. We also post procurement information on our website so it becomes available to enhance the convenience of suppliers, and have procurement contact points in North America and Europe as well as in Japan for holding inquiries and providing guidance on procurement.

Communicating with customers
The NTT Group showcases its vision for the future of communications at various exhibitions and events. For example, we presented a look at how lifestyles will change in an age of ubiquitous broadband communications, and the role of the NTT Group in realizing that vision, at the NTT Group Communications EXPO held to commemorate the 20th year since NTT’s privatization in December 2005 at the Tokyo International Forum. The event provided a glimpse into the future of communications to about 10,000 visitors over the space of three days. We also held NTT R&D forums in the city of Tsukuba and other locations to disseminate the fruits of our R&D for the benefit of society and industry. Furthermore, at EXPO 2005 AICHI JAPAN, NTT DoCoMo demonstrated new possibilities for mobile phones by holding trials of handsets equipped with contactless IC chips. These phones are now commercially available as “Osaka-Kelita” wallet phones.

Dialog with stakeholders
In an effort to enhance its CSR activities, the NTT Group held a meeting with stakeholders on March 10, 2006 for which it invited experts in a variety of fields from outside NTT for discussions on public expectations for NTT Group CSR. The valuable opinions and suggestions received from participants will go into improving our future CSR activities.

Comments from stakeholders
- “NTT would be a truly great company if all of its 200,000 employees participated in social contribution activities.”
- “NTT is a corporate group that puts communications at the forefront of its activities, so I’d like to see it focus more on communicating.”

Actions prompted by these comments
- We will spread word on the importance of CSR to employees, and expand Team NTT’s social contribution activities.
- The NTT Group CSR Charter was established with “communication” as its key concept, and we will continue to promote activities in this area under the CSR Charter.

In partnership with shareholders, investors, suppliers and other stakeholders